CH-103 INORGANIC CHEMISTRY (R-16)

Lecture: 4h/week Sessional Marks: 40

Sem End Exam: 3hrs Sem

End Exam Marks: 60 Credits: 3

Description/Topic	Learning out comes	Teaching Mode: BB/LCD/OHP/Video	No. Of Class
Unit-I			15 periods
Introduction to mole Concept-Stoichiometry, Simple problems on Mass-Mass, Mass-Volume, Volume-Volume relation,m Oxidation Number, Redox reactions and Balancing equations	Student can establish relationship between volume,moles of reactants and productsusing concepts of stoichiometry (useful in chemical technology)	BB BB BB BB BB BB	1 3 1 2
Principles of metallurgy Purification of metals-physical methods Chemical methods Ion exchange methods in metallurgy Solvent extraction methods in metallugy	Would be able to learn extraction and purification of some metals	BB BB BB BB BB	1 1 2 2 2
Unit-II			15 periods
Introduction to types of chemical bonding Valence bond approach for diatomic molecules VSEPR theory Hybridization and shapes of molecules	Student can relate various theories, using which he can have insight at structure and relativity of compounds. Would be able to predict the type of bonding and properties like	BB BB BB	1 2 2

Molecular Orbital Theory with respect to O_2, O_2^- Molecular Orbital Theory with respect to N_2 and CO molecules Resonance, Dipole moment Bond length, Bond energy, Bond angle	magnetic, spectral etc. Of a given substance	BB BB BB BB BB	3 2 2 2 1
Unit-III			15 periods
Introduction to d-block elements, electronic configuration. Its general characteristics oxidation states of transitional elements Preparation and properties of $KMnO_4$ and $K_2Cr_2O_7$ Introduction to f-block elements-Electronic configuration-its general Characteristics Oxidation states of inner transitional elements	Would learn properties and preparation of selected compounds of the transition and inner transition elements	BB BB BB BB BB	1 4 5 1 2 *2*
Unit-IV			15 periods

Introduction to Co-ordination compounds Types of bonding in transition metal complexes Crystal field theory and crystal field stabilisation energies Crystal field theory for octahedral complxes Crystal field theory for tetrahedral and square planar complxes Jahn-Teller theorem Spectral and magnetic properties	Would be able to know how the draw backs of valence bond theory overcome by crystal field theory.Reasons for obeying HUND'S RULE in some complexes and violation of HUND'S in some complxes. How CFSE useful for explaining spectral properties of complexes	BB BB BB BB BB BB	2 1 3 2 1 2 2 2
Unit-V			10periods
Hardness of water and units Determination of hardness of water using EDTA Lime-Soda process and problems Ion-exchange process Zeolite process with examples WHO guidelines Chlorination method Break point chlorination	Would be able to know dissolved impurities in water, causes for hardness and removal of hardness and its determination, purification of water by chlorination methods.	Bb BB BB Bb BB	2 2 2 1 1

		BB	1 1

Course Coordinator **Head of the Department**

CH104 (R16) – ENVIRONMENTAL STUDIES– LECTURE PLAN

S.No.	Topic	Learning outcomes	Blooms Taxanomy	No. of Periods	Teaching methodology
1	**UNIT 1: Introduction**	Introduction to course objectives and outcomes	Understand	1	BB
2	Multidisciplinary nature of environmental studies	Understand what is environment how environment is related to different disciplines	Understand	1	BB
3	Definition and scope & importance of Environment	Able to understand the importance of environment	Understand	2	BB
4	Need for public awareness, components of environment and their interactions	Need to develop awareness among people regarding environmental issues and getting idea regarding the components of the environment	Understand	2	
5	Natural Resources-Forest Resources	Basic idea about different types of resources and in detail about forest resources	Understand	2	BB
6	Forest resources : Causes, effects, effects on Environment, control measures,	Understand what are forest resources , what are its effects on environment and control measures	Understand	2	BB
7	Case study: Chipko Movement and *Mining*: social damages of mining, mineral resources of India.	Understand the present situations facing around the globe by a case study regarding forest resources and mining	Understand	1	BB
8	*Dams*: purposes of Dam, Benefits of Dams, problems with dams, Impacts of Dams, Displacement due to Dams,	Students able to know the importance and purpose of construction of dams and also inculcate the benefits and problems with dams due to displacement of people	Understand	2	BB
9	Case study: Narmada River Dams, Three Gorges Dam..	Understand the present scenario on dams with case studies like Narmada River Dams, Three Gorges Dam.	Understand	1	BB
10	Energy resources- sources, types , advantages and disadvantages, energy and environment	Explain the importance of energy and environment and advantages and disadvantages	Understand	2	BB

11	Renewable energy- solar power, wind, geothermal, hydro-electric power, marine , biomass, hydrogen energy, Fuel cell , energy saving tips.	Understanding the need of shifting to renewable resources like solar solar power, wind, geothermal, hydro-electric power, marine , biomass, hydrogen energy, Fuel cell	Understand	3	BB
12	*Land resources*- land degradation, soil Erosion, desertification, landslides. Role of an individual in conservation of natural resources.	Understand what are land resources and understand the terms land degradation , deforestation, desertification, landslides	Understand	2	BB
13	Role of an individual in conservation of natural resources.	Students able to understand the role of an individual in conserving natural resources	Understand	2	BB
14	Structure and function of an ecosystem, Energy flow in the ecosystem	Able to understand the concept of ecosystem and structure and function of an ecosystem.	Understand	2	BB
15	Food Chains and Webs, Ecological Pyramids, biological magnification , Biogeochemical Cycles	Concept of food chain and food web and biogeochemical cycles like water cycle, oxygen cycle , carbon cycle, nitrogen cycle etc.	Understand	1	BB
16	Forest eco system, Grassland ecosystem, Aquatic Ecosystem, Desert Ecosystem	Briefing about different types of ecosystems and their uses, effects and control measures of ecosystems.	Understand	3	
17	**UNIT III: Biodiversity**	Understand the term biodiversity and different types of biodiversities.	Understand		
18	Genetic, Species and Ecosystem diversity. And Values of Biodiversity	Genetic, Species and Ecosystem diversity. Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values.	Understand	2	BB
19	Bio-geographical classification of India and India as a Mega diversity nation	How India is classified in to different bio geographical zones and how can we justify India as a mega diversity nation	Understand	2	BB
20	Endemic and endangered species and Threats to Biodiversity	Understand which species we called as endemic species and endangered species what are the threats facing by the endemic species	Understand	1	BB
21	Hot spots of Biodiversity and Conservation of Biodiversity. Case study: Silent Valley Project.	Understand what is a hot spots and they will know what are the available hot spots in India and also know about the conservation of biodiversity - Insitu and Exsitu	Understand	2	BB

		conservation			
22	Environmental Pollution – Air Pollution – Causes, Effects and Control Measures	What is air pollution and students came to know about the sources, effects ,causes and control measures regarding air pollution.	Understand	1	BB
23	air pollution control technologies	Understand different air pollution control technologies like Cyclone separator, bag filter, Electro static precipitator (ESP), wet scrubber used in industries	Understand	2	BB
24	Water Pollution - Causes, Effects and Control Measures	What is air pollution and students came to know about the sources, effects ,causes and control measures regarding air pollution	Understand	1	BB
25	Treatment of sewage- Primary treatment, Secondary treatment- Activated Sludge Processes	In detail about treatment methods of slude like primary , secondary and territory treatment along with activated sludge process	Understand	2	BB
26	Trickling filter, septic tank, oxidation pond and Tertiary treatment-.Microfiltration, Ultrafiltration, Reverse Osmosis. Case study: fluorosis	Understand different water pollution control technologies like Microfiltration, Ultrafiltration, and Reverse Osmosis.	Understand	3	BB
	UNIT IV:				
27	Soil Pollution- Causes, Effects and Control Measures	What is air pollution and students came to know about the sources, effects ,causes and control measures regarding air pollution	Understand	2	BB
28	Noise, marine pollution- Causes, Effects and Control Measures	What is air pollution and students came to know about the sources, effects ,causes and control measures regarding air pollution	Understand	1	BB
29	Solid Waste Management and Hazardous Waste Management, Role of individual in pollution prevention.	Types of solid waste, 3R Concept, Causes, effects and control measures – Composting, Vermicomposting, Landfills, Incineration, Disposal methods, Hazardous Waste Management, Role of individual in pollution prevention.	Understand	3	

	UNIT V:				
30	Social Issues and the Environment: From Unsustainable to Sustainable development	Sustainability – Introduction and Elements of Sustainable Development	Understand	2	BB
31	Rain water harvesting- Ralegaon siddhi, and watershed management -Resettlement and rehabilitation of people its problems and concerns:	Urban problems related to energy -Water conservation based on practical case studies .	Understand	1	BB
32	Environmental Ethics: Issues and possible solutions. - Climate change, global warming, acid rain- Tajmahal- Madhura refinery, Ozone layer depletion, nuclear accidents- Chernobyl Nuclear disaster,	Climatic changes – along with possible solutions to control pollution	Understand	1	BB
33	Environmental acts: Prevention and Control of Water pollution, Air pollution, Wildlife protection act, environmental protection act and forest conservation act	Students are able to know what are different types of acts available and what are the measures and duties they are adopting to protect the environment	Understand	4	BB
34	Stockholm conference, Earth Summit , Copenhagen Summit 2009 , COP21 Paris Climate Conference.	Understand the concept of environment meetings held world wide and to know environment protection	Understand	2	BB
35	Field Work:		Apply	3	
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Course Coordinator **Head of the Department**

CH-109 PHYSICAL CHEMISTRY (R-16)

Lecture: 4h/week | Sessional Marks: 40 | Sem End Exam: 3hrs
Sem End Exam Marks: 60 | Credits: 3

Description/Topic	Learning outcomes	Teaching Mode: BB/LCD/OHP/Video	No. Of Classes
UNIT-I –Gases state and dilute solutions		BB	
Boyle's law-Def, mathematical and graphical representation and simple problems	Knows relation between pressure and volume	BB	2
Charle's law and Ideal gas equation, problems	Knows relation between pressure— temperature and volume --temperature	BB	2
Dalton's law of partial pressures, Amagat's law of partial volumes, problems	Knows relation partial pressure and total pressure	BB	2
Vanderwaal's equation – derivation and problems	At low volumes and high pressures the behaviour of gas	BB	2
Henry's law ,Roult's law,problems	Knows relation between pressure and solubility of gas, vap. Pressure of solution	BB	2
osmotic pressure, problems	Learns phenomenon of osmosis. and its utility	BB	2
UNIT-II - Thermodynamics		BB	
Terms and basic concepts and processes	Gets an idea about system, surroundings,proess,intensive ,extensive properties.	BB	2
Reversible and irreversible processes,	Knows differences between these two	BB	1
Pressure-volume work, internal energy and problems	Knows calculating work done	BB	2

Enthalpy, molar heat capacities		BB	1
Adiabatic and isothermal expansion of gases and problems on work done	Knows expansions and work done	BB	2
Spontaneous process, entropy, second law of thermodynamics	Learn about entropy and different forms of second law.	BB	1
Entropy change-for ideal gas and for phase changes, problems	Knows formula and how to calculate entropy changes	BB	2
Physical significance of entropy, Trouton's rule	Gets knowledge about entropy	BB	2
UNIT-III Thermodynamics and phase rule.			
Free energy, Work function and free energy for ideal gas,	Knows significance of free energy and work function changes	BB	2
Gibb's Helmholtz's equation	Learns the relation between free energy cange and entropy change	BB	1
Clasius clapeyron equation.Van't hoff isotherm, problems	Knows relation between temperature and,latent heat of vaporisation	BB	2
Third law of thermodynamic	knows crystallinity of a compound at absolute zero	BB	1
Phase rule and explanation of terms	Knows about phase, component, degrees of freedom	BB	2
Phase diagram of water system	Conditions under which water can exist in single, two and three phases	BB	1
Phase diagram of lead-silver system and application of eutectic	Knows about conditions for the existence of silver phase, lead phase and liquid phase, usage of eutectics	BB	2
UNIT IV Chemical equilibria and Distribution law			

Chemical equilibria-Reversible reactions, law of mass action	Learns to write rate of reaction expression	BB	1
Equilibrium constants k_p ,K_c, K_x and problems	Learns to write expressions for rate constants, and relation between them	BB	2
Van't Hoff equation, problems	Knows relation between eq.constant and temperature	BB	2
Lechatelier's principle and applications	Knows utility of principle on heterogeneous equilibria	BB	1
Nernst's distribution law-explanation ,derivation and limitations	Knows distribution of solute in solvents	BB	1
Nernst's law modified when solute undergoes dissociation or association,problems	Knows distribution of solute in solvents	BB	2
Determination of equilibrium constant		BB	1
Extraction of solute from solution with an immiscible solvent,applications of distribution law	Knows utility of law in various places	BB	2
UNIT V Chemical kinetics and catalysis			
Chemical kinetics- order, Molecularity, activation energy,specific reaction rate	Knows meaning and significance of these terms	BB	2
First order reactions, half life period, problems	KNOWS HOW TO DERIVE RATE CONSTANT	BB	1
Second order reactions,half life period, problems	Knows to derive rate constant and able calculate rate constants	BB	2
Effect temperature on reation rate- Arrhenius equation	Knows relation between temperature and rate/rate constant	BB	1
Catalysis; Homogeneous and heterogeneous catalysis ,characteristics of catalyst	Knows the difference and characteristics	BB	2
Promoter, negative catalyst and catalytic poison	Knows their role in catalysis	BB	1

Adsorption theory of catalysis	Gives insight into the mechanism/catalytic process	BB	1
Enzyme catalysis-Michelis—Menton enzyme kinetics. Industrial applications of catalysis	Knows the conditions at which enzyme reactions are fractional order, first order and zero order	BB	2

Course Coordinator **Head of the Department**

Dr. P. Anantha Lakshmi

CH 110 ENGLISH FOR COMMUNICATION – (R16)

Lectures : 3 periods / week *Sessional Marks : 40*

Semester End Exam Marks : 60

Semester End Exam : 3 hrs *Credits : 3*

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I			**(12)**
LEXIS:			
Synonyms	Students learn synonymous meanings and their application	B.B.	2
Antonyms	Students learn opposite words and their application	B.B.	2
Words often confused	Students understand and learn meanings of different words and their usage in different contexts	B.B.	2
B. One word substitutes	Students comprehend and learn usage of words	B.B.	2
Analogy	Learn to analyze the meanings of words and think rationally in application and usage .	B.B.	2
	Develops critical , and logical thinking skills –practice sessions		2
UNIT- II			
Written Communication			**(12)**
NOTE TAKING	Understand meaning of Note Taking and its uses , how to take notes , Features of efficient notes.	B.B.	2

	Learn different methods of Note Taking- Practice – Analyze the difference and usage of models learnt in a practical way .	B.B.	2
NOTE MAKING	understand the differnce between Note taking and Note making ana their usage – Listening , Reading and Writing Skills are developed through these techniques – Acknowledge their significance	B.B.	2
WRITING A PROPOSAL	Understand Meaning and purpose of a proposal.	BB	2
	Differentiate between models and their Features and application . Learn how to write a Proposal in different contexts .	B.B.	
MEMO WRITING	Understand Meaning and purpose of a proposal.	B.B.	2
	Differentiate between types of memos and their Features and application . Learn how to write a memo in different contexts and formats .	B.B.	
PARAGRAPH WRITING	Understand the significance of Topic sentence, Determiners and Qualifiers in a paragraph. Role of Coherence and Cohesion in a paragraph .	BB	2
	How to write different types of paragraph using and highlighting their specific features	B.B.	
UNIT-III			**(12)**
Principles of Grammar:			
Basics of grammar	Revising with Significant emphasis on grammar principles like articles & prepositions - Practice exercises	B.B.	2
Tenses	Learning types of tenses , and their usage .practice exercises on all types of tenses ,	B.B.	2
Voice	Understanding the usage of active and passive voice. Practice exercises	BB	2
Speech	Understanding the significance of Direct and Indirect speech.		2
	Practice exercises on all types of sentences	B.B.	2
	Revision and working out of Correction of sentences- Models , question papers	BB	2
UNIT-IV			**(12)**
Communication:			
Forms of communication	Understanding the difference between communication and conversation.types of communication	BB	3

Barriers to communication	Understanding and identifying the Barriers to communication.	BB	4
Non verbal communication Types	Understanding the difference between verbal & Non Verbal communication Analyzing Non Verbal communication and its scope. Kinesics, Proxemics, Occulesics ,Haptics	PPT	5
UNIT- V			
COMPOSITION	Understand and acquaint themselves with diverse features of professional communication	BB	
E-Mail	Understand and acquaint themselves with diverse features of Email communication. Email-etiquette, guiding principles, language, reasons for the popularity of Emails, develop knowledge and skill to write effective emails. Practice Writing Emails	BB	3
Letter writing	Understand and acquaint themselves with different features of professional Letter Writing. Practice different letter writing models	B.B.	3
Precis writing	Understanding the significance of Precis Writing – Practice precis Writing	B.B.	3
Biographical writing	Learn to write biographies of famous personalities. practice writing biography of APJ Abdul Kalam, Rattan Tata, Sudha Murthy, Mother Teresa	B.B.	3
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Course Coordinator **HOD**

CH 112 INTRODUCTION TO CHEMICAL ENGINEERING – I (R16)

Lectures : 4 periods / week *Sessional Marks : 40*

Semester End Exam Marks : 60

Semester End Exam : 3 hrs *Credits : 4*

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I			
Introduction to the Course	Introduction about the course. Course objectives and outcomes	**BB**	1
Definition, History, Scope of Chemical Engineering, Role of Chemical Engineer	Understand the inception, growth and scope of Chemical Engineering	BB	1
Nature of Chemical industries and the applications of chemical engineering	Understand how the chemical engineering is applied in elsewhere	BB, PPT	1
Scale up and scale down with examples	Understand how the laboratory experiment is scaled up to an industrial operation/process	BB, PPT	1
Application of various chemical engineering equipment as well as products	Understand the importance of chemical products and equipment	BB	1
Flow diagram and flow sheet with examples	Understand how a chemical process is shown on a diagram and how a process is run in an industry shown on a flow sheet that contains all the unit operations and processes	BB, PPT	1
Batch versus Continuous process	Be able to differentiate a batch process from a continuous process	BB	1
Batch to Continuous Process	Be able to understand how a batch process can be transformed to a continuous process	BB	1
Role of Basic Sciences	Able to understand how the concepts of mathematics, physics, chemistry and life sciences are applied in chemical engineering	BB	1
Units and Dimensions	Be able to learn units of various quantities of chemical engineering and also the	BB	1

	conversion of those units from one system to another system & the dimensional analysis of the same		
Unit Operations and Unit Process	Be able to understand the difference between unit operation and unit process in chemical industries with the help of demonstration in the laboratory and presentation some industrial processes or videos	BB, PPT, Videos	1
Basic Laws	Understand clearly about the basic flow equations/principles/kinetics those are applied in chemical engineering to solve the chemical engineering problems	BB	1
UNIT- II			
Principles of Stoichiometry: The basis, and stoichiometry	Be able to calculate simple proportion requirements of components for the chemical reaction to happen according to stoichiometry and able to understand the basis of each calculation	BB	1
Methods of Expressing compositions of the mixtures and solutions	Be able to learn how to express the compositions of components in a mixture or solution by their weights, volume or number of moles and also be able to calculate the density, or average molecular weight of the mixture/solution by applying foresaid basic laws of chemical engineering	BB	2
Density and Specific Gravity	Be able to understand the terms density and specific gravity and the difference between the two & be able to apply various methods to estimate the both	BB	1
Momentum Transfer: Nature of the fluid, Viscosity	Be able to understand what is a fluid, its nature, definition of newton's law of viscosity and difference between Newtonian and Non Newtonian fluids	BB	1
Velocity Profile, types of fluid flow	Be able to understand the motion of fluid whether laminar or turbulent and also its velocity profile during the motion	BB, PPT	1
Conservation of Mass and Energy	Be able to formulate and derive the continuity and energy equations: Steady flow – Bernoulli's equation	BB	2
Laminar flow of a fluid through circular tube	Be able to derive the Hagen Poissle's Equation for the frictionless laminar flow of a fluid through a circular tube	BB, PPT	1
Frictional losses in turbulent flow	Be able to apply the laws of fluid motion and be able to derive the fanning equation	BB	1
UNIT-III			
Heat Transfer: Conduction – Fourier's law, Mean area of heat transfer	Be able to understand the basic law of conductive heat transfer i.e. Fourier's law of heat conduction, and the area as well as mean area of heat transfer	BB	1
Conductive heat transfer through	Be able to understand how the conduction takes place through a wall built of	BB,PPT	2

a composite wall	various materials with different thermal conductivities and also be able to derive the expression for the heat flux		
Convection - Newton's law of cooling	Be able to understand the concepts of convective heat transfer	BB	1
Individual and overall heat transfer coefficients	Be able to understand the importance and expression for the individual heat transfer coefficients and also be able to derive the expression for overall heat transfer coefficient for the convective heat transfer	BB	2
Correlations for calculation of heat transfer coefficients, LMTD	Be able to derive various correlations for the calculation of individual thereby overall heat transfer coefficient and also be able to calculate the Logarithmic Mean Temperature Difference by drawing the temperature profiles	BB	2
Radiation: Laws of radiation, black body, radiation from sun	Be able to understand the concept radiation mode of heat transfer through the laws of radiation such as Stefan – Boltzmann law, plank's radiation law.	BB	1
Heat Transfer Equipment: Qualitative Description of various heat exchangers – Double Pipe and Shell and Tube	Be able to understand the design and process of heat transfer in Double pipe and Shell & Tube heat exchangers qualitatively and also be able to understand the co-current and counter-current flows of heat in these equipment	BB, PPT	2
UNIT - IV			
Mass Transfer: Diffusion – Diffusion in various phases, Diffusivity, Role of concentration difference in diffusion	Be able to define the terms diffusion and diffusivity, how diffusion occurs in all the phases, and the role of concentration difference in diffusion operation with the help of Fick's law of diffusion	BB	2
Resistance to diffusion, diffusion in liquids	Be able to understand which resists the diffusion,, and also how the diffusion occurs in liquids with the help of equations	BB	1
Relative Volatility, Boiling Point Diagram	Be able to define and derive the expression for the relative volatility of a component in the mixture and also be able to draw the boiling point diagram for the components in a mixture	BB, PPT	1
Distillation – flash distillation, differential distillation, Steam distillation	Be able to understand the definition and driving force of distillation operation, enumerate various types of distillation to separate phases/components and apply the concepts to derive the expression for the extent to which the separation took place	BB, PPT	2

Fractional Distillation, Mc-Cabe Thiele method	Be able to define what is fractional distillation, its merits over the other types and be able to derive an expression for calculating the number of therotical plates in a distillation column by using Mc-Cabe – Thiele method	BB	2
Mass Transfer Equipment	Be able to understand the difference between packed and plate columns, various types of plates and packings (qualitative discussion only)	BB, PPT	2
UNIT- V			
Introduction to Mechanical Operations: Size reduction	Be able to understand the concept of size reduction by the application of laws of comminution	BB	2
Filtration	Be able to understand the definition of filtration and also know about various filters	BB	1
Difference between agitation and mixing	Be able to define the agitation and mixing and also differentiate the both	BB	1
Chemical Kinetics: Rate and order of a reaction, types of chemical reactions	Be able to find the order and rate of reaction, be able to know the types of reactions – elementary & non-elementary, homogeneous & heterogeneous etc.	BB	1
Thermodynamic Review and Determination of rate equation	Be able to understand the type of reaction by its thermodynamic properties and Be able to derive the expressions to determine the rate equation by differential as well as integral methods	BB	2
Effect of temperature	Be able to understand the change of rate of reaction with the change in the temperature with the help of a diagram and Arrhenius relation	BB	1
Catalysis	Various types of catalytic reactions, and catalysts	BB	1
Types of Reactors	Able to understand the design and description of various reactors such as batch, continuous, flow reactors	BB, PPT, Videos	2
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Course Coordinator **HOD**

CH 201 PROBABILITY AND TRANSFORMS (R16)

Lectures : 4 periods / week *Sessional Marks : 40*

Semester End Exam Marks : 60

Semester End Exam : 3 hrs *Credits : 3*

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I	Introduction about the course. Course objective and outcomes	**BB**	**1**
FOURIER SERIES :	Learn about the how to write Fourier series	BB	2
Euler's formula	Understanding the Euler's formula	BB	1
Conditions for a Fourier expansion	Understanding the Fourier expansion conditions	BB	1
Fourier expansion of even and odd functions	Learn about the Fourier series of Even , Odd functions	BB	1
Functions having Points of discontinuity	Understanding to write Fourier series of discontinuous	BB	2
Change of interval	Learn about the Change of interval Problems	BB	2
Half Range Series	Understanding to write half range series	BB	1
Parseval's Formula	Learn Parseval'sformula	BB	1
Practical harmonic analysis	Understanding how to write Fourier series for a given data	BB	2
Problems	Solving the problems related Fourier Series.	Interactive learning	3
UNIT- II			
INTEGRAL TRANSFORMS:			
Integral Transforms	Introduction	BB	1
Fourier Integral Theorem	Understanding the Fourier integral theorem	BB	1
Fourier Sine integral	Learn how to find Fourier Sine integral of a function	BB	1
Fourier Sine integral	Learn how to find Fourier Cosine integral of a function	BB	1
Complex form of the Fourier Integral	Learn about to write Complex form of the Fourier Integral	BB	1
Fourier Transforms	Learn about to evaluate Fourier Transforms	BB	1

Fourier Sine Transforms	Learn about to evaluate Fourier sine transforms of a function	BB	2
Fourier Cosine Transforms	Learn about to evaluate Fourier cosine transforms of a function	BB	2
UNIT-III			
LAPLACE TRANSFORMS:			
Laplace Transforms	Introduction	BB	1
Transforms of elementary functions	Learn about transforms of Elementary functions	BB	1
Properties of Lapalace Transforms	Learn about the transform properties.	BB	1
Transforms of derivatives	Learn about the transforms of derivatives	BB	1
Transforms of integrals	Learn about the transforms of integrals	BB	1
Multification by t^n , Division by t	Learn about the transforms of multification by t^n , Division by t	BB	1
Evaluation of integrals by Laplace Transforms	Learn about to evaluate integrals	BB	2
Laplace transform of periodic function	Learn about periodic function Laplace transform	BB	1
Inverse Laplace Transform	Learn about Inverse Laplace Transforms	BB	1
Convolution Theorem	Learn about Inverse Laplace Transforms	BB	2
Application to Differential Coefficients	Learn how to solve Differential Equations	BB	2
UNIT-IV			
Probability :			
Probability and Problems	Understanding the Probability Definition	BB	1
Addition theorem	Learn about addition theorem	BB	1
Multiplication , Baye'stheorem	Learn about Multiplication theorem, Baye's theorem	BB	3
Binomial Distribution	Learn about Binomial Distribution	BB	2
Poisson Distribution	Learn about Poisson Distribution.	BB	2
Normal Distribution	Understanding the application of Normal Distribution.	BB	2
UNIT- V			
Sampling and Inference	Introduction	BB	1
Sampling	Understanding the Sampling	BB	1
Testing of Hypothesis LargeSample Tests	Understanding the Large sample Tests		3

Testing of Hypothesis Small SampleTests		BB	3

Course Coordinator **HOD**

CH-214 ORGANIC CHEMISTRY (R-16)

Lecture: 4h/week

Sessional Marks: 40

Sem End Exam: 3hrs

Sem End Exam Marks: 60

Credits: 3

Description/Topic	Learning outcomes	Teaching Mode: BB/LCD/OHP/Video	No. Of Classes
Introduction of organic syllabus	To know the importance of organic chemistry in engineering.	BB	1
UNIT-I Free radical, generation and stability of free radicals	To know importance of free radicals	BB	1
Inductive effect – types and examples of inductive effect.	Able to learn +ve and –ve groups and their stability.	BB	1
Meso meric effect with examples and Geometrical isomerism and types of isomerism.	To know importance of meso meric groups and isomers of organic compounds	BB	2
Optical isomerism and examples	To learn the importance of optical isomers.	BB	1
Enantiomers and diastereomers with examples and resimic mixtures.	Able to learn importance of enantiomers, diastereomers	BB	2
E-Z,R-S configurations with examples	Able to learn importance of configurations.	BB	2
UNIT-II Benzene- introduction of Benzene, nomenclature and substitution reactions of Benzene.	To know the importance of benzene and aromatic substitution reactions of Benzene	BB	2
Friedal craft alkylation and acylation reactions and mechanism.	Able to learn mechanisms of Benzene	BB	1
Orientation in di substitution Benzene, Activating and deactivating groups.	Importance of activating and deactivating groups.	BB	1
Huckel's law examples	Able to learn aromatic and non aromatic compounds	BB	1
Aryl halides-preparation and properties of aryl halides.	To know aryl compounds and their preparation and properties.	BB	1
Introduction of Hetro cyclic compounds, and basic character and resonance structure of hetero cyclic compounds	To understand what are hetro cyclic compounds and their characteristics	BB	2

Preparation, properties of Pyrrole, Furan and Thiophene.	To know how prepare the hetero cyclic compounds	BB	2
Introduction of Alkenes – Dehydration and dehydro halogination of alkenes with mechanism.	To understand how to prepare alkenes and their mechanism.	BB	1
Markownikoff's rule and anti-markownikoff's rules with mechanism.	To know mechanism of alkenes and importance	BB	2
Dines- 1,4 addition –Diels-Alder reaction with mechanism	Able to learn formation of acylic compounds to cyclic compounds	BB	1
Cyclo alkenes – Bayers strain theory, conformation analysis of cyclohexane and di substituted cyclo hexane.	To able to understand what are cyclo hexane and their analysis	BB	2
UNIT-III Hydroxy compounds- introduction of hydroxyl compounds and types of hydroxyl compounds.	He knows what are hydroxyl compounds and their importance.	BB	1
Preparation of alcohol from molasses', preparation of phenols and Riemer – tiemann reaction with mechanism	To know how to prepare alcohol and phenols and named reactions	BB	2
Explain acidic character of phenols and alcohols	To know acidic character of phenols and alcohols.	BB	1
Kolbe's and Fries rearrangement reactions and mechanism.	Able to learn mechanisms of reactions.	BB	1
Introduction of aldehydes and ketones	To know what are aldehydes and ketones	BB	1
Cannizzaro and perkins's reaction and mechanism.	Able to learn mechanism of organic reactions.	BB	1
Wolf-kishner reduction, pinacol and pinacolone rearrangement and haloform reactions and mechanisms	To understand reactions and mechanisms of organic compounds	BB	2
Introduction of carboxylic acids and preparation of carboxylic acids	To know what are carboxylic compounds and preparations	BB	1
Gattermann reaction, Dieckamann condensation reactions and mechanism.	To know organic reactions and their mechanisms	BB	1
Carboxylic and their derivatives	To know derivatives of carboxylic acids	BB	1
UNIT-IV Introduction of amines, preparation and properties of	Able to know what are amines and how to prepare and properties	BB	1

amines.			
Basic character of amines, preparation, properties of diazonium salts.	To know what are diazonium salts and reactions	BB	2
Distinguishing tests for amines	To know variations of amines	BB	1
Introduction of carbohydrates and classification of carbohydrates	To know what are carbohydrates, importance and classification,	BB	1
Glucose and fructose preparations	Able to learn about glucose and fructose	BB	1
Inter conversation of glucose to fructose and fructose to glucose	Learn to glucose to fructose and fructose to glucose reactions	BB	1
Amino acids- introduction, classification and importance of amino acids .	To know importance and classification of amino acids.	BB	1
Anti bacterial and anti malarial drugs- sulphanilide, sulphapyridine,chloroquine and isopentaquine preparation and properties	Able to learn about drugs ,preparation and importance	BB	2

Course coordinator **Signature of HOD**

CH 203 MATERIAL & ENERGY BALANCE COMPUTATIONS

Lectures : 3 Hours / week *Sessional Marks : 40*

Semester End Marks : 60

Semester End Exam : 3 hrs *Credits : 3*

Description / Topic	Learning outcomes	Teaching mode: BB/ LCD/ OHP/Video	No. Of classes
UNIT - I ; Stoichiometric and composition relationships: -CO1			
Units and dimensions,	Understanding conversion from one system to other system	BB	1
Conservation of mass,	Understanding law of conservation	BB	1
Stoichiometric relations	Writing the balanced Chemical equation	BB	1
methods of expressing the composition of mixtures and solutions,	Calculating the composition of mixtures and solutions,	BB	2
density and specific gravity.	Estimating the density and specific gravity	BB	1
Behavior of ideal gases:			1
Introduction,	Understanding the nature of the gases	BB	1
Applications of the Ideal-gas law,	Using the ideal gas law for calculating the volume, pressure, temperature etc	PPT	1
gaseous mixtures,	Understanding the Amagats and Avogadro	Video	2
volume changes with changes in composition, Pure –component method Partial – pressure method	Solving the problem by using the change in composition, pure component and partial pressures	BB	2

Gases in Chemical reactions.	Understanding the volumes and pressures in Chemical reactions	BB	1
UNIT- II - CO2			
Vapor Pressures:			
Introduction,	Understanding the vapor pressure	BB	1
Effect of temperature on vapor pressure,	Using the Clausis-Clapeyron equation for estimating the vapour pressure	BB	1
vapour pressure plots,	Developing the vapour pressure plots –Reference substance plots a) Equal –Pressure reference substance plots b) Equal – Temperature reference substance plots	LCD	2
vapour pressure of immiscible liquids,	Understanding the behavior of immiscible liquid and calculating the total pressure for immiscible system. Knowing boiling point depression	BB	1
Vapor pressure of solutions	Applying the Raoults Law for calculating the VP	Video	1
Non-volatile solutes	Understanding the effect of solutes and boiling point elevation	BB	1
Humidity and Saturation:			1
Introduction,	Understanding the concept of humidity or vapour	BB	1
vaporization process,	Designing of vaporization process, like dryer	LCD	2
condensation,	Designing of condenser	BB	2
wet-bulb and dry-bulb thermometry,	Understanding the wet bulb and dry bulb temperatures and their importance.	PPT	1
Psychrometric chart.	Using of psychometric charts for estimating the saturation, molal concentration	LCD	2
UNIT-III - CO3			
Material Balances: Introduction, Material balances without chemical reaction.	Understanding the material balance in a process flow diagram. Calculating the material balance for a unit operations like mixing	BB	2
Calculations involving dissolution and crystallization	Calculating the material balance for a crystallization operation	LCD	2
Material balances with chemical reaction.	understanding the material balance for a unit processes	BB	3
Basic concepts of inert, tie component,	Understanding the tie component and using the tie component for solving the problems.	BB	

Limiting reactant, excess reactant, selectivity, and yield.	Identifying limiting reactant and excess reactant. Calculating the percentage excess reactant and yield.	BB	1
Basic concepts of recycle bypass and purge streams.	Understand the recycle process and purge process with their importance	LCD	1
Material balances for non-reactive systems with recycle stream.	Estimation material balance for non-reactive systems with recycle stream.	LCD	1
Material balances for reactive systems with recycle stream.	Estimation material balance for non-reactive systems with recycle stream and purge processes.	BB	2
UNIT- IV-CO4			
Thermo Physics:			2
Introduction, Energy, energy balances,	Understanding the energy and energy balances.	BB	2
heat capacity of gases,	Estimating the heat capacity of gases	BB	1
heat capacities of solids,	Calculating the heat capacity of solids	BB	1
heat capacity of liquid and solutions,	Evaluating the heat capacity of liquid	BB	1
latent heats,	Understanding the phase changes and latent heat	BB	1
heat of vaporization,	Understanding the phase changes and latent heat of vaporization	LCD	1
evolution of enthalpy,	Estimating the enthalpy of a system.	BB	1
Enthalpy of humid air.	Estimating the enthalpy of a humid air.	LCD	1
Thermo Chemistry: Introduction, Thermo chemistry of solution,	Understanding the energy changes for solutions.	BB	1
Effect of pressure on heat of reaction,	Calculating the heat of reaction and its effect on pressure.	BB	2
Heat of reaction at constant pressure and at constant volume,	Calculating the heat of reaction using the standard data of heat formation and combustion.	BB	1
Effect of temperature on heat of reaction,	Understanding the temperature effect on heat of reaction and calculating the heat of reaction for different temperature inlet streams	BB	1
Temperature of reaction,	Understanding the reaction temperature and estimation.	LCD	1
Theoretical flame temperature,	Understanding the flame temperature and estimation.	BB	2
Actual flame temperature.	Understanding the action temperature and estimation.	BB	1
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Course Coordinator **HOD**

CH 204(R16) – Momentum Transfer

LECTURE PLAN

S.No.	Topic		No. of Periods	Blooms taxonomy	Teaching methodology
		UNIT-I			
1	Introduction to Momentum Transfer	Understand what is momentum and how momentum transferred	1	Understand	Black board
2	Basic concepts – Units and Dimensions	Students are able to develop units and dimensions of all the quantities	2	Understand	Black board
3	Dimensional analysis	Understand the concept of dimensional analysis with problems	3	Understand and apply	Black board
4	Fluid statics and its applications-hydrostatic equilibrium,	Understand what is fluid and derive an expression for hydrostatic equilibrium	1	Understand	Black board
5	Applications of fluid statics-Manometers and decanters.	Applications of fluid statics by using manometers and decanters with problems	2	Apply	Black board
6	Fluid Flow Phenomena: Laminar flow, Shear rate, Shear stress,	Understand the concept of Reynolds experiment and understand the flow types	2	Understand	Black board
7	Rheological properties of fluids, Turbulence, Boundary layers	Understand Newton's law of viscosity and classification of fluids based on Reynolds number . learnt about the concept of boundary layer	2	Understand	Black board & you tube videos
		UNIT-II			
8	Basic Equations of Fluid Flow-Continuity,differential momentum balance and equation of motion.	Understand the basic equations and using the equations derive equations for continuity and equation of motion	3	Understand and apply	Black board
9	Macroscopic momentum balances, Mechanical Energy equations.	Understand the concept of macroscopic momentum balance and derive mechanical energy balance equation	2	Understand	Black board
10	Incompressible Flow in Pipes and	Understand the concept of incompressible	2	Understand	

	Channels: shear stress and skin friction in pipes,	fluids and lear how these fluids behaves in pipes and channels			
11	laminar flow in pipes and channels, turbulent flow in pipes and channels	Derive an expression for the laminar flow of incompressible fluids in pipes and channels	2	Apply	Black board
12	Friction factor, flow through channels of noncircular cross section	Understand the concept of friction factor and derive a expressions for flow through non circular channels with the help of equivalent diameter with hydraulic radius	2	Evaluate	Black board
13	Friction from changes in velocity or direction, flow of liquids in thin layers.	Understand and evaluate how Friction changes by change in velocity or direction, flow of liquids in thin layers.	2	Evaluate	Black board
UNIT – III					
14	Flow of Compressible Fluids: Continuity equation	Understand the concept of Flow of Compressible Fluids: Continuity equation	2	Understand	Black board
15	processes of compressible flow, isentropic flow through nozzles, adiabatic	Derive the processes of compressible flow, Isentropic Frictional flow flow through nozzles, adiabatic	2	Understand	Black board
16	Frictional flow and isothermal frictional flow.	Derive equations for isothermal frictional flow.	2	Understand	Black board
17	Flow Past Immersed Bodies: drag and drag coefficient	Understand the concept of flow past immersed bodies and understand the terms Drag and drag coefficient	2	Understand	Black board
18	Friction in flow through beds of solids	Derive an expression for pressure drop across the bed of solids for a wide range of Reynolds number.	2	Understand	Black board
19	motion of particles through fluids,	Derive an expression for the motion of particles through fluids	2	Understand	Black board
20	Fluidization, mechanism of fluidization, pressure drops in fluidization, applications of fluidization.	Understand the concept of fluidization and derive an expression for pressure drop across a fluidized bed and its applications.	3	Understand and Analyze	Black board & video lecture
UNIT-IV					
21	Transportation of Fluids: Pipes, fittings, valves- gate valves and	Understand the Transportation of Fluids: Pipes, fittings, valves- gate valves and globe	2	Understand	Black board & video lecture

	globe valves, plug cocks and ball valves, check valves.	valves, plug cocks and ball valves, check valves.			
22	Pumps: Types, Selection, Applications, Performance characteristics of centrifugal and Reciprocating pumps.	Studnets are able to understand the working of pumps and different types of pumps and performance and characteristics of centrifugal pump and reciprocating pumps	3	Understand	Black board & video lecture
23	Comparison of devices for moving fluids, constructional features and working principle of jet ejectors, compressors.	Understand the principle and working of jet ejectors and compressors and their devices .	3	Understand	Black board & video lecture
		UNIT-V			
24	Metering of Fluid: Constructional features and working principles of: venturi meter, orifice meter, rota meters	Understand the Constructional features and working principles of: venturi meter, orifice meter, rota meters	1	Analyze	Black board
25	Pitot tube, target meters, vortex-shedding meter, turbine meter, magnetic meters.	Understand the Constructional features and working principles of Pitot tube, target meters, vortex-shedding meter, turbine meter, magnetic meters.	2	Analyze	Black board & video lecture
26	Application of Bernoulli equation: Venturi meter and Orifice meter,	Problems on Venturi meter and Orifice meter,	2	Analyze	Black board & video lecture
27	flow rate calculations from the readings of venture meter, orifice meter and Pitot tube.	flow rate calculations from the readings of venture meter, orifice meter and Pitot tube.	2	Analyze	Black board & video lecture
28	Revision		2		Black board
	Total		**60**		

Course Coordinator **Head of the Department**

CH205-(R16) Mechanical Operations

Unit.No	Topic of the syllabus to be covered	Learning outcomes	Teaching mode BB/ OHP /LCD	Hours required		Total no of hours (cumulative)	Expected date of completion (for each unit)
				Lectures	Tutorial		
1.	Characterization of solid particles: shape and size,	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB**	2		2	
	mixed particle size analysis, specific surface of mixtures,	Students will be able to understand the role and relevance of Chemical EngineeringThermodynamics	**BB**	2		2	
	average particle size, number of particles in mixture,	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB**	2		2	
	screen analysis and standard screen series,	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB/ LCD**	1		1	
	size measurements with fine paticles.	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB**	1		1	
	Properties of masses of particulate, storage and conveying of solids	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB/ LCD**	1		1	
2.	Characteristics of comminuted products, energy and power requirements in comminution,	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB**	1		1	
	Crushing laws and work index.	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB/ LCD**	1	1	2	
	Equipment for size reduction;	Students will be able to understand the	**BB/ LCD**	1	1	2	

		role and relevance of Chemical Engineering Thermodynamics					
	crushers, grinders, ultra fine grinders	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB/ LCD**	1		1	
	Cutting machines.	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB/ LCD**	1	1	2	
	Open circuit and closed circuit operation	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB/ LCD**	1		1	
	energy consumption, size enlargement.	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB**	1		1	
3.	stationary, grizzlying, gyratory,	Students will be able to Understand and analyze processes such as isothermal	**BB/ LCD**	1		1	
	vibrating, revolving screens.	Students will be able to Understand and analyze processes such as isothermal	**BB/ LCD**	1		1	
	Comparison of ideal and actual screens, material balances over screen	Students will be able to Understand and analyze processes such as isothermal	**BB**	1		1	
	Capacity and effectiveness of Screens	Students will be able to Understand and analyze processes such as isothermal	**BB**	1		1	
	Magnetic separators	Students will be able to Understand and analyze processes such as isothermal	**BB/ LCD**	1		1	
	Electro- static separators and froth flotation	Students will be able to Understand and analyze processes such as isothermal	**BB/ LCD**	1		1	
4.	cake filters, centrifugal filters,	Students will be able to explain the property relation of homogeneous phases	**BB/ LCD**	1	1	2	
	filter media, filter aids. Principles of Cake filtration	Students will be able to explain the property relation of homogeneous phases	**BB/ LCD**	1	1	2	
	Pressure drop calculations, constant rate filtration	Students will be able to explain the property relation of homogeneous phases	**BB**	1	1	2	

	constant pressure filtration. Clarifying filters	Students will be able to explain the property relation of homogeneous phases	**BB**	1		1	
	liquid clarification, gas cleaning	Students will be able to explain the property relation of homogeneous phases	**BB/ LCD**	1	1	2	
	principle of clarification	Students will be able to explain the property relation of homogeneous phases	**BB**	1	1	2	
5.	Gravity classifiers, sorting classifier; sink and float methods	Students will be able to understand and Analyze steam power cycles; refrigeration cycles	**BB/ LCD**	1	1	2	
	differential settling methods, clarifiers and thickeners	Students will be able to understand and Analyze steam power cycles; refrigeration cycles	**BB**	1	1	2	
	Centrifugal sedimentation processes; cyclones, hydroclones	Students will be able to understand and Analyze steam power cycles; refrigeration cycles	**BB/ LCD**	1	1	2	
	centrifugal decanters, jigging and tabling	Students will be able to understand and Analyze steam power cycles; refrigeration cycles	**BB/ LCD**	1		1	
	Purpose of agitation, agitation vessels	Students will be able to understand and Analyze steam power cycles; refrigeration cycles	**BB/ LCD**	1		1	
	power consumption in agitated vessels. Blending and mixing.	Students will be able to understand and Analyze steam power cycles; refrigeration cycles	**BB/ LCD**	1		1	

Course Coordinator **Head of the Department**

CH 206 MATERIAL TECHNOLOGY

Lectures: 4 periods / week *Sessional Marks: 40*
Semester End Exam Marks: 60 *Semester End Exam: 3 hrs.*
Credits: 3

LESSON PLAN

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I	Introduction about the course	**BB**	1
Phase Diagrams : The phase rule	Able to know importance of knowing Phase diagram, able to know independent parameters using phase rule	**BB**	2
single component systems and binary phase diagrams	Able to observe the single and binary component behavior	**OHP, BB**	2
micro structural changes during cooling	Able to know how the micro structure is changing while phase change	**BB**	2
lever rule, summary of phase diagram rules	Able to know the behavior of various components during phase change	**BB**	1
Forming Process-General Aspects	Able to know various process of manufacture of various materials (plastics & alloys etc.)	**BB**	2
Rolling, Forging, Extrusion processes,	Able to know the process behind the materials manufacture	**BB**	2
wire drawing, Cold pressing and Deep drawing, tube drawing, tube making	Able to know the process behind the materials manufacture	**BB**	3
Unit-II			
Strengthening of metals and alloys	Able to know the importance of metal strengthen processes	**BB**	2
Strengthening Grain refinement, strain hardening, solid solution strengthening, precipitation or age hardening	Real time metal Strengthening processes	**BB**	3
dispersion hardening, Particulate Strengthening, Phase	Real time metal Strengthening processes	**BB**	3

Description / Topic	Learning outcomes	Teaching mode: BB/ LCD/ OHP/Video	No. Of classes
transformation Harding, Strain ageing.			
Unit-III			
Deformation of Metals	Able to know/identify how/why metal will deforms	**BB**	2
Deformation, Slip, Critical resolved shear stress, twinning, difference between slip and twinning	Able to know about Various deformations	**BB**	3
Mechanism of creep, methods to reduce Creep in materials	Able to know about creep deformation and its reduction method	**BB**	2
Ductile fracture, Brittle fracture, methods of protection against fracture, Fatigue-Mechanism and preventive methods	Able to know how fracture will form and its preventive methods	**BB**	2
Unit-IV			
Powder Metallurgy, : Manufacture of metal powders, procedure of fabrication of powder metallurgy product	Able to know about metal powders and their manufacturing processes	**BB**	3
industrial applications of powder metallurgy, advantages and limitations of powder metallurgy	Able to know various applications and limitations of metal powders	**BB**	1
Semiconductors, Characteristic of semiconductors, Examples of semiconducting materials	Able to know importance of semiconductor	**BB**	1
Atomic structure, intrinsic and extrinsic semiconductors, doping, p-type and n-type semiconductors	Able to know the structure of semiconductor material and various types of semi-conductors	**BB**	2
Applications of semiconductor materials, difference between semiconductor, conductor and insulator.	Able to identify advantages of semiconductor over other materials	**BB**	2
Unit-V			

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
Corrosion: General aspects, Factors influenced in corrosion	Able to know how corrosion will form	**BB**	2
General types of corrosion, Various types of corrosion, Corrosion in marine concrete	Able to know about various corrosions and their problems	**BB**	2
Control and prevention of corrosion, Corrosion monitoring and measurement, oxidation resistant materials	Able to know how to control the corrosion problems	**BB**	3
Ferrous Metals and alloys	Able to know various iron metals & alloys and their application in the real life	**OHP, LCD**	2
Nonferrous metals and alloys	Able to know various Non-ferrous metals & alloys and their application in the real life	**OHP, LCD**	2
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Course Coordinator **Head of the Department**

CH 207 PARTIAL DIFFERENTIAL EQUATIONS AND NUMERICAL METHODS (R16)

Lectures : 4 periods / week *Sessional Marks : 40*

Semester End Exam Marks : 60

Semester End Exam : 3 hrs *Credits : 3*

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I Introduction , ,	Introduction about the course. Course objective and outcomes.	**BB**	**1**
Formation of Partial Differential Equations	To form partial differential equations	BB	1
Formation of Partial Differential Equations	To form partial differential equations	**BB**	1
Solutions of Partial Differential Equations	To solve partial differential equations.	BB	1
Solutions of Partial Differential Equations	To solve partial differential equations.	BB	1
Equations solvable by direct integration	To solve partial differential equations.	**BB**	1
Linear equations of the first order	To solve partial differential equations.	**BB**	2
Non-Linear equations of the first order using Charpit's Method	To solve partial differential equations.	BB	2
Homogeneous Linear Equations with Constant Coefficients, Rules for finding the Complementary Function, Rules for finding the Particular Integral, Non-Homogeneous Linear Equations.	To solve partial differential equations.	**BB**	2
UNIT II			
Applications of Partial Differential Equations: Introduction	To apply partial differential equations	BB	1

Method of separation of variables	To apply partial differential equations	BB	1
One dimensional wave equation		BB	3
One dimensional heat equation- steady and unsteady states	To apply partial differential equations	**BB**	3
Two dimensional heat flow equation- Steady state heat flow –Laplace's equation in Cartesian coordinates.	To apply partial differential equations	**BB**	4
UNIT III **Numerical Methods**			
Solution of Algebraic and Transcendental Equations: Introduction	To solve system of equations numerically.	BB	1
Newton-Raphson Method	To solve system of equations numerically.	**BB**	3
Solution of Linear Simultaneous Equations: Gauss Seidel Iterative Method.	To solve system of equations numerically.	**BB**	2
Finite Differences & Interpolation: Introduction	To familiarize numerical methods	**BB**	1
Finite difference operators, Symbolic relations	To familiarize numerical methods	**BB**	2
Differences of a polynomial	To familiarize numerical methods		1
Newton's forward and backward interpolation formulae	To familiarize numerical methods	**BB**	2
UNIT IV			
Interpolation with Unequal intervals: Lagrange's Interpolation,	To familiarize numerical methods	BB	2
inverse interpolation.	To familiarize numerical methods	**BB**	2

Numerical Differentiation: Finding First and Second order Differentials using Newton's formulae.	To familiarize numerical methods	BB	4
Numerical Integration: Trapezoidal rule, Simpson's one-third rule.	To familiarize numerical methods	BB	4
UNIT V			
Numerical Solutions of Ordinary Differential Equations (first order): Picard's Method ,	Find numerical solution of ordinary differential equations.	BB	2
Euler's Method	Find numerical solution of ordinary differential equations.	BB	2
Runge-Kutta Method of fourth order	Find numerical solution of ordinary differential equations.	**BB**	2
Simultaneous equations (R K method).	Find numerical solution of ordinary differential equations.	**BB**	1
Numerical Solutions of Partial Differential Equations: Classification of Partial Differential Equation of second order	Find numerical solution of partial differential equations	**BB**	1
Solutions of Laplace's and Poisson's Equations by iteration methods.	Find numerical solution of partial differential equations	BB	4
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Course Coordinator **HOD**

CH 209 CHEMICAL ENGINEERING THERMODYNAMICS – I (R16)

Description / Topic	Learning outcomes	Teaching mode: BB/ LCD/ OHP/Video	No. Of classes
UNIT-I			
Introduction to the Course	Introduction to Engineering Thermodynamics-Objectives and outcomes	**BB**	1
Description various properties and quantities	Understand the classification of thermodynamic properties, closed and open systems	BB	1
First Law of Thermodynamics	Understand the definition of first law and its application	BB	1
Energy balance for the closed system	Understand the concepts of internal energy, heat and work and be able to calculate the heat and work transactions for the close system	BB	1
Problems on first law balance equation	Be able to calculate heat and work for the closed systems	BB	1
State and State functions	Be able to differentiate state from path functions and also be able to determine the number of intensive state variables to fixed to define the state of the system by using Gibb's phase rule	BB	1
Reversible Process	Understand the difference between reversible and irreversible processes as well as chemical reactions with example	BB, PPT	1
Constant Volume Process and Constant Pressure Process	Be able to derive the relations of U, H, Q and W for constant volume as well as constant pressure processes	BB	1
Problems	Be able to calculate the change in internal energy and enthalpy, heat and work transactions for a closed system for constant volume and pressure processes	BB	2
Mass and Energy Balances for open system	Be able to derive mass and energy balance equations for the control volume system in steady or unsteady flow	BB	1
Problems	Be able to calculate heat required or work done in case of open system	BB	2
UNIT- II			
PVT Behavior of Pure substances: PT and PV Diagrams	Be able to understand the behavior of any pure substance with change in temperature and pressure, also be to understand the critical behavior	BB, PPT	2
Ideal Gas	Be able to understand the relation between P,V, and T for an ideal gas	BB	1
Equations of process calculations for an ideal gas in a mechanically reversible closed system	Be able to derive the basic equations for calculating the change in internal energy, enthalpy, heat and work for an ideal gas assuming the system to be closed and reversible	BB	1
Isothermal, Adiabatic, Isobaric,	Be able to derive the relations for internal energy, enthalpy, heat and work in a	BB	3

Isochoric and polytrophic processes	constant temperature, constant volume, constant pressure and adiabatic processes and solution of problems on the same		
Virial Equation of state and applications	Be able to find the difference between Ideal gas and real gas equations of state and be able to perform calculations of compressibility factor and molar volume by virial EOS, and also be able to derive the correlations for virial coefficients	BB	3
Cubic Equations of state	Understand the generic equation for the cubic equation of state, and classification of cubic equations of state	BB	2
UNIT-III			
Second law of thermodynamics	Understand the statement of second law and principle of heat engine	BB	1
Heat Engines	Be able to understand working of heat engine, its efficiency, carnot theorem and be able to prove carnot's theorem	BB	2
Ideal gas temperature scales	Be able to derive the relation for efficiency of carnot engine and also be able to understand relation between heats of reservoirs and the temperatures	BB	1
Problems	Be able to calculate the efficiency of carnot as well as heat engines and also the heat absorbed and rejected	BB	1
Entropy change of ideal gas	Be able derive the expression entropy change	BB	1
Mathematical statement of second law	Understand the concept mathematical statement of second law, and be able to prove the same	BB	1
Calculation of ideal and lost work	Be able to calculate the maximum work done and minimum workdone by the thermodynamic process or system	BB	1
Third law of thermodynamics	Be able to define and understand the third law of thermodynamics	BB	1
UNIT - IV			
Applications of thermodynamics to flow processes: Duct flow of compressible fluids	Understand the principles of conservation of mass and energy in case of various flow processes such as duct, nozzles etc.	BB	2
Entropy and Energy for flow systems	Be able to apply the thermodynamic relations and obtain the change in entropy and enthalpy for any flow process	BB	2
Turbines, compressors and pumps	Be able to understand the work done, required and change in the energy, for various thermodynamic processes in turbines, compressor as well as pumps	BB	2
Problems	Be able to find the efficiencies of turbines, compressors for various processes	BB	2
Refrigeration: Carnot refrigerator,	Understand the concept of refrigeration, process with maximum efficiency is identified which is called ideal/carnot refrigerator and also will identify the factors those must be considered while selecting a refrigerant	BB	2
Vapor-compression cycle	Be able to understand the principle of refrigeration process by vapor compression	BB, PPT	1

	cycle		
Absorption refrigeration	Be able to understand the principle of refrigeration process by absorption cycle	BB, PPT	1
UNIT- V			
Heat Effects: Sensible heat effects	Be able to understand the concept of sensible heat and latent heat, be able derive the relations for sensible heat integral	BB	2
Temperature dependency of heat capacity	Be able to understand the heat capacity change with the temperature there by be able to calculate the standard enthalpy change for any thermodynamic process	BB	2
Problems	Be able to calculate the standard enthalpy change and the maximum temperature	BB	2
Heat effects accompanying the phase changes	Be able to understand the concept latent heat	BB	1
Standard heat of reaction, combustion and formation	Be able to define three heats at standard conditions and will able to calculate the heats of reaction by derivinig the relation between heats of formation and combustion of reactants and products	BB	2
Effect of temperature on heat of reaction	Be able to derive the relation between temperature and heat of reaction	BB	1
Heat effects of industrial reactions	Be able to calculate the amount of heat required, mean heat capacity and maximum temperature to which it can reach	BB	2
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Course Coordinator

Head of the Department

CH210 INORGANIC CHEMICAL TECHNOLOGY (R16)

Lectures : 4 periods / week

Semester End Exam : 3 hrs

Sessional Marks : 40
Semester End Exam Marks : 60
Credits : 4

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I	Introduction about the course. Course objective and outcomes	**BB**	1
Introduction: Objectives,. General Fundamentals	Learn about the objectives and general fundamentals	BB	3
unit processes and unit operations	Know about the unit operations and unit processes	PPT	1
Water: Water conditioning and waste water treatment.	Learn about the treatment of drinking and waste water	PPT& BB	3
Alkali Industries: Soda ash.	Understand the production of soda ash by Solvay and Dual process	BB &PPT	3
caustic soda and chlorine.	Understand the manufacture of Caustic soda by Electrolytic process	BB & PPT	2
UNIT- II			
Ceramic industries: Raw materials	Introduction to Ceramics industry and raw materials	PPT & BB	2
manufacturing processes	Understanding the various manufacturing processes for ceramics	BB &PPT	3
Refractories.	Understanding the methods to produce Refractories	BB	1
Cement: manufacture	Know about the raw materials and production of	PPT&BB	3

	Cements		
special cements	Learn about special cements	BB	2
Glass: Raw materials	Know about Glass and their raw materials	BB	2
manufacture	Understanding the methods to produce Glasses	BB	2
special glasses	Learn about Special Glasses	BB	1
UNIT-III			
Nitrogen industries: Synthetic ammonia	Introduction to Nitrogenous industries--Ammonia	PPT&BB	2
Urea	Understanding the manufacture of Urea from Ammonia	BB& PPT	1
Nitric acid.	Understanding the manufacture of Nitric acid from NH_3	BB	2
Other nitrogenous fertilizers	Learn about Ammonium nitrate	BB	1
Phosphate Industries: Phosphorous	Know about Elemental Phosphorous	PPT	1
Phosphoric Acid	Understanding the production of Phosphoric Acid	BB	3
Calcium phosphate and super phosphate	Understanding the production of Calcium phosphate and super phosphate	BB	2
Potassium Industries: Potassium chloride and potassium sulphate.	Know about Potassium Industries	BB	2
UNIT- IV			
Sulfur and sulfuric acid: manufacture of sulfur	Understanding the production of Elemental Sulfur	BB	2
manufacture of sulfuric acid.	Understanding the production of SulfuricAcid	BB	2
Hydrochloric acid: Manufacture of Hydrochloric acid	Know about the production of HCl	BB	2
Aluminum Industries: Aluminum sulfate and alum	Understanding the production of Alums	BB	1
UNIT- V			
Industrial gases: Hydrogen	Understanding the production of Hydrogen gas	BB&PPT	2
Carbon dioxide	Understanding the production of CO_2 gas	BB	2
Nitrogen and oxygen	Understanding the production of O_2 and N_2 gas	BB	1
Nuclear industries: Uranium and thorium fission,	Know about Nuclear industries	PPT& BB	2

nuclear fuels	Understanding the production of Nuclear energy from nuclear fuels	BB &PPT	3
			60

Course Coordinator **HOD**

CH211 (R16) – Process Instrumentation and Instrumental Methods Of Analysis– LECTURE PLAN

S.No.	Topic	Learning outcomes	Blooms Taxonomy	No. of Periods	Teaching methodology
	UNIT 1: Introduction	Introduction to course objectives and outcomes	Understand	1	BB
1	Qualities of measurement: Elements of instruments, static characteristics,	Understand the concept of qualities of measurement and elements of instruments and derive an expression for static characteristics	Understand	2	BB
2	Dynamic characteristics, dynamic response of first order instruments.	Understand the Dynamic characteristics, dynamic response of first order instruments.	Understand	2	BB
3	Recording instruments, indicating and signaling instruments	Understand different Recording instruments, indicating and signaling instruments	Understand	3	BB & video lecture
4	The control center, instrumentation diagram,	Understand what is the control center and how instrumentation diagram is used in industries .	Understand	2	BB
5	Process analysis.	Understand the steps involved in Process analysis.	Understand	1	BB
	UNIT II :				
6	Expansion thermometers: mercury in glass thermometer, bimetallic, pressure spring, accuracy and response of thermometers.	Students are able to understand different types of thermometers and their working and also known about the terms accuracy and response regarding thermometers	Understand	2	BB & video lecture
7	Thermo-electric temperature measurement: thermo electricity, industrial thermocouples, thermocouple lead wires	Students are able to understand Thermo-electric temperature measurement devices like industrial thermocouples and also about lead wires	Understand	2	BB & video lecture
8	Thermal wells, response of thermo couples, mill voltmeter, null potentiometer.	Understand about thermal wells , response of thermocouples and also understand the equipment's working and principle of milli voltmeter and potentio meter	Understand	3	BB
9	Resistance thermometers: Thermal coefficient	Student's familrize about resistance thermometers	Understand	2	BB

	of resistance, industrial resistance – thermometer bulbs,	and thermal coefficient of resistance and thermometer bulbs.			
10	resistance thermometer circuits - wheat stone bridge, calendar Griffiths bridge,	Understand about resistance thermometers circuits like wheat stone bridge and calendar Griffiths bridge	Understand	2	BB
11	Radiation temperature measurement: laws of radiation, radiation receiving elements,	Able to know about Radiation temperature measurement: different laws of radiation and radiation receiving elements	Understand	2	BB
12	radiation pyrometers, photoelectric pyrometer and optical pyrometers	Understand about radiation receiving instruments like pyrometers, photo electric pyrometers and optical pyro meters.	Understand	3	BB & video lecture
	UNIT III :				
13	Liquid column manometers, measuring elements for gauge pressure and vacuum,	Understand about Liquid column manometers, measuring elements for gauge pressure and vacuum	Understand	2	BB & video lecture
14	indicating elements for pressure gauges,	Able to know the indicating elements for pressure	Understand	1	BB
15	measurement of absolute pressure,	Able to know the indicating elements for pressure	Understand	1	BB & video lecture
16	measuring pressure in corrosive liquids	Able to know the indicating elements for pressure in corrosive liquids	Understand	1	BB
17	Measurement of head and level: Head, density and specific gravity, direct measurement of liquid level,	Understand about the head and level and also know about the measurement of density, specific gravity and liquid level.	Understand	2	BB & video lecture
18	pressure measurement in open vessels, level measurements in pressure vessels, measurement of interface level	Literate the students about pressure measurement in open vessels, level measurements in pressure vessels, measurement of interface level	Understand	2	BB & video lecture
19	density measurement, Flow metering: head flow meters, area meters, open channel meters,	Learnt about density measurement, Flow metering: head flow meters, area meters, open channel meters,	Understand	2	BB
20	Velocity meters, flow of dry materials and viscosity measurement.	Recall the instruments to measure velocity meters, flow of dry materials and viscosity	Understand	3	BB

		measurement.			
	UNIT IV :				
21	Beer-Lambert's Law Flame photometry – Principle and Instrumentation (Block diagram – only) disadvantages.	Briefing about the instrumental method s of analysis and also understand Beer Lambert's law principle	Understand	2	BB
22	Estimation of Sodium by Flame Photometry. Principle of Fluorometry – Applications – Disadvantages.	How can we estimate the sodium by flame photometry and students understand the principle and working of flame photometry	Understand	2	BB
23	Introduction of Infra-Red Spectroscopy – – Instrumentation – Disadvantages – Applications.	How can we estimate the compounds by Infra red spectroscopy and students understand thea advantages and disadvantages	Understand	3	
24	Introduction of Atomic absorption Spectrophotometer: Principles – Instrumentation – Block diagram – Disadvantages – Applications – Estimation of Nickel by AAS	Able to understand ASS –principle ,instrumentation diagram, advantages ,disadvantages and applications and estimation of Nickel By AAS	Understand	2	BB
	UNIT V :				
25	Chromatographic Methods: Ion Exchange Chromatography – Recycling chromatography	Understand what is chromatography and explained different types of chromatographic techniques	Understand	2	BB & video lecture
26	Ion Pair Chromatography – Classification– Application – Retention – Solubility	In detailed about ion pair chromatography , applications and solubility	Understand	2	
27	Thin Layer Chromatography – Paper Chromatography.	Understand the concept of thin layer chromatography and paper chromatography	Understand	2	BB & video lecture
28	High Pressure Liquid chromatography(HPLC) – – Advantages of HPLC – Effect of temperature in HPLC – Applications of HPLC.	Understand the components in HPLC and their functions like Solvent Delivery System – Pumps – Reciprocating pumps – Syringe type pumps – Constant Pressure Pumps – Sample Injection System – Column	Understand	2	BB & video

		Packing – Characterization of Detectors – Performance and also study the applications and effects regarding temperature .			lecture
29	Thermo Gravimetric Analysis and Differential Thermal Analysis –Principle – Instrumentation – Applications	Able to understand the Thermo Gravimetric Analysis and Differential Thermal Analysis – Principle – Instrumentation – Applications	Understand	2	
30	Revision			3	
31					
			TOTAL	**63**	

Course Coordinator **Head of the Department**

CH 212 PROFESSIONAL ETHICS & HUMAN VALUES

Lectures: 4 periods / week *Sessional Marks: 40*
Semester End Exam Marks: 60 *Semester End Exam: 3 hrs.*
Credits: 3

LESSON PLAN
CH 212PROFESSIONAL ETHICS & HUMAN VALUES

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I	Introduction about the course	**BB**	1
Human Values: Morals, Values and Ethics, Integrity,	Able to understand the importance of human values	**LCD/Video**	2
Work Ethics, Service Learning, Civic Virtue,	Able to understand the importance of human values	**BB**	2
Respect for Others, Living Peacefully,	Able to understand the importance of human values	**BB**	2
caring, Sharing	Able to understand the importance of human values	**BB**	2
Honesty, Courage, Valuing Time, Co-operation, Commitment, Empathy, Self-Confidence, aracter, Spirituality	able to understand the importance of human values	**LCD/Video**	2
Unit-II			
Engineering Ethics: Senses of Engineering Ethics,	Able to understand the issues of engineering ethics	**BB**	2
Variety of moral issues, Types of inquiry,	Able to understand the issues of engineering ethics	**BB**	2
Moral dilemmas, Moral Autonomy,	Able to understand the issues of engineering ethics	**BB**	2
Kohlberg's theory, Gilligan's theory,	Able to understand the issues of engineering	**BB**	

	ethics		2
Consensus and Controversy.	Able to understand the issues of engineering ethics	**BB**	2
Professional and Professionalism	ble to understand the importance of professional ethics, customs and religion in daily life	**BB**	2
Professional Ideals and Virtues,	Able to understand the importance of professional ethics, customs and religion in daily life	**BB**	2
Theories about right action,	Able to understand the importance of professional ethics, customs and religion in daily life	**BB**	2
Self-interest, Customs and Religion and Uses of Ethical Theories.	Able to understand the importance of professional ethics, customs and religion in daily life	**BB**	2
Unit-III			
Engineering as Experimentation, Engineers as Responsible Experimenters, Codes of Ethics, A Balanced Outlook on Law.	Able to understand the responsibility of engineers	**BB**	2
Safety and Risk, Assessment of Safety and Risk, Risk Benefit Analysis and reducing risk.	ble to analyse the risk and safety of event in daily life	**BB**	3
Unit-IV			
analyses of risk	ble to analyse the risk and safety of event in daily life	**BB**	2
Collegiality, Respect for Authority,	Able to understand the responsibilities / ethics at work place	**LCD**	2
Collective Bargaining,	ble to understand the responsibilities / ethics at work place	**BB**	2
Confidentiality, Conflicts of Interest,	ble to understand the responsibilities / ethics at	**BB**	1

Occupational Crime.	work place		
Professional Rights, Employee Rights, Intellectual Property Rights (IPR), Discrimination.	Able to understand the human rights	**BB**	2
Unit-V			
Multinational Corporations, Environmental Ethics, Computer Ethics, Weapons Development,	Able to understand the professional ethics	**BB**	2
Engineers as Managers, Consulting Engineers, Engineers as Expert Witnesses and Advisors.	Able to understand the responsibilities / ethics of engineers at different levels	**BB**	2
Moral Leadership, Sample Code of Ethics like Indian Institute of Chemical Engineers (IIChE), ASME, ASCE, IEEE,	Able to understand the ethics of professional societies	**BB**	2
Institution of Engineers (India), Indian Institute of Materials Management,	Able to understand the ethics of professional societies	**BB**	2
Institution of electronics and telecommunication engineers, India	Able to understand the ethics of professional societies	**BB**	2
			55

Course Coordinator **Head of the Department**

CH 253 PROFESSIONAL ENGLISH COMMUNICATION SKILLS LABORATORY – (R16)

Lectures : 3 periods / week *Internal marks : 40 marks*
External marks : 60

Semester End Exam : 3 hrs *Credits:2*

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I			
Introduction about the course. Course objective and outcomes **Presentation Skills**	The students will develop effective communication and presentation skills	Interactive Learning sessions	
Key presentations- inspired by Steve Jobs-you tube	Understand Personality & finishing skillsthrough training videos. How to make Effective Presentations, Methodology, Structure, using Technology and Conclusion.	PPT	3
Skills training videos	Learn How to make Effective Presentations, Methodology, Structure, using Technology and Conclusion	PPT	
Activity	Able to give PPT- prepared and extempore	PPT	3
UNIT- II			
Speech Writing	Develop the ability to compeer in professional occasions ,learn corporate etiquette - organizing and managing professional events.	Interactive Learning sessions	
Welcoming guests on to the stage	Understand specific language used for these purposes along with non verbal communication	Interactive sessions	3
proposing vote of thanks	Understanding the significance of vote of thanks.	Interactive sessions	3
Activity –	**how to invite and thank people with professional etiquette** .	Interactive sessions	3
	Developing an awareness of verbal and non verbal communication in these social contexts .		
UNIT-III			

Reading Skills	understand how reading enhances their communicative competency.		
News paper reading- **Activity--**.	Understanding different types of reading- Reading aloud-practice with proper intonation and punctuation .	Interactive sessions	3
Activity-Reading Editorials	comprehending news from editorials , sharing news , analyzing,	Interactive sessions	3
Activity-Reading and interpretation-	Understanding, interpreting and finally identifying the contextually different meanings	Interactive sessions	3
	analyzing news paper editorials with hard words. Reporting the news with one another without the help of the news paper. Besides this, motivated students practice to read News Paper every day without fail	Interactive sessions	
UNIT-IV			
Writing Skills	Able to conduct operational correspondence and prepare reports which produce effective results.	Practice sessions	
Report writing – types of different formats, techniques of report writing -feasibility report	Learn to draft different reports based on their need .	Practice sessions	
Project Report	Enhances their knowledge to prepare and submit effective project reports which assists them in their technical subjects .	Practice sessions	3
Activity –	presenting different models –and their usage Analyzes the significance to abstract writing , and all the important elements in report	Practice sessions	
UNIT- V Career Skills	Develop in them communication and social graces necessary for functioning. Develops in them employable ready skills, win in the job interviews, Build confidence to handle professional tasks.		
Career Skills	Develop as an multifaceted personalities with a mature outlook to function effectively in different professional situations .	Interactive sessions	3
Resume & Cover letter	Basics of Resume and Cover letter , types of resumes, their	Interactive sessions	

	usage		
Activity –techniques of drafting a resume	Enhances skill in techniques of drafting a Resume	PPT	3
Interview –types , purpose	Learns about Interview –types, and their purpose.	Interactive sessions	
Activity --Mock interview	Mock interview- acquire experience as a candidate at the miniature level.	PPT	
Activity-Faq's in Interview	Questions encountered by candidates frequently from technical as well as personal grounds	Interactive sessions	3
Introducing One self-Strengths ,Weakness	Learning to talk about themselves, about others , their interests , aims , how to transform their weaknesses into strengths etc .	Interactive sessions	
			(12X3)36

Course Coordinator **HOD**

CH 301 MASS TRANSFER OPERATIONS – I (R16)

Lectures : 4 periods / week *Sessional Marks : 40*

Semester End Exam Marks : 60

Semester End Exam : 3 hrs *Credits : 3*

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I	Introduction about the course. Course objective and outcomes	**BB**	**1**
Molecular diffusion: Steady state diffusion into fluids at rest and in laminar flow.	Learn about the how the molecular diffusion takes place.	BB	2
Continuity equation	Understanding the continuity equation and its importance	PPT	1
Fick's law	Understanding the Ficks law and its applications.	BB	1
Diffusion coefficient	Importance of diffusion coefficient, units	BB	1
Diffusion in binary gas mixtures–one component stagnant	Developing the flux equation for the stagnant condition and estimating the flux.	PPT	3
Equimolar counter diffusion	Developing the flux equation for the Equi-molar counter diffusion and estimating the flux.	PPT	2
Non-equimolar counter diffusion	Understanding the non-equimolar counter diffusion	BB	1
Estimation of diffusivities in liquids and gases	Estimating the diffusivities using the physical constants	PPT	1
Diffusion in solids	Understanding the diffusion phenomenon in solids	PPT	2
Problems	Solving the problems related to diffusivity.	Interactive learning	3
UNIT- II			
Mass transfer coefficient:			
Mass transfer into a single phase: notation for mass transfer coefficients for liquids and gases	Understanding the various mass transfer coefficients. Developing the relations between the various mass transfer coefficients	BB	1
Mass transfer from gas into a flat falling liquid film	Understanding the method to calculate the mass transfer gas	BB	1

	into a flat falling liquid film.		
Sherwood number, peclet number, schmidt number, reynolds number	Importance of various dimensionless groups in the mass transfer.	BB	1
Mass transfer coefficient correlations for laminar and turbulent flow in circular pipes	Understanding the different mass transfer correlations and depending parameters	BB	
Film theory	Understanding the film theory	PPT	1
Penetration theory	Understanding the Penetration theory	PPT	1
Surface renewal theory	Understanding the surface renewal theory	PPT	1
Analogy between mass, heat and momentum transfer.	Considerate the analogies	BB	1
Mass transfer between phases: diffusion on both sides of an interface	Understanding the diffusion from one phase to other phase.	PPT	1
Relationship of overall mass transfer coefficient with either side mass transfer coefficient	Developing the relation between overall mass transfer coefficient and individual coefficients.	PPT	1
Problems	Solving the problems related to Interphase mass transfer and calculating the individual mass transfer coefficients & overall mass transfer coefficient	Interactive, flipped class	3
UNIT-III			
Equipment for gas-liquid operations:			
Gas dispersed: sparged vessels – diameter of gas bubbles, gas hold up, specific interfacial area, mass transfer coefficient	Understanding the various equipment for Gas and liquid operations. Working of sparged vessels and important parameters which affect the mass transfer.	PPT	2
Tray towers – bubble cap trays	Knowing the working principle of tray towers, understanding the importance of different types of tray towers	PPT	2
Liquid dispersed: venturi scrubbers	Understanding the operating principle of venturi scrubbers.	BB	1
Wetted wall tower & Spray tower	Understanding the operating principle of wetted wall tower and spray towers.	PPT	1
Packed tower, types of packing	Knowing the construction and working of packed tower. Discussing the various types of packing available and the significance.	PPT	2
Mass transfer coefficient in packed tower.	Estimating the mass transfer coefficient	BB	1

UNIT-IV			
Humidification:			
Vapor-gas mixtures	Understanding the humidification, vapour pressure	BB	1
Absolute humidity, dry & wet bulb temperature	Understanding the humidity, molal humidity, dry & wet bulb temperatures.	BB	1
Relative saturation, percentage saturation, dew point	Understanding the Relative saturation, percentage saturation & dew point of the system.	BB	1
Enthalpy, psychrometric charts, air-water system	Use of the sychrometric charts and calculating the various parameters for designing of humidifier or driers	PPT	1
Lewis relation	Understanding the Lewis relation and adiabatic saturation temperature.	PPT	1
Adiabatic operation – design of water cooling with air	Understanding the adiabatic operation and design procedure for the water cooling	PPT	1
Non-adiabatic operation – evaporative cooling.	Understanding the Non-adiabatic operation – evaporative cooling.	BB	1
Problems	Design of the cooling tower and problems related to non-adiabatic operations	Thinking & Flipped class.	3
UNIT- V			
Drying: batch drying	Understanding the drying and notations for the drying operations	BB	1
Rate of batch drying	Understanding the rate of drying	BB	1
Time of drying	Estimating the time required for drying and design of cooling tower	PPT & Flipped class	3
Mechanism of batch drying	Understanding the mechanism of batch drying	BB	1
Equipment for batch and continuous drying operations.	Knowing the various available drying equipment and its futures	PPT	2
Crystallization:			
Crystal geometry, nucleation, crystal growth	Understanding the crystal geometry and growth. Principles methods of crystallization.	BB	1
Equipment– vacuum crystallizer & draft tube crystallizer.	Knowing the various available drying equipment and its futures	PPT	2

Yield	Material balance in crystallization and calculating the yield. problems	BB	2
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Course Coordinator **Head of the Department**

CH302 (R16)-Chemical Reaction Engineering-I

Unit.No	Topic of the syllabus to be covered	Learning outcomes	Teaching mode BB/ OHP /LCD	Hours required		Total no of hours (cumulative)	Expected date of completion (for each unit)
				Lectures	Tutorial		
1.	Introduction to Chemical Reaction Engineering; Elementary and Non-elementary Reactions,	Analyze kinetic data and determine the rate expressions (reaction order and specific reaction rate) for a reaction.	**BB**	2	1	3	
	Homogeneous and Heterogeneous Reactions,	Analyze kinetic data and determine the rate expressions (reaction order and specific reaction rate) for a reaction.	**BB**	2	1	3	
	variables affecting the rate of reaction,	Analyze kinetic data and determine the rate expressions (reaction order and specific reaction rate) for a reaction.	**BB**	2	1	3	
	Definition of reaction rate.	Analyze kinetic data and determine the rate expressions (reaction order and specific reaction rate) for a reaction.	**BB/ LCD**	1		1	
	Concentration dependent term of rate equation,	Analyze kinetic data and determine the rate expressions (reaction order and specific reaction rate) for a reaction.	**BB**	1	1	2	
	Temperature dependent term for rate equation	Analyze kinetic data and determine the rate expressions (reaction order	**BB/ LCD**	1	1	2	

		and specific reaction rate) for a reaction.					
	Searching for a mechanism, predictability of reaction rate from theory.	Analyze kinetic data and determine the rate expressions (reaction order and specific reaction rate) for a reaction.	**BB**	1		1	
2.	Constant volume batch reactor	Derive and solve design equations for batch, semi batch and steady state flow reactors	**BB/ LCD**	1	1	2	
	integral and differential Methods Method of Half-Lives,	Derive and solve design equations for batch, semi batch and steady state flow reactors	**BB/ LCD**	1	1	2	
	Method of Initial Rates, Method of Fractional life	Derive and solve design equations for batch, semi batch and steady state flow reactors	**BB/ LCD**	1	1	2	
	Analysis of total pressure data.	Derive and solve design equations for batch, semi batch and steady state flow reactors	**BB/ LCD**	1	1	2	
	variable volume batch reactor	Derive and solve design equations for batch, semi batch and steady state flow reactors	**BB/ LCD**	1	1	2	
	temperature and reaction rate,	Derive and solve design equations for batch, semi batch and steady state flow reactors	**BB/ LCD**	1	1	2	
	search for a rate equation.	Derive and solve design equations for batch, semi batch and steady state flow reactors	**BB/ LCD**	1	1	2	
	Reactions of shifting order, design of batch reactor	Derive and solve design equations for batch, semi batch and steady state flow reactors	**BB/ LCD**	1	1	2	
3.	Design of Isothermal Flow reactors-general discussion,	Solve appropriate rate expressions for series, parallel and reversible reactions.	**BB/ LCD**	1	1	2	

	symbols and relationship between C_A and X_A,	Understand the performance characteristics and the advantages and disadvantages of major reactor types					
	space time and space velocity	Solve appropriate rate expressions for series, parallel and reversible reactions. Understand the performance characteristics and the advantages and disadvantages of major reactor types	**BB**	1	1	2	
	steady state mixed flow reactor	Solve appropriate rate expressions for series, parallel and reversible reactions. Understand the performance characteristics and the advantages and disadvantages of major reactor types	**BB/ LCD**	1	1	2	
	steady state plug flow reactor	Solve appropriate rate expressions for series, parallel and reversible reactions. Understand the performance characteristics and the advantages and disadvantages of major reactor types	**BB/ LCD**	1	1	2	
	holding time and space time for flow systems	Solve appropriate rate expressions for series, parallel and reversible reactions. Understand the performance characteristics and the advantages and disadvantages of major reactor types	**BB**	1		1	
	Size comparison of single reactors,	Solve appropriate rate expressions for series, parallel and reversible reactions. Understand the performance characteristics and the advantages and disadvantages of major reactor types	**BB**	1	1	2	

	multiple reactor systems	Solve appropriate rate expressions for series, parallel and reversible reactions. Understand the performance characteristics and the advantages and disadvantages of major reactor types	**BB**	1	1	2	
	recycle reactor	Solve appropriate rate expressions for series, parallel and reversible reactions. Understand the performance characteristics and the advantages and disadvantages of major reactor types	**BB**	1	1	2	
	autocatalytic reactions	Solve appropriate rate expressions for series, parallel and reversible reactions. Understand the performance characteristics and the advantages and disadvantages of major reactor types	**BB**	1	1	2	
4.	Reactions in parallel	Analyze multiple reactions to determine selectivity and yield	**BB**	1	1	2	
	qualitative discussion about product distribution, quantitative treatment of product distribution and of reactor size.	Analyze multiple reactions to determine selectivity and yield	**BB**	1	1	2	
	Irreversible first order reactions in series, qualitative discussion about product distribution,	Analyze multiple reactions to determine selectivity and yield	**BB**	1	1	2	

	quantitative treatment of batch or plug flow reactor, quantitative treatment of mixed flow reactor	Analyze multiple reactions to determine selectivity and yield	**BB**	1	1	2	
5.	Single reaction-heats of reactions from thermodynamics,	Analyze multiple reactions to determine selectivity and yield	**BB**	1	1	2	
	heat of reaction and temperature,	Analyze multiple reactions to determine selectivity and yield	**BB**	1	1	2	
	equilibrium constants from thermodynamics, equilibrium conversion from thermodynamics	Analyze multiple reactions to determine selectivity and yield	**BB**	1	1	2	
	general graphical design procedure, optimum temperature progression.	Analyze multiple reactions to determine selectivity and yield	**BB**	1	1	2	
	heat effects, adiabatic and non-adiabatic operations	Analyze multiple reactions to determine selectivity and yield	**BB**	1	1	2	
	Exothermic reactions in mixed flow reactors, multiple reactions	Analyze multiple reactions to determine selectivity and yield	**BB**	1	1	2	

Course Coordinator **Head of the Department**

CH 303 CHEMICAL ENGINEERING THERMODYNAMICS – II (R16)

Lectures : 4 periods / week *Sessional Marks : 40*

Semester End Exam Marks : 60

Semester End Exam : 3 hrs *Credits : 4*

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I			
Introduction to the Course	Introduction to Engineering Thermodynamics-Objectives and outcomes	**BB**	1
Thermodynamic Properties of fluids: Property Relations and Maxwell Equations	Be able to derive property relations and maxwell equations and also be able to express changes in enthalpy, entropy, internal energy as functions of P, V, and T	BB	3
Residual Properties	Be able to define and write the expression for the residual enthalpy, Gibbs energy, entropy etc.	BB	2
Two phase systems	Relation of various properties in both the phases	BB	1
Thermodynamics diagrams	Be able to show the relations among various thermodynamic properties by the diagrams such as PH, TS and HS diagrams	BB	1
Production of power from heat: Steam power plant	Understand the basic flow sheet of how the thermal energy can be converted to electricity by the application of thermodynamic processes	BB	1
Rankine cycle	Understand the principle of rankine cycle and be able to calculate the efficiency	BB, PPT	1
Otto cycle	Understand the steps involved in an otto cycle and be to derive the expression for the thermal efficiency of otto engine	BB	1
Diesel cycle, jet engines	Understand the steps involved in an diesel cycle and be to derive the expression for the thermal efficiency of diesel engine and also to be able to learn the principle of jet engine	BB	2
UNIT- II			
Solution Thermodynamics: Fundamental property relation	Be able to write the fundamental property relation for gibbs free energy for an open system	BB	1
Chemical Potential	Be able to derive the expression for the chemical potential and relation	BB	1

	between gibbs energy and chemical potential		
Criterial for phase equilibria	Able to understand that the criteria for phases to be in equilibrium when they have the same chemical potential in all the phases	BB	1
Partial properties	Be able to learn write the expression for the partial property of a component in a mixture. And also be able to write the expressions for various thermodynamic partial properties and be able to derive summability relation and gibbs duhem equation	BB	1
Partial properties for a binary mixture	Be able to derive the relations for calculating partial properties in a binary mixture and be able to solve problems	BB	2
Ideal gas mixture model	Be able to derive expressions for variouos properties by ideal gas mixture model and duhem's theorem	BB	1
Fugacity and fugacity coefficients	Be able to define the fugacity and fucgacity coeffient for a component or a mixture by derving the relations for the same and also be able solve problems to estimate these	BB	2
Generalized coefficients for fugacity coefficients	Be able derive correlations for fugacitties by virial as well as cubic equations of state	BB	1
Ideal solution model and excess properties	Be able to derive relations for various thermodynamic properties through ideal solution model and also be able to define and introduce excess properties	BB	1
UNIT-III			
Solution Thermodynamics-applications: Liquid phase properties of VLE data	Understand the definition of activity coefficient and relation of the same to excess gibbs's energy	BB	1
Gibb's Duhem Equation, problems on activity coefficients and excess gibb's energy	Be able to solve the problems on solution properties and activity coefficients	BB	2
Data reduction	Be able to derive the margule's equations which relate the activity coefficients to mole fractions	BB	1
Thermodynamic consistency, models for excess gibb's energy	Be able to verify the thermodynamic consistency, and be able to derive the vanlaar equations	BB	2
Property changes of mixing	The enthalpy, entropy etc. changes of various solutions can be formulated and be calculated	BB	1

Heat effects of mixing processes	Problems on heat effects of solutions and their compositions	BB	1
Vapor Liquid Equilibrium: Qualitative behavior, phase rule and Duhem's theorem	Be able to understand the concept of equilibrium and its nature, phase rule can be applied for non-reacting systems	BB, PPT	1
Simple models of VLE	Be able to understand various models of VLE cases	BB, PPT	1
VLE by Raoult's law	Be able to understand the Raoults' law application for VLE and the equations developed. Be able to calculate the Bubble and Dew point calculations for the mixtures	BB, PPT	2
Problems on Bubble point and Dew point calculations	Be able to calculate the Bubble P & T, Dew P and T for the given mixture and also the composition at Azeotrope	BB	2
UNIT - IV			
VLE by Modified Raoult's Law: Bubble point and Dew point calculations	Be able to calculate the Bubble P & T, Dew P and T for the given mixture and also the composition at Azeotrope by the application of modified raoult's law	BB	2
VLE from K-value relations	Be able to calculate the Bubble P & T, Dew P and T for the given mixture and also the composition at Azeotrope by the application of K-value relations	BB	2
Flash calculations	Be able to perform flash calculations for the given mixtures	BB	1
Topics in Phase Equilibria: VLE from Cubic Equation of State	Understand the application of VLE to Cubic EOS	BB	1
Equilibrium and Stability	Understand the concept of criterial for any system to be stable in equilibrium state	BB, PPT	1
Liquid/Liquid Equilibrium	Be able to understand the concept of two liquids that not stable may not form a single liquid phase but reach thermodynamic equilibrium shown diagrammatically	BB, PPT	1
Vapor/Liquid/Liquid Equilibrium	Be able to understand the concept of vapor and two liquids that not stable may not form a vapor-liquid phase but reach thermodynamic equilibrium shown diagrammatically	BB, PPT	1
Solid/Liquid Equilibrium	Thermodynamic equilibrium concept of a sloid and a liquid mixture	BB, PPT	1
Solid/Vapor Equilibrium	Thermodynamic equilibrium concept of a sloid and a vapor mixture	BB, PPT	1
UNIT- V			
Chemical Reaction Equilibrium:	Be able to understand the concept of extent of reaction occur by defining the	BB	2

The reaction coordinate	reaction coordinate and also be able to express the mole fractions of all species as functions of reaction coordinate		
Application of Equilibrium criteria	Be able to understand the concept of minimum gibbs energy and zero change gibbs's energy at equilibrium state	BB	1
The standard Gibbs-Energy change and the Equilibrium constant	Be able to derive the relation between standard gibbs energy change and the equilibrium constant and be able to estimate the K value for the reactions	BB	2
Effect of temperature on K	Be able derive an expression for the relation of K to 1/T and be able to solve the problems for K or T	BB	2
Relation of Equilibrium constants to composition	Be able derive the relation between composition and K for various reactions abd be able solve the problems for K and mole fractions	BB	1
Phase Rule and Duhem's Theorem for the reacting systems	Be able to find the expressions to calculate the number of degrees of freedom for the reacting systems	BB	1
			60

Course Coordinator **HOD**

CH 304 ORGANIC CHEMICAL TECHNOLOGY (R16)

Lectures : 4 periods / week

Semester End Exam : 3 hrs

Sessional Marks : 40

Semester End Exam Marks : 60

Credits : 4

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I	Introduction about the course. Course objective and outcomes	**BB**	1
Sugar and starch industries:	Introduction to Sugar and starch industries	PPT	1
manufacture of cane sugar	Understanding the manufacture of sugar from sugarcane	BB	2
production of starch from maize	Understanding the manufacture of starch from maize	BB	1
Fermentation industry-	Know about the Fermentation industry	BB	1
manufacture of alcohol from molasses	Understanding the production of alcohol	BB	2
manufacture of penicillin	Understanding the production of Antibiotics	BB	2
Pulp and paper industry- Methods of pulping	Learn about Pulp and Paper industries	BB	1
production of sulfate and sulfite pulp	Understanding the production of Sulfate and Sulfite pulping	BB	3
Production of paper	Understanding the production of Paper	BB	2
UNIT- II	Introduction about the course. Course objective and outcomes		
Petroleum: Origin, occurrence and reserves, composition, classification,.	Know about the history and composition of Petroleum	BB & PPT	4
characteristics, exploration and production	Learn about the exploration methods	PPT	2
constituents of petroleum	Know about the constituents like paraffins , naphthenes and aromatics	BB	2

petroleum products, testing and analysis of petroleum products,	Know about the Petroleum Products and their analysis	BB	3
desalting, atmospheric and vacuum distillation.	Learn about the pretreatment of crude	BB	3
UNIT-III	Introduction about the course. Course objective and outcomes		
Petroleum Refining: Thermal & Catalytic cracking processes:	Understanding the various Petroleum Refining Processes--cracking	BB& PPT	3
Feed stocks– Catalysts - Process variables –Product Recoveries for Visbreaking- Delayed Coking –	Know about the detailed process of visbreaking and coking	BB	3
Feed stocks– Catalysts - Process variables –Product Recoveries for Fluid Catalyticcracking	Know about the detailed process of FCC	BB	3
Feed stocks– Catalysts - Process variables –Product Recoveries for hydrocracking	Know about the detailed process of Hydro cracking	BB	1
Catalytic reforming and isomerization:			
Catalytic reforming processes (for petroleum and petrochemical feed stocks) –	Know about the detailed process of Reforming	BB	1
Isomerization Processes -Feed stocks-Feed preparation – Yields.	Know about the detailed process of Isomerization	BB	1
Hydro treating& Hydro processing: Feed stocks – Process description and Process variables	Know about the detailed process of Hydrotreating and hydroprocessing	BB	1
Naphtha, Kerosene Hydrotreating / Hydroprocessing	Know about the detailed process of Naphtha and kerosene	BB	1
Diesel,VGO& Resid Hydrotreating / Hydroprocessing	Know about the detailed process of Diesel and VGO and Resid hydrotreating	BB	1
UNIT- IV			
Classifications of rubber	Learn about the origin, history and classification of Rubbers	BB	2
Natural rubber	Learn about the manufacture of Natural rubbers	PPT& BB	2
Monomers of synthetic rubber	Knowing about the monomers of SBR	BB	1
manufacture of SBR	Understand the manufacture of SBR	BB & PPT	1
Synthetic fibre- classification	Introduction of Fibers and to learn the	BB	2

	classification of Fibers.		
manufacture of nylon 6,6	Understand the manufacturing of Nylons	PPT & BB	2
poly ester fiber	Understanding the manufacture of polyester	BB	1
viscose rayon fiber	Understanding the manufacture of Viscose Rayon	BB	1
Oils, soaps and detergents-	Learn about the oils, soaps and detergents	BB	1
definitions, constituents of oils	Know about the constituents of oils	PPT	2
extraction and expression of vegetable oils	Understanding the extraction of Oils	BB	2
Refining and hydrogenation of oils	Knowing the Hydrogenation of oils	PPT& BB	2
Continuous process for the production of fatty acids and soap	Understanding the production of oil soaps and Glycerin	BB	3
Production of detergents	Know about Production of detergents	BB & PPT	2
UNIT- V			
Plastic industry- classification of plastics.	Introduction to Plastic Industry	BB	2
outlines and Manufacture of phenols	Understanding the various processes for Phenols	BB &PPT	2
Manufacture of formaldehyde	Understanding the methods to produce Formaldehyde	BB	1
Vinyl chloride and vinyl acetate	Importance of Vinyl compounds	PPT	2
Manufacture of phenol-formaldehyde resin	Understanding the production of P-F resin	BB	2
Manufacture of polyvinyl resins	Understanding the production of Poly vinyl resins	BB	1
Paints and varnishes-constituents of paints and varnishes	Know the constituents of paints and varnishes	BB	1
manufacturing procedures of Paints	Understanding the production of Paints	PPT	2
Varnishes		BB	1

Course Coordinator **HOD**

CH 305 INDUSTRIAL POLLUTION CONTROL (R16)

Lectures : 4 periods / week *Sessional Marks : 40*

Semester End Exam Marks : 60

Semester End Exam : 3 hrs *Credits : 4*

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I	Introduction about the course. Course objective and outcomes		
Introduction: Man & Environment	Learn about the relationship between Man and environment	BB&PPT	1
Types of Pollution	Know about the different types of pollutions	BB&PPT	2
Pollution control aspects.	Learn about the control aspects of air and water pollution	PPT& BB	2
Industrial Pollution emissions & Indian Standards:	Know about the Industrial Pollution emissions & Indian Standards	BB &PPT	1
Industrial emissions-Liquids	Know about the Industrial emissions-Liquids	BB	1
Industrial emissions-Gases	Know about the Industrial emissions-Gases	BB	1
Environmental Legislation	Learn about the Environmental Legislation	BB	1
Water quality management in India	Understanding the need of Water quality management in India	BB &PPT	1
Air Act -1981.	Understanding the Air- act 1981	BB	2
UNIT-II	Introduction about the course. Course objective and outcomes		
Water Pollution:	Introduction to Water pollution	BB	1
Removal of BOD, Biological oxidation, Biological oxidation units	Know about the BOD and control of BOD	BB	2
Activated sludge process, trickle filter, stabilization ponds,	Know about the control of BOD by Aerobic and	BB	3

aerated lagoons, oxidation ditches and fluidized bed contactors. Anaerobic treatment	Anaerobic treatments		
Removal of Chromium- Reduction-Precipitation, ion exchange, reverse osmosis, lime coagulation and adsorption.	Know about the control of Chromium by ion exchange ,R.O ,Coagulation etc.	BB	2
Removal of Mercury: Removal of mercury from gaseous and liquid streams	Know about the control of Hg from liquid and gaseous effluents	BB	2
Removal of Ammonia, Urea : Physico-chemical processes, biological methods, Algae-bacterial flocculation system.	Know about the control of NH_3 and Urea by different processes	BB	3
Treatment of Phenolic effluents: Steam gas stripping, Adsorption/ion exchange, Solvent extraction and oxidation methods.	Know about the control of Phenolic effluents	BB	3
UNIT-III	Introduction about the course. Course objective and outcomes		
Air Pollution:	Introduction to Air pollution	PPT&BB	1
Removal of Particulate matter— Introduction, separation of particulate matter from effluent gases	To learn about Removal of Particulate matter	BB& PPT	1
preliminary methods of separations- cyclone separators, fabric filters electrostatic precipitators,	To learn about Removal of Particulate matter by cyclones Bag filters, Electrostatic precipitators	BB	3
Wet scrubbers: spray towers, centrifugal scrubbers, packed beds and plate columns venturi scrubbers.	To learn about Removal of Particulate matter by different types of scrubbers	BB&PPT	5
Removal of Sulfur dioxide: Harmful effects of SO2, ,	Know about sources and effects of sulfur di oxide	BB	1
control methods, process changes, desulfurization of fuels	Understanding the removal of SO_2 by design change ,Desulfurization, change of stack height and chemical treatment	BB	1
reduction of SO2 concentration, wet processes & dry processes.	Understanding the removal of SO_2 treatment by wet and dry processes	BB	3
UNIT- IV	Introduction about the course. Course objective and outcomes		
Removal of Oxides of Nitrogen: Control measures	Learn about removal of Nitrogen by chemical treatment using different solutions	BB	2

Removal of Organic vapors from Effluent-Absorption of vapors in suitable liquids and media	Learn about removal of Organic vapors by suitable liquids and media	BB	2
incineration of organic vapors.	Learn about removal of Organic vapors by incineration	BB	2
Solid waste management: sources, classification	Know about the sources and classification of solid wastes	BB	1
public health aspects	Know about the public health aspects of solid wastes	BB	1
disposal methods	Learn about the disposal methods like landfills, incineration and composting	BB &PPT	**3**
potential methods of disposal.	Learn about the potential methods like reuse and recycling of wastes	BB	1
UNIT- V	Introduction about the course. Course objective and outcomes		
Pollution control in selected process Industries:	Understanding the need of pollution control in industries	BB	2
General considerations	Understanding the General considerations	BB	1
pollution control aspects of Fertilizer industries,	Know about the pollution control aspects of Fertilizer industries,	BB	2
Pollution control in Petroleum Refineries and Petrochemical units,	Understanding the Pollution control in Petroleum Refineries and Petrochemical units	BB&PPT	4
Pollution control in Pulp and Paper Industries	Know about Pollution control in Pulp and Paper Industries	PPT& BB	2
			66

Course Coordinator **HOD**

CH 306 (D) ELECTRO CHEMICAL ENGINEERING

Lectures: 4 Periods / week *Sessional Marks: 40* *Semester End Exam Marks: 60*
Semester End Exam: 3 hrs.
Credits: 3

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I	Introduction about the course	**BB**	1
Review of basics of Electro - Chemistry Mechanism of Electrolysis	Able to understand the application of electrochemistry in daily life	**BB**	1
Degree of dissociation, Laws of Electrolysis, ionic mobility's,	Able to understand the factors/equations behind the cell development	**BB**	2
Transference Numbers, Nernst equation,	Able to understand Transference Numbers *in* the cell development	**BB**	2
Galvanic cells, cell design.	Able to understand cell development	**BB**	1
The electrical double layer: Its role in Electro-chemical process	Able to estimate the cell performance and its factors	**BB**	2
Electro-capillary curve,	Able to estimate the capillary curves in design	**BB**	2
Helmota layer, Gucy, Steven's layer, fields at the interface.	Able to understand the double layer concept	**BB**	2
Unit-II			

Measurements and Systems Analysis: Conductivity measurements - Conduct metric analysis - Titrations,	Able to understand the conductivity measurement process and its analysis	**BB**	2
Potential - potentiometric titrations.	Able to understand the potentiometric titrations process and its analysis	**BB**	2
Measurements of pH	Able to understand pH of solution	**BB**	1
polarization, Diffusion controlled Electro-chemical reaction, ,	Able to understand the mass transfer phenomena in electrochemical systems	**BB**	2
The importance of convection and the concept of limiting current	Able to understand the mass transfer phenomena in electrochemical systems and limiting current	**BB**	2
Mass transfer over potential or concentration polarization	Able to understand the mass transfer phenomena in electrochemical systems and polarization concept	**BB**	2
Unit-III			
Primary cells	Able to understand the Concept of primary cells	**BB**	1
Lechlanche dry cell, Alkaline manganese cell, mercury cell	Able to understand the working, applications and limitations of primary batteries	**BB/ VIDEO**	3
Secondary cells	Able to understand the Concept of primary cells	**BB**	2
The lead acid accumulator, and,	Able to understand the working, applications over batteries	**BB/ VIDEO**	2
The Davityan Water –gas cell, The Redox-Fuel cell	Able to understand the working, applications over batteries	**BB/ VIDEO**	2
Hydrogen/Oxygen Cells	Able to understand the working, applications over batteries	**BB/ VIDEO**	1
Ni-Cd	Able to understand the working,	**BB**	1

	applications over batteries		
Ni-Fe, sodium-sulphur,	Able to understand the working, applications over batteries	**BB**	2
Li ion cell	Able to understand the working, applications over batteries	**BB**	1
Unit-IV			
Metals, graphite, lead dioxide, iron oxide, semi conducting type etc.	Able to understand the advantages, properties of different electrodes	**BB/ VIDEO**	2
Electro deposition	Able to understand the various finishing operations	**BB/ VIDEO**	2
Electro refining	Able to understand the various finishing operations	**BB/ VIDEO**	2
Electro forming and Electro polishing, Anodizing.	Able to understand the various finishing operations	**BB/ VIDEO**	3
Unit-V			
Manifestation of corrosion, bases of electrochemical corrosion, amount and intensity of corrosion	Able to understand the corrosion dependent factors	**BB**	2
Uniform attack, Galvanic corrosion, crevice corrosion, Pitting corrosion, inter granular corrosion, Selective leaching and stress corrosion cracking.	Able to understand various corrosions	**BB**	3
Design, coatings and inhibition	Able to understand the prevention and control measures of corrosion	**BB**	1
cathodic protection, stray current corrosion	Able to understand the prevention and control measures of corrosion	**BB**	2
passivity phenomena and development of corrosion resistance alloy, anodic control	Able to understand the prevention and control measures of corrosion	**BB**	2

			60

Course Coordinator **Head of the Department**

CH 307 MASS TRANSFER OPERATIONS-II

Description / topic	Learning outcomes	Teaching mode: BB/ LCD/Video	**No. Of classes**
UNIT- I			
Distillation-1:			
Principles of Vapor-Liquid Equilibrium for binary system,	Understanding the vapour-liquid equilibrium for distillation.	BB	1
Relative volatility, Enthalpy concentration diagrams.	Calculating the relative volatility and understanding the Enthalpy concentration diagram.	BB	1
Flash distillation,	Knowing the different types of distillation and understanding the Flash / equilibrium distillation, developing the design equation	BB	1
Problems on Flash Distillation	Design of the flash distillation	BB	1
differential distillation,	understanding the simple / differential distillation and developing the design equation	LCD	1
Problems on Differential Distillation	Computing the differential distillation designs.	LCD	2
Batch distillation with reflux.	Understanding the batch distillation with reflux.	BB	1
UNIT-II			
Continuous rectification,	Understanding continuous distillation	LCD	1
McCabe-Thiele method,	Developing the operating line equations	LCD	3
Problems	Computing the fractional distillation designs	LCD	3
Reboilers, Tray efficiency,	Understanding the reboilers and Computing the no of stages using tray efficiency.	BB	1
Ponchon- Savarit method.	Understanding the design procedure for continuous distillation by Ponchon- Savarit method.	LCD	1
Azeotropes, azeotropic distillation, extractive distillation	Understanding the types of Azeotropes, and azeotropic & extractive distillation	BB	1
Steam distillation.	Understanding the steam distillation principle and calculating the steam requirement for separation.	LCD	1
UNIT-III -Liquid-Liquid Extraction			

Choice of Solvent,	Understanding the important characteristics of good solvent	BB	1
Ternary equilibrium, tie line,	Understanding the ternary equilibrium	LCD	2
equipment - mixer-settler,	Different types of equipment, working of mixer -settler	BB	1
perforated plate tower,	Knowing the working of perforated plate tower	LCD	1
Rotating disk contactor, pulsed columns.	Knowing the working of Rotating disc & pulsed contactor	LCD	1
Calculations for insoluble liquids - single stage,	Understanding the single stage calculations	BB	2
Problems	Solving the problems for single stage	LCD	2
Multi stage cross current and counter current operations.	Understanding the multi stage cross and counter current contact calculations	BB	3
Problems	Solving the problems for multistage operations	LCD	3
UNIT –IV **Adsorption:**			
Types of adsorption - physical adsorption and chemisorption,	Understanding the types of adsorption. Knowing about physical and chemical adsoption.	BB	1
nature of adsorbents, types of industrial adsorbents,	Knowing the important characteristics of good adsorbent	BB	1
Types of adsorption isotherms for vapors, Freundlich isotherm for dilute solutions,	Understanding types of adsorption isotherms and Freundlich isotherm	LCD	1
Calculations for single stage	Developing the operating line equation for the single stage adsorption	BB	1
Problems	Solving the problems related to single stage adsorption	LCD	2
Calculations for s multi stage cross current.	Developing the operating line equation for the multi stage cross current adsorption	BB	1
Problems	Solving the problems related to multi stage cross current adsorption	LCD	2
Calculations for multi stage counter current adsorption operation.	Developing the operating line equation for the multi stage counter current adsorption	BB	1
Problems	Solving the problems related to multi stage counter current adsorption	LCD	2
Ion Exchange: Principles of ion exchange,	Understanding the principle and different types of ion exchange	LCD	1

Mechanism for rate of ion exchange.	Understanding the mechanism of rate of ion exchange	LCD	1
UNIT- V			
Leaching:			1
Fields of applications, Preparation of solids, percolation tanks,	Understanding the principles of leaching, methods to prepare the solids, understanding the types of systems.	BB	1
Shanks system,	Understanding the working of shanks system	BB	1
filter press leaching, agitated vessels,	Knowing the filter press and agitated vessel methods of leaching	LCD	1
Rotocel, Kennedy extractor, Bollman extractor,	Understanding the working of Rotocel, Kennedy extractor, Bollman extractor,	LCD	1
Single stage leaching	Understanding the notations, equilibrium data, developing the operating line equation.	LCD	1
Problems	Solving problems of singles stage extraction	LCD	2
Multi stage cross current calculations	Developing the operating line equation for multistage cross current systems.	LCD	1
Problems	Solving the problems related to multi stage extraction	LCD	2
Description of multi stage counter current operation and calculations.	Developing the operating line equation for multi stage counter – current systems.	LCD	1
Problems	Solving the problems related to multi stage counter current extraction	LCD	2
Membrane Separations: Principle,	Understanding the principles of membrane separations and advantages	LCD	1
Membrane modules,	Understanding the working of different membrane modules.	LCD	1
dialysis,	Knowing the principle and application of dialysis.	LCD	1
pervaporation.	Knowing the principle and application of pervaporation.	LCD	1
Total			67

Course Coordinator **Head of the Department**

CH 308 Chemical Reaction Engineering-II

Unit.No	Topic of the syllabus to be covered	Learning outcomes	Teaching mode BB/ OHP /LCD	Hours required		Total no of hours (cumulative)	Expected date of completion (for each unit)
				Lectures	Tutorial		
1.	Basics of Non -Ideal flow, The residence time distribution (RTD), State of aggregation of the flowing stream	Able to apply the non-ideality concepts in the reacting system for better understanding of the deviations from ideality by applying the tanks-in-series model and the dispersion model.	**BB**	2	1	3	
	earliness of mixing, Role of RTD, state of aggregation and earliness of mixing in determining reactor behaviour.	Able to apply the non-ideality concepts in the reacting system for better understanding of the deviations from ideality by applying the tanks-in-series model and the dispersion model.	**BB**	2	1	3	
	Exit age distribution of fluid, Experimental methods for finding	Able to apply the non-ideality concepts in the reacting system for better understanding of the deviations from ideality by applying the tanks-in-series model and the dispersion model.	**BB**	2	1	3	
	E –pulse, step experiments, Relationship between F and E	Able to apply the non-ideality concepts in the reacting system for	**BB**	2	1	3	

	curves	better understanding of the deviations from ideality by applying the tanks-in-series model and the dispersion model.					
	Analysis of Non-ideal reactors - basic idea. Compartment models - hints, suggestions and possible applications	Able to apply the non-ideality concepts in the reacting system for better understanding of the deviations from ideality by applying the tanks-in-series model and the dispersion model.	**BB**	2	1	2	
	measurement of the RTD (Tracer Techniques),	Able to apply the non-ideality concepts in the reacting system for better understanding of the deviations from ideality by applying the tanks-in-series model and the dispersion model.	**BB**	1	1	2	
	Dispersion number from C and F curves	Able to apply the non-ideality concepts in the reacting system for better understanding of the deviations from ideality by applying the tanks-in-series model and the dispersion model.	**BB**	1		1	
	Conversion using Dispersion and Tanks in series models for the first order irreversible reaction.	Able to apply the non-ideality concepts in the reacting system for better understanding of the deviations from ideality by applying the tanks-in-series model and the dispersion	**BB**	1	1	2	

		model.					
2.	Introduction to design for heterogeneous reacting systems: Rate equations for heterogeneous reactions,	Able to develop the progressive conversion model and shrinking core model for explaining the fluid particle reaction.	**BB**	1	1	2	
	contacting patterns for two phase systems. Kinetics of fluid - fluid reactions..	Able to develop the progressive conversion model and shrinking core model for explaining the fluid particle reaction.	**BB**	1	1	2	
	The rate equation for straight mass transfer of A (absorption).	Able to develop the progressive conversion model and shrinking core model for explaining the fluid particle reaction.	**BB**	1	1	2	
	The general rate equation and the rate equation for reaction with mass transfer	Able to develop the progressive conversion model and shrinking core model for explaining the fluid particle reaction	**BB**	1	1	2	
	selection of a model, PCM, SCM,	Able to develop the progressive conversion model and shrinking core model for explaining the fluid particle reaction	**BB**	1	1	2	
	comparison of models with real situations. Shrinking Core model for spherical particles of unchanging size	Able to develop the progressive conversion model and shrinking core model for explaining the fluid particle reaction	**BB**	1	1	2	
	Diffusion through gas film controls, Diffusion through ash layer controls, chemical reaction controls	Able to develop the progressive conversion model and shrinking core model for explaining the fluid particle reaction	**BB**	1	1	2	
	Rate of reaction for shrinking spherical particles	Able to develop the progressive conversion model and shrinking core	**BB**	1		1	

		model for explaining the fluid particle reaction					
3.	. Adsorption, Adsorption isotherms, Surface area	Able to understand the properties of catalyst and to estimate the surface area of the catalyst	**BB**	1	1	2	
	Void volume and solid density, Pore volume Distribution.	Able to understand the properties of catalyst and to estimate the surface area of the catalyst	**BB**	1	1	2	
	Theories of heterogeneous catalysis,	Able to understand the properties of catalyst and to estimate the surface area of the catalyst	**BB**	1	1	2	
	Classification of catalysts, Catalyst preparation,	Able to understand the properties of catalyst and to estimate the surface area of the catalyst	**BB**	1	1	2	
	Promoters and inhibitors	Able to understand the properties of catalyst and to estimate the surface area of the catalyst	**BB**	1	1	2	
4.	Introduction. Solid Catalyzed reactions; Development of rate expressions from L - H - H - W models	Able to understand the principles and mechanism involved in heterogeneous catalysis and analyze the data of heterogeneous catalytic reactions	**BB**	2	1	3	
	reaction $A + B \rightarrow R + S$ under Adsorption, surface reaction and desorption controlling condition.	Able to understand the principles and mechanism involved in heterogeneous catalysis and analyze the data of heterogeneous catalytic reactions	**BB**	2	1	3	

	Pore diffusion resistance combined with surface kinetics (Single cylindrical pore, first order reaction)	Able to understand the principles and mechanism involved in heterogeneous catalysis and analyze the data of heterogeneous catalytic reactions	**BB**	2	1	3	
	Porous catalyst particles. Data analysis for heterogeneous catalytic reactors	Able to understand the principles and mechanism involved in heterogeneous catalysis and analyze the data of heterogeneous catalytic reactions	**BB**	2	1	3	
	isothermal packed bed (PFR) reactor design Experimental methods for finding rates	Able to understand the principles and mechanism involved in heterogeneous catalysis and analyze the data of heterogeneous catalytic reactions	**BB**	1	1	2	
5.	Deactivating catalysts, Mechanisms of catalyst deactivation,	Able to estimate the conversion of reactions involving deactivating catalysts	**BB**	1	1	2	
	the rate and performance equations: The rate equation from experiment	Able to estimate the conversion of reactions involving deactivating catalysts	**BB**	2	1	3	
	Determining the rate for batch solids in contact with fluid in batch,	Able to estimate the conversion of reactions involving deactivating catalysts	**BB**	2	1	3	
	mixed flow and plug flow modes for independent deactivation. Effect of pore diffusion resistance.	Able to estimate the conversion of reactions involving deactivating catalysts	**BB**	1	1	2	

Course Coordinator **Head of the Department**

CH 309(R16): PROCESS DYNAMICS AND CONTROL

Lectures: 4 Periods / week
Sessional Marks: 40
Semester End Exam Marks: 60
Semester End Exam: 3 hrs
Credits: 3

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I			
Basic Concepts in Process control	To understand the basic principles and problems of process control.	BB	1
Laplace transforms, inversion by partial fractions and properties of transforms.	To apply the Laplace transform tools.	BB	3
Linear open loop systems: Response of first order systems-Transfer function of thermometer	To develop the transfer function model for thermometer.	BB	1
Forcing functions	To understand the various forcing function used to disturb the system.	PPT	1
Response of thermometers	To derive the response of thermometer to various forcing functions.	BB	2
Tutorial	To calculate the response of thermometers.	BB	3
Liquid level system	To develop the transfer function of liquid level systems.	BB	2
Mixing process, RC circuit	To develop the transfer functions of mixing process and RC circuit.	BB	1
Linearization of nonlinear systems	To develop the transfer functions for nonlinear systems	BB	1
Physical examples of first order systems, response of first order systems in series(Non interacting system)	To develop the transfer function for two tank non interacting liquid level system.	BB	1
Two tank interacting system	To develop the transfer function for two tank interacting liquid level system.	BB	1
Tutorial	To get the responses of first order systems in series.	BB	1
UNIT-II			

Second order systems: Transfer function development for damped vibrator.	To derive the transfer function for damped vibrator.	BB	1
Response of second order systems.	To derive the response equations for different situations.	BB	2
Transportation lag	To understand the concept of transportation lag and to derive the transfer function.	BB	1
Tutorial	To estimate the responses of second order systems.	BB	2
Linear closed loop systems: Control system	To understand the various components of control systems and the interaction among them.	PPT	1
Controllers and final control elements	To develop the Ideal transfer functions and to analyze the response characteristics.	BB	1
Heating system	To develop the block diagram of heating system.	BB	1
Chemical reactor control system	To develop the block diagram of Chemical reactor control system.	BB	1
Tutorial	To calculate the responses of various controllers.	BB	2
UNIT-III			
Closed loop transfer functions: Transfer functions for single loop and multiloopsystems.	To derive the transfer functions for single loop and multiloopsystems.	BB	2
Tutorial.	To determine the transfer functions for single loop and multiloopsystems.	BB	1
Transient response of simple control systems	To analyze the transient response of simple control systems.	BB	2
Tutorial	To estimate the offset for various control systems.	BB	1
Stability: Routh test for stability	To understand the Routh test for stability analysis and its limitations.	BB	1
Tutorial	To determine the stability for various control systems.	BB	2
Root locus	To understand the general rules for plotting root locus diagrams.	BB	1
Tutorial	To plot the root locus diagrams for various control systems.	BB	2
UNIT-IV			
Frequency response: Introduction, substitution rule	To understand the frequency response techniques and to apply the substitution rule.	BB	1
Bode diagrams	To understand the general construction of Bode diagrams	BB	3

	for different systems.		
Tutorial	To plot the Bode diagrams for various systems.	BB	2
Control system design by frequency response: Temperature control systems	To analyze the bode diagrams of temperature control system	BB	1
Bode stability criteria,	To understand the Bode stability criterion and safety margins.	BB	1
Ziegler–Nichols control settings	To estimate the Z-N control setting from Bode plots.	BB	1
Tutorial	To design the control systems using Z-N tuning rules	BB	1
UNIT-V			
Advanced control strategies: Cascade control	To understand the cascade control strategy and it's tuning.	BB	2
Feed forward control	To understand the cascade control strategy and it's tuning.	BB	2
Ratio control strategy	To understand the ratio control strategy.	BB	1
Internal model control	To design the Internal model control.	BB	1
Controller tuning and process identification: Tuning rules	To understand the closed loop and open loop tuning methods.	BB	2
Process identification	To understand the various process identification techniques.	BB	1
Control Valves: Valve construction, sizing	To understand the valve construction and sizing	BB	1
Characteristics	To derive the various valve characteristics	BB	1
Valve positioner	To understand the working of valve positioner.	BB	1
Total			64

Course Coordinator **HOD**

CH 310 (A) PROCESS ECONOMICS AND PLANT DESIGN (R16)

Lectures : 4 periods / week *Sessional Marks : 40*

Semester End Exam Marks : 60

Semester End Exam : 3 hrs *Credits : 4*

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I			
Introduction to the Course	Introduction to Process Economics and Plant Design - Objectives and outcomes	BB	1
Introduction to plant design: Chemical Engineering plant design, process design development	Understand the step by step procedure for the design of a chemical process	BB	2
Optimum design	Be able to understand the cost effective and high yield design	BB	1
Practical considerations in design	Be able to understand the points to be considered which designing a chemical process	BB, PPT	1
Design approach and Process Design Development: Design-Project procedure.	Understand the process of approach of design process , step by step procedure of typical process	BB, PPT	2
Process Design Development: Design information from literature	Understand the process of literature survey required for the design	BB, PPT	1
Flow diagrams, Preliminary Design	Understand the flow sheeting of the process and be able to do the primary design	BB, PPT	2
Comparison of different processes and Equipment design specifications	Be able to identify the difference among various equipment and processes	BB, PPT	2
UNIT- II			
General design considerations: Health and safety hazards: Source of exposure, Exposure evaluation	Be able to understand the minimum considerations to be made while designing a plant, what could be sources of exposure and how to evaluate the concentrations of the same and propose control measures	BB, PPT	3
Exposure –Hazard control, Fire and	Be able to identify the hazards, and make safety regulations	BB, PPT	2

Explosion Hazards and Personal safety			
Loss prevention-HAZOPS Study, Fault-Tree Analysis, Failure mode and Effect Analysis	Be able to conduct the HAZOP study to identify the hazards and tyr to prevent the same by analysis	BB, PPT	2
Safety Indices, Safety Audits	Be able to follow the safety cautions and conduct the safety audits	BB, PPT	1
Plant location, Plant layout, Plant operation and control	Be able to identify the location of the plant, and draw the layout and control the plant operations	BB	2
Utilities, Structural design, Storage and Material handling	Able to identify the utilities, and draw the structural design for plant creation, and consider the storage and handling procedure	BB, PPT	2
UNIT-III			
Cost Estimation: Factors affecting investment and Production cost	Able to define the estimation of capital cost and product costs. And also be able to know the factors effecting the capital and product costs	BB, PPT	2
Capital Investment and Estimation of capital investment	Be able to estimate the capital invest by various methods	BB, PPT	2
Cost Indices, Cost Factors in Capital Investment and Estimation of total product cost	Understand the cost index and the factors to be considered in estimating and the capital investment and the production cost	BB, PPT	2
Types of interest, Nominal& effective interest rates and Continuous interest	Understand the definition of interest and rate of interest and be able to differentiate nominal, effective and continuous interest rates	BB, PPT	2
Problems	Problems on estimation investment, product cost and also the problems involving interest rates	BB PPT	3
UNIT - IV			
Depreciation: Types of Depreciation	Be able to define depreciation, and classify depreciation	BB	1
Service Life, Salvage Value, Present Value	Be able to define and estimate the service life, salvage value and present value of the product	BB, PPT	3
Methods for determining Depreciation	Be able to estimate the depreciation by various methods	BB, PPT	2
Profitability: Profitability analysis	Be able to define profitability and understand the analysis of profitability	BB, PPT	1
Comparison of alternative investments and replacements	Understand the Comparison of alternative investments and replacements	BB, PPT	2
Accounting for inflation and technological advancement	Be able to know and understand the accounting methods to estimate the inflation and technical advancements	BB, PPT	2

UNIT- V			
Materials and fabrication selection:	Understand the selection of materials for the construction	BB, PPT	1
Selection of materials	Understand the selection of suitable and effective materials	BB, PPT	2
Economics in Selection of Materials	Understand the costs involved and selection of materials of durable and cost effective for the fabrication	BB, PPT	2
Fabrication of Equipment	Understand the process of fabrication according to design specifications	BB, PPT	1
Transport & Storage of solids	Understand the principle and process of transportation of solids	BB, PPT	1
Transport & Storage of liquids	Understand the principle and process of transportation of liquids	BB, PPT	1
Transport & Storage of gases	Understand the principle and process of transportation of gases	BB,PPT	1
			55

Course Coordinator **HOD**

CH 311 INDUSTRIAL HAZARDS AND SAFETY ANALYSIS (R16)

Lectures : 4 periods / week *Sessional Marks : 40*

Semester End Exam Marks : 60

Semester End Exam : 3 hrs *Credits : 4*

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No.Of Classes**
UNIT-I	Introduction about the course. Course objective and outcomes	**BB**	1
Introduction:Definition of safety	Know about the importance of Safety in Industries	BB &PPT	2
Basis for safety	Know about the Basis of safety	BB	2
Chemical hazards and worker safety	Learn about the safety of workers during manufacturing, purchase and usage	PPT& BB	5
Safety aspects of site selection	Understand about Safety aspects of site selection	BB &PPT	3
Safety aspects of layout and unit plot planning	Understand about Safety aspects of layout and unit plot planning	BB & PPT	3
Hazards of commercial chemical reactions	Know about Hazards of commercial chemical reactions	BB	2
Hazards of commercial chemical operations.	Know about Hazards of commercial chemical operations.	BB &PPT	3
UNIT- II	Introduction about the course. Course objective and outcomes		
Safety: Process design: Introduction, the technique of safe process design	Learn about Process design	BB	2
reactor, separation, materials handling, and storage	Know about process design based on reactor, separation, materials handling, and storage	BB	4
safe control of process variables. Instrumentation for safe operations-	Understanding of Instrumentation for safe operation	BB &PPT	1
self- acting temperature and pressure regulators, pneumatic controllers, potentiometric controllers	Know about Instrumentation for safe operation-- self- acting temperature and pressure regulators, pneumatic controllers, potentiometric controllers	PPT & BB	4
float switches, alarms, annunciators,and interlocks	float switches, Annunciators, Alarms etc	BB &PPT	3
Safety education	Know about Safety education	BB	2
Safety training	Learn about safety training	BB	2

UNIT-III	Introduction about the course. Course objective and outcomes		
Effect of toxic agents	Know about Effect of toxic agents on Eyes, Skin, Respiratory and Digestive systems	PPT&BB	4
Flammable materials- Fire Triangle, Distinction between Fires and Explosions	Know about Flammable materials, Flammable limits fire triangle	BB	3
Flammability Characteristics of Liquids and Vapors,	Know about Flammability Characteristics of Liquids and Vapors,	BB	2
Concepts to Prevent Fires and Explosions	Learn about Concepts to Prevent Fires and Explosions	BB	2
Explosion-Proof Equipment and Instruments, Ventilation, Sprinkler Systems.	Know about Explosion-Proof Equipment and Instruments, Ventilation, Sprinkler Systems.	BB &PPT	3
Work permit systems: Hazardous operation permits, hazardous work area permits, special hazard permit and equipment operating permits.	Understanding the importance of work permits—hazardous work permits, Hazardous area permits etc.	BB	3
UNIT- IV	Introduction about the course. Course objective and outcomes		
Personnel protective equipment	Know about the Personnel protective equipment to eyes, skin, ears, Head etc.	BB&PPT	4
Fire extinguishing agents and their applications	Know about Fire extinguishing agents and their applications-	BB&PPT	3

classification of fires, extinguishing agents and methods of application, mechanism of extinguishment	Know about classifications and method of applications- Water,CO_2 and Dry powder	BB&PPT	4
Measuring safety effectiveness criteria for effective measures.	Learn how to Practice safety effectiveness	BB	3
UNIT- V	Introduction about the course. Course objective and outcomes		
Risk Assessment -Hazard identification techniques with examples such as QRA, FMEA,	Know about Risk assessment	BB	2
Fault Tree Analysis, Event Tree Analysis.	Understand the FTA and ETA	**BB**	**2**
Hazard and operability (HAZOP) study: Introduction, basic concepts	Learn about HAZOP in chemical industries	**BB**	**2**
conducting a HAZOP study.	Learn about HAZOP in chemical industries	**BB**	**2**

Course Coordinator **HOD**

CH 312 (C) :Petroleum Refinery Engineering

Unit.No	Topic of the syllabus to be covered	Learning outcomes	Teaching mode BB/ OHP /LCD	Hours required		Total no of hours (cumulative)	Expected date of completion (for each unit)
				Lectures	Tutorial		
1.	Origin, formation and composition of petroleum	Able to the overall scenario of quality of crude oil.	**BB**	2	1	3	
	Petro Glimpses and petroleum industry in India	Able to the overall scenario of quality of crude oil.	**BB**	2	1	3	
	Dehydration and desalting of crudes	Able to the overall scenario of quality of crude oil.	**BB**	2	1	3	
	Crude oil classification-Composition	Able to the overall scenario of quality of crude oil.	**BB**	2	1	3	
	properties-Composition of petroleum crude suitable for asphalt/coke manufacture	Able to the overall scenario of quality of crude oil.	**BB**	2	1	2	
	Evaluation of crude oils.	Able to the overall scenario of quality of crude oil.	**BB**	1	1	2	
2.	LPG-	Able to calculatedifferent Petroleum Products and their specifications	**BB**	1		1	
	Gasoline	Able to calculatedifferent Petroleum Products and their specifications	**BB**	1	1	2	
	Diesel fuels	Able to calculatedifferent Petroleum Products and their specifications	**BB**	1	1	2	
	Jet and turbine	Able to calculatedifferent	**BB**	1	1	2	

	Fuels	Petroleum Products and their specifications					
	Blending of gasoline	Able to calculatedifferent Petroleum Products and their specifications	**BB**	1	1	2	
	Lube oils-Heating oils	Able to calculatedifferent Petroleum Products and their specifications	**BB**	1	1	2	
	Residual fuel oils	Able to calculatedifferent Petroleum Products and their specifications	**BB**	1	1	2	
	wax and asphalt	Able to calculatedifferent Petroleum Products and their specifications	**BB**	1	1	2	
	Petroleum coke	Able to calculatedifferent Petroleum Products and their specifications	**BB**	1	1	2	
	All Product Specifications - Product blending	Able to calculatedifferent Petroleum Products and their specifications	**BB**	1		1	
3.	Atmospheric and Vacuum distillation units	Able to know the different processes involving for up gradation of petroleum fractions	**BB**	1	1	2	
	Auxiliary equipment such as pipe still heaters	Able to know the different processes involving for up gradation of petroleum fractions	**BB**	1	1	2	
	heat exchanger trains	Able to know the different processes involving for up gradation of petroleum fractions	**BB**	1	1	2	

	Catalytic reforming	Able to know the different processes involving for up gradation of petroleum fractions	**BB**	1	1	2	
	isomerization	Able to know the different processes involving for up gradation of petroleum fractions	**BB**	1	1	2	
4.	Thermal & Catalytic cracking processes	Able to do Thermal & Catalytic cracking processes	**BB**	2	1	3	
	Visbreaking	Able to do Thermal & Catalytic cracking processes	**BB**	2	1	3	
	Delayed Coking	Able to do Thermal & Catalytic cracking processes	**BB**	2	1	3	
	Fluid Catalytic cracking	Able to do Thermal & Catalytic cracking processes	**BB**	2	1	3	
	Hydrocracking - Feed stocks	Able to do Thermal & Catalytic cracking processes	**BB**	1	1	2	
	Hydrotreating&Hydroprocessing	Able to do Thermal & Catalytic cracking processes	**BB**	1	1	2	
	Kerosene, Diesel	Able to do Thermal & Catalytic cracking processes	**BB**	2	1	3	
5.	Octane number, Cetane number	Able to do quality estimation, adopt different storage methods and transportation methods	**BB**	2	1	3	
	Diesel index	Able to do quality estimation, adopt different storage methods and transportation methods	**BB**	1	1	2	
	tanks, bullets, special types of spheres	Able to do quality estimation, adopt different storage methods and transportation methods	**BB**	1	1	2	
	Transportation of petroleum	Able to do quality estimation,	**BB**	1	1	2	

	products: road, rail, sea and pipeline	adopt different storage methods and transportation methods					
	Importance of pipeline transportation	Able to do quality estimation, adopt different storage methods and transportation methods	**BB**	1	1	2	

Course Coordinator **Head of the Department**

CH312(D) (R16) – FLUIDIZATION ENGINEERING – LECTURE PLAN

S.No.	Topic	Learning outcomes	Blooms Taxonomy	No. of Periods	Teaching methodology
	UNIT 1: Introduction	Introduction to course objectives and outcomes	Understand	1	BB
1	Phenomena of fluidization	Understand the concept of fluidization and phenomenon of fluidization	Understand	2	BB
2	Liquid like behavior of fluidized beds	Students able to understand the liquid like behavior of solids through an video lecture	Understand	2	BB & video lecture
3	Advantages and disadvantages of fluidized beds	What are the advantages and disadvantages of fluidization	Understand	1	BB
4	Different types of fluidized beds	Should learn about the types of fluidized beds like continuous beds /batch /semi continuous	Understand	1	BB
5	Application of fluidization techniques in process industries.	Understand the importance of applications of fluidization in process industries	Understand	1	BB
6	**Fixed beds:** Derivation of fixed bed pressure drop equations from fundamental characteristics	Able to learn about fixed beds and also learn how to calculate pressure drop in an fixed bed by fundamental characteristics	Understand	1	BB
7	Kozeny Carman equation and Ergun's equation	Derivation of pressure gradient for entire range of flow through Ergun's equation.	Understand	2	BB
8	Effect of particle size, sphericity, vesicularity, wall effect, surface roughness and voidage on fixed bed pressure drop.	How the particle size, sphericity, vesicularity, wall effect, surface roughness and voidage effect on fixed bed pressure drop.	Understand	2	BB & video lecture
	UNIT II :				
9	**Minimum fluidization:** Derivation for minimum fluidization mass	How to Derive an equation for minimum fluidization mass velocity	Understand	2	BB & video lecture

	velocity				
10	Pressure drop equation for minimum fluidization.	How to derive a Pressure drop equation for minimum fluidization.	Understand	2	BB & video lecture
11	**Fluidization:** Types of fluidization, batch, continuous and semi fluidizations	Learn about the Types of fluidization, batch, continuous and semi fluidizations	Understand	2	BB
12	pressure drop flow diagrams, slugging, channeling, effect of L/D	Understand the pressure drop flow diagrams and concept of slugging, channeling and effect of effect of L/D	Understand	2	BB
	UNIT III :				
13	fluid distributors	Learn about different types of fluid distributors	Understand	2	BB & video lecture
14	power consumption and pumping requirements	Understand the concept of power consumption and pumping requirements in fluidized bed	Understand	2	BB & video lecture
15	**Bubble phenomena:** Single rising bubble	**Bubble phenomena:** Learn about the behavior of a Single rising bubble in a column	Understand	1	BB
16	two dimensional Davidson model	Understand the concept of single rising bubble by two dimensional Davidson model	Understand	2	BB & video lecture
17	maximum stable bubble size,	Learn about the conditions to maintain maximum stable bubble size,	Understand	2	BB & video lecture
18	criteria for the stability of the bubble, rise velocity of a gas bubble	Understand about the criteria for the stability of the bubble and also about the rise velocity of a gas bubble	Understand	2	BB
	UNIT IV :				

19	Bubbling bed model for the bubble phase.	Learn about the concept of Bubbling bed model for the bubble phase	Understand	2	BB
20	**Terminal Velocity:** Derivation for terminal velocity.	Terminal Velocity: what is terminal velocity and Derivation for calculating the terminal velocity.	Understand	2	BB
21	**Entrainment and Elutriation:** Transport disengaging height (TDH),.	Concept of Entrainment and Elutriation:and what is Transport disengaging height (TDH)	Understand	2	BB
22	entrainment at or above TDH	Significance of TDH and also learn about what happens when entrainment is at or above TDH	Understand	2	BB & PPT
23	single size of solids and entrainment below TDH	Understand the concept of single size of solids and entrainment below TDH	Understand	2	BB & PPT
24	elutriation rate equation, elutriation of fines,	Derivation of elutriation rate equation, and understand the concept of elutriation of fines,	Understand	2	BB & PPT
25	entrainment for an infinite Free Board and small Free Board.	Conditions of entrainment for an infinite Free Board and small Free Board.	Understand	2	BB & PPT
	UNIT V :				
26	**Flow of High Bulk Density and Low Bulk Density Mixtures:** Pressure drop in stick-slip flow, pressure drop in aerated flow	Understand the Pressure drop in stick-slip flow and also understand the pressure drop in aerated flow	Understand	2	BB & video lecture
27	downward discharge from a vertical pipe and flow in a horizontal pipe	Learn about the downward discharge from a vertical pipe and flow in a horizontal pipe	Understand	2	
28	Saltation velocity (horizontal flow), choking velocity (vertical flow),	Able to understand the concept of Saltation velocity (horizontal flow), choking velocity (vertical flow),	Understand	2	BB & video lecture

29	Pressure drop in beds, cyclones in fluidized bed reactors.	Understand the concept of Pressure drop in beds, cyclones in fluidized bed reactors.	Understand	2	BB & video lecture
30	**Spouted bed:** Pressure drop flow diagram,	What is Spouted bed and explain the concept using Pressure drop flow diagram,	Understand	2	
31	minimum spouting correlation, spouting requirements	What is minimum spouting correlation, and explain about the conditions for spouting requirements		3	
32	Revision				
			TOTAL	**59**	

Course Coordinator **Head of the Department**

CH 208 – Process Heat Transfer
Lesson Plan

S.No	Title of the content	CO-PO mapping	No of hours to be taught	Blooms taxonomy level	Method of teaching Black board/projector /any other means
		UNIT -1			
1.	Introduction to Process Heat Transfer-Objectives and outcomes	CO1: PO1, PO2, PO4	1	Understand	Black Board & LCD
2.	Modes of heat transfer	CO1: PO1, PO2, PO4, PO12	1	Understand	Black Board & LCD
3.	basic laws of heat transfer	CO1: PO1, PO2, PO4	1	Understand	Black Board & LCD
4.	Thermal conductivity. Steady state one dimensional heat conduction through plane	CO1: PO1, PO2, PO4, PO12	2	Understand, Analyze	Black Board & LCD
5.	Steady state one dimensional heat conduction through cylindrical wall	CO1: PO1, PO2, PO4	2	Understand, Analyze	Black Board & LCD
6.	Steady state one dimensional heat	CO1: PO1, PO2, PO4,	1	Understand, Analyze	Black Board & LCD

	conduction through spherical wall				
7.	Critical insulation thickness	CO1: PO1, PO2, PO4	1	Analyze	Black Board & LCD
8.	composite resistance in series	CO1: PO1, PO2, PO4	2	Analyze	Black Board & LCD
UNIT-II					
9.	Unsteady stateheat conduction: through infinite slab	CO2: PO1, PO2, PO4	2	Understand	Black Board & LCD
10.	Unsteady state heat conduction: through infinite long solid cylinder	CO2: PO1, PO2, PO4	1	Analyze, Understand	Black Board & LCD
11.	Unsteady state heat conduction: through sphere	CO2: PO1, PO2, PO4	1	Analyze, Understand	Black Board & LCD
12.	Heat flow with variable surface temperature	CO2: PO1, PO2, PO4	1	Understand	Black Board & LCD
13.	Heat flow in semi-infinite solids	CO2: PO1, PO2, PO4	1	Understand	Black Board & LCD
14.	Convection: Heat exchange equipment, energy balances	CO2: PO1, PO2, PO4	2	Understand	Black Board & LCD
15.	heat flux and heat transfer coefficients	CO2: PO1, PO2, PO4	2	Understand	Black Board & LCD
16.	LMTD, relation between individual and overall heat	CO2: PO1, PO2, PO4	2	Understand	Black Board & LCD

	transfer coefficients				
17.	thermal boundary layer, dimensionless numbers in heat transfer and their significance	CO2: PO1, PO2, PO4	2	Understand	Black Board & LCD
		UNIT-III			
18.	Forced Convection: Heat transfer by forced convection inside tubes and ducts in laminar, transition & turbulent flow	CO3: PO1, PO2, PO4	2	Understand	Black Board & LCD
19.	Analogy between heat and momentum transfer, Reynold's, Prandtl and Colburn analogies	CO3: PO1, PO2, PO4	2	Understand, Analyze	Black Board & LCD
20.	Heat transfer to liquid metals	CO3: PO1, PO2, PO4	1	Understand	Black Board & LCD
21.	Forced convection over exterior surfaces	CO3: PO1, PO2, PO4	1	Understand, Analyze	Black Board & LCD
22.	Heat transfer for tubes in cross flow.	CO3: PO1, PO2, PO4, PO12	2	Understand, Analyze	Black Board & LCD
23.	Natural convection:Grashoff number, natural convection from vertical	CO3: PO1, PO2, PO4	2	Understand	Black Board & LCD

	and horizontal surfaces.				
		UNIT-IV			
24.	Heat transfer to fluids with phase change: Heat transfer from condensing vapours	CO4: PO1, PO2, PO4	1	Understand	Black Board & LCD
25.	Film wise and drop wise condensation	CO4: PO1, PO2, PO4	1	Understand	Black Board & LCD
26.	Derivation and practical use of Nusselt equation, condensation of superheated vapours,	CO4: PO1, PO2, PO4	1	Understand	Black Board & LCD
27.	Effect of non-condensable gases on rate of condensation	CO4: PO1, PO2, PO4	1	Understand	Black Board & LCD
28.	Heat transfer to boiling liquids	CO4: PO1, PO2, PO4	1	Understand	Black Board & LCD
29.	Boiling of saturated liquid, maximum flux and critical temperature drop	CO4: PO1, PO2, PO4, PO12	2	Understand	Black Board & LCD
30.	minimum flux and film boiling, sub-cooled boiling	CO4: PO1, PO2, PO4, PO12	1	Understand	Black Board & LCD
31.	Radiation: Thermal radiation, emission	CO4: PO1, PO2, PO4,	1	Understand	Black Board & LCD

	of radiation	PO12			
32.	absorption of radiation by opaque solids, radiation between surfaces	CO4: PO1, PO2, PO4, PO12	1	Understand	Black Board & LCD
33.	radiation to semitransparent materials	CO4: PO1, PO2, PO4, PO12	1	Understand	Black Board & LCD
34.	combined heat transfer by conduction, convection and radiation	CO4: PO1, PO2, PO4, PO12	2	Understand	Black Board & LCD
		UNIT-IV			
35.	Heat-Exchange Equipment: Shell & tube heat exchangers	CO5: PO1, PO2, PO4, PO12	2	Understand, Analyze	Black Board & LCD
36.	plate – type exchangers, extended surface equipment, scraped - surface exchangers	CO5: PO1, PO2, PO4, PO12	2	Understand, Analyze	Black Board & LCD
37.	condensers and vaporizers	CO5: PO1, PO2, PO4, PO12	1	Understand, Analyze	Black Board & LCD
38.	heat transfer in agitated vessels and packed beds	CO5: PO1, PO2, PO4, PO12	2	Understand, Analyze	Black Board & LCD
39.	Evaporation: Types	CO5: PO1,	2	Understand,	Black Board &

	of evaporators. Performance of evaporators; capacity and economy of evaporators	PO2, PO4, PO12		Analyze	LCD
40.	boiling point elevation and Duhring's rule	CO5: PO1, PO2, PO4, PO12	1	Understand,	Black Board & LCD
41.	material and energy balances in single effect evaporator	CO5: PO1, PO2, PO4, PO12	1	Understand, APPLY	Black Board & LCD
42.	Multi effect evaporators; methods of feeding, capacity and economy	CO5: PO1, PO2, PO4, PO12	2	Understand, Analyze	Black Board & LCD

CH 401(R16): TRANSPORT PHENOMENA

Lectures: 4 Periods / week

Sessional Marks: 40

Semester End Exam Marks: 60

Semester End Exam: 3 hrs

Credits: 3

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I			
Momentum Transport: Introduction to momentum transport	To understand the basic mechanism of momentum transport and the concept of Newton's law of viscosity.	BB	1
Non-Newtonian fluids	To understand the various empirical relations between momentum flux and shear rate.	PPT	1
Pressure and temperature dependence of viscosity of liquids and gases.	To demonstrate the effect of temperature and pressure on viscosity of liquids and gases and to estimate the viscosity of substances.	BB	2
Velocity distributions in laminar flow, shell momentum balances and boundary conditions	To understand the stepwise procedure to get velocity profiles by applying the boundary conditions.	PPT	1
Flow of falling film	To develop the shell momentum balance and to obtain the velocity distributions.	BB	2
Flow through circular tubes and annulus	To derive the velocity distributions for flow through circular tube and flow through annulus between two coaxial cylinders.	BB	4
Flow of two adjacent immiscible fluids	To determine the velocity distributions for flow of two immiscible fluids.	BB	2
Tutorial	To develop the velocity distributions for various flow systems.	BB	2
UNIT-II			
Equations of continuity	To understand the meaning of partial, total and substantial time derivatives & to derive the equation of continuity for flow system.	BB	1

Equations of motion.	To derive the Navier Strokes equation and Euler equations.	BB	2
Application of Navier strokes equation and Euler equation for laminar, steady flow problems: tangential annular flow of a Newtonian fluid, Shape of the surface of a rotating liquid.	To formulate steady state laminar flow problems and to solve them.	BB	3
Tutorial	To setup and solve steady state laminar flow problems.	BB	2
Turbulent Flow: Velocity distribution in turbulent flow	To understand the velocity distributions in turbulent flow.	PPT	1
Time smoothing of equations of change	To derive the time smoothed equations of continuity and motion	BB	2
Logarithmic distribution law for velocity distribution for tube flow (far from wall and near wall)	To develop the velocity distributions for tube flow far from wall.	BB	1
Velocity distributions in tube flow near wall	To develop the velocity distributions for tube flow near wall.	BB	1
Tutorial	To find velocity distributions in turbulent flow	BB	1
UNIT-III			
Friction factors for flow in tube and around submerged objects.	To derive the expressions for the friction factor for different flow situations.	BB	1
Friction factor correlations.	To understand the various correlations used to predict the friction factors.	BB	1
Pressure drop calculations	To estimate the pressure drop in flow through tubes.	BB	1
Pressure drop for packed columns	To estimate the pressure drop for packed columns.	BB	1
Macroscopic mass, momentum and mechanical energy balances	To develop the macroscopic mass, momentum and mechanical energy balances for flow systems.	BB	2
Pressure rise and friction loss in a sudden expansion.	To estimate the pressure rise and friction losses due to sudden expansion.	BB	1
Tutorial	To calculate the power requirement to pump the fluids.	BB	1
Energy Transport: Steady state conduction,	To understand the basic mechanisms of heat conduction and	PPT	1

thermal conductivity, mechanism of energy transport, Fourier's law	to derive the Fourier's law.		
Effect of temperature and pressure on thermal conductivity	To demonstrate the effect of temperature and pressure on thermal conductivity of liquids and gases. and to estimate the thermal conductivity of substances.	PPT/BB	2
Tutorial	To estimate the thermal conductivities of substances.	BB	1
UNIT-IV			
Temperature distribution in solids and in laminar flow, shell energy balances, boundary conditions	To understand the stepwise procedure to obtain temperature profiles by applying boundary conditions.	BB	1
Heat conduction with electrical heat source	To develop the expressions for heat flux and temperature distributions for heat conduction with electric heat source.	BB	2
Nuclear heat source.	To develop the expressions for heat flux and temperature distributions for heat conduction with Nuclear heat source.	BB	1
Viscous heat source	To develop the expressions for heat flux and temperature distributions for heat conduction with Viscous heat source	BB	1
Heat conduction through composite wall.	To estimate the overall heat transfer coefficient and heat flux through the composite wall in Cartesian and cylindrical coordinates.	BB	2
Forced convection and free convections	To understand the differences between forced & free convection heat transfer and to estimate the temperature and velocity profiles.	BB	2
Heat transfer coefficients–forced convection in tubes & around submerged objects	To understand the various correlations to predict heat transfer coefficients and their range of applicability.	BB	1
Free convection on a vertical plate and horizontal pipe.	To understand the various correlations to predict heat transfer coefficients and their range of applicability in free convection.	BB	1
Tutorial	To find out the temperature profiles and to calculate the rate of heat transfer in various systems.		4
UNIT-V			
Mass Transport: Diffusivity and mechanism of	To understand the basic mechanisms of mass transport.	BB	1

mass transport			
Definition of concentration, velocities and mass fluxes	To understand the various measures of concentrations, definitions of velocities and mass fluxes.	BB	1
Fick's law of diffusion	To demonstrate the Fick's law of diffusion.	BB	1
Temperature and pressure dependence of mass diffusivity	To understand the effect of temperature and pressure on mass diffusivity.	BB	1
Shell mass balances, boundary conditions and applications	To understand the stepwise procedure to obtain concentration profiles by applying the boundary conditions.	BB	1
Diffusion through a stagnant gas film	To determine the concentration profiles and molar fluxes for Diffusion through a stagnant gas film	BB	2
Diffusion with heterogeneous and homogeneous chemical reactions	To determine the concentration profiles and molar fluxes for Diffusion with heterogeneous and homogeneous chemical reactions	BB	3
Diffusion into falling liquid film	To determine the concentration profiles and molar fluxes for Diffusion into falling liquid film.	BB	1
Equation of continuity for binary mixtures	To derive the equation of continuity for multi component mixtures	BB	1
Tutorial	To estimate diffusivity, concentrations and molar fluxes in various systems	BB	2
Total			70

Course Coordinator **HOD**

CH 404 (A) ENERGY ENGINEERING (R16)

Lectures : 4 periods / week *Sessional Marks : 40*

Semester End Exam Marks : 60

Semester End Exam : 3 hrs *Credits : 4*

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I			
Introduction to the Course	Introduction to Energy Engineering - Objectives and outcomes	BB	1
Conventional energy resources, the present scenario, scope for future development	Understand the classification of conventional energy resources, availability, consumption of global as well as Indian scenario	BB	2
Coal: Origin, occurrence and reserves, classification	Be able to understand the origin, occurrence and classification of coal	BB	2
Estimation and ranking of Coal	Be able to understand the estimate coal composition by proximate and ultimate analyses and also be able to rank the coal into lignite, bituminous and anthracite	BB	2
Coal carbonization	Understand the process of conversion of coal into coke by LTC and HTC through beehive oven, by-product oven and also be able to differentiate LTC from HTC	BB	2
Coal gasification	Understand the process of conversion of coal into gaseous fuels by lurgi and high temperature winkler's gassifiers	BB, videos	2
Liquefaction of coal	Understand the direct conversion of coal into liquid fuels	BB, PPT	1
UNIT- II			
Petroleum: Origin, occurrence and reserves, classification	Be able to understand the origin, occurrence and classification of petroleum	BB, PPT	2
Petroleum refining: distillation	Be able to understand the distillation process and also be able to differentiate ADU from VDU	BB, PPT	2
Cracking	Be able to differentiate thermal cracking from catalytic cracking and be able to explain the processes with flow sheets	BB, PPT	2
Reforming	Be able to differentiate thermal cracking from catalytic reforming and	BB	2

	be able to explain the processes with flow sheets		
Alkylation, polymerization and isomerization	Be able to explain the alternative refining processes	BB	2
UNIT-III			
Non-Conventional Energy Resources: classification, availability	Understand the classification, sources and availability of non-conventional energy sources	BB, PPT	1
Solar Radiation: Types of radiation, solar constant, solar collectors	Understand the concepts of direct and diffuse solar radiation and types of solar collectors – concentrating and flat plate	BB, PPT	3
Applications of solar thermal energy, solar cell, solar pond	Understand the various applications of solar energy, and be able to know the process of stroing thermal energy in solar ponds	BB, PPT	2
Solar PV Cell and Applications	Understand the design and principle of solar PV cell and its applications	BB, PPT	1
Wind Energy: wind mill, wind farm, Components of a wind turbine,, applications	Understand the parts of a wind turbine and the process of extracting wind energy, and also the applications of wind power	BB PPT	2
Horizontal and vertical axes wind energy conversion systems	Understand the process of wind energy conversion by the processes	BB, PPT	2
UNIT - IV			
Ocean Thermal Energy:	Be able to understand the Sources, availability and applications of ocean thermal energy	BB, PPT	1
OTEC: Open and Closed cycles	Be able to understand the conversion of ocean thermal energy into electric energy by open and closed cycles	BB, PPT	2
Geo thermal energy	Be able to understand the Sources, availability and applications of geo thermal energy	BB, PPT	1
Geothermal energy conversion	Be able to understand the conversion of liquid dominated and vapor dominated geothermal sources into electric energy with the flow sheets	BB, PPT	2
Bio Energy:	Understand the sources and types of bio energy conversion	BB, PPT	2
Bio gas plants	Understand classification and difference between fixed dome and moving dome biogas plants	BB, PPT	2
Fuel Cell	Understand the principle, classification and applications of fuel cell	BB, PPT	2
UNIT- V			

Storage of Energy:	Understand the various processes and equipment of energy storage, charging and discharging	BB, PPT	1
Mechanical energy storage	Understand the principle of energy storage via hydroelectric pump, compressed air and fly wheel	BB, PPT	2
Chemical energy storage	Understand the principle of energy storage via hydrogen, ammonia and reversible chemical process	BB, PPT	2
Thermal energy storage	Understand the principle of energy storage via latent heat and sensible heats	BB, PPT	1
Electrical energy storage	Understand the principle of energy storage via lead acid batteries	BB, PPT	1
Energy Conservation: Heat exchangers	Be able to understand how heat exchangers saves energy in the process where the heat losses are identified	BB, PPT	2
Regenerators	Conservation of energy through the regeneration of energy form	BB,PPT	1
Co-generation	Understand how to save energy through cogeneration	BB, PPT	1
			56

Course Coordinator **HOD**

CH 405: PROCESS MODELLING AND SIMULATION

Lectures: 4 Periods / week | Sessional Marks: 40

Semester End Exam Marks: 60

Semester End Exam: 3 hrs | *Credits:* 3

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I			
Introduction, Use of mathematical models	To understand the applications of mathematical models in chemical industries.	BB	1
Principles of formulation	To understand the basic principles of formulation of mathematical models.	BB	1
Fundamental laws: Continuity equation	To apply the equation of continuity to a physical system.	BB	1
Component continuity equation	To develop the component continuity equation to a reacting system.	BB	2
Energy equation for CSTR	To develop the energy balance equation for CSTR	BB	1
Energy equation for Tubular raector	To develop the energy balance equation for tubular reactor	BB	1
Equation of motion	To apply the equation of motion to macroscopic and microscopic systems.	BB	2
Transport equations, Equations of state	To understand the transport equations and equations of state	PPT	1
Equilibrium	To know the phase equilibrium relations	BB	1
Chemical kinetics	To understand the equilibrium criteria and law of mass action	BB	1
Exercise Problems	To develop the conservation equations to various types of reactions.	BB	2
UNIT-II			
Examples of mathematical models of chemical engineering systems: Series of isothermal, constant hold up CSTRs	To develop the mathematical model for reactors.	BB	1
CSTRs with variable hold-ups.	To develop the mathematical model for reactors.	BB	1

Modeling of two heated tanks	To develop the set of mathematical equations to physical system	BB	1
Gas phase pressurized CSTR	To develop the mathematical model for reactors.	BB	1
Modeling of Non-isothermal CSTR	To develop the mathematical model for reactors.	BB	2
Exercise problems	To build the mathematical models for various systems	BB	2
UNIT-III			
Modeling of Single component vaporizer	To develop the mathematical model for evaporators.	BB	2
Modeling of Multi component flash drum.	To derive the mathematical model for flash evaporators.	BB	2
Modeling of pH systems	To determine the set of equations to physical systems.	BB	1
Modeling of Batch reactor	To develop the mathematical models for reactors.	BB	2
Modeling of Reactor with mass transfer	To develop the mathematical models for reactors with mass transfer	BB	2
Ideal binary distillation column.	To derive the set of mathematical equations to represent the ideal binary distillation columns.	BB	2
Batch distillation with holdup	To derive the model for the Batch distillation column.	BB	1
Exercise problems	To build the mathematical models for various systems	BB	2
UNIT-IV			
Methods for solving non-linear equations: Interval Halving method, Newton-Raphson method, False Position method	To understand the various numerical methods and to apply them to solve non-linear equations.	BB	3
Wegstein method	To understand the various explicit convergent techniques and to apply them to solve chemical engineering problems.	BB	2
Numerical integration of ordinary Differential equations: Euler Algorithm and Runge-Kutta (Fourth-Order) methods.	To understand the various techniques for Numerical integration of ordinary Differential equations and to apply them to solve chemical engineering problems.	BB	2
General Concepts of Simulation for Process Design: modular approaches to process simulation- sequential	To understand the modular approaches for process simulation	BB	2

modular approach, simultaneous modular approach			
Equation solving approach, tearing.	To understand the various methods for process simulation	BB	1
UNIT-V			
Simulation examples: Gravity flow tank system	To simulate the physical systems.	BB	1
Simulation of Three CSTRs in series with constant and variable hold-up system	To perform the computer simulation of reactors.	BB	2
Simulation of Non-isothermal CSTR	To perform the computer simulation of reactors.	BB	1
Simulation of Batch reactor	To perform the computer simulation of reactors.	BB	2
Binary distillation column	To carry out the simulation of ideal binary distillation column.	BB	3
Total			55

Course Coordinator **HOD**

CH 406 (D) NANOTECHNOLOGY

Lectures: 4 Periods / week *Sessional Marks: 40*
Semester End Exam Marks : 60 *Semester End Exam: 3 hrs.*
Credits: 3

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No. Of classes**
UNIT-I	Introduction about the course	**BB**	1
Introduction to nanotechnology and materials, Nanomaterial's, Introduction to Nano sizes and properties	Able to understand the application of nanotechnology in daily life and their properties	**BB**	2
Introduction to Nano sizes and properties	Able to understand the application of nanotechnology	**BB**	1
comparison with the bulk materials	Able to understand the morphology	**BB**	2
Approaches of Nano technology	Able to understand the synthesis	**BB**	2
different shapes and sizes and morphology	Able to understand the importance of nanomaterials over bulk materials	**BB**	1
Microscopies SEM, TEM, , Nano tweezers,.	Able to understand the working procedures of instrument and analysis methods of nanomaterials	**BB/video**	3
Atomic Forced Microscopy,	Able to understand the working procedures of instrument and analysis methods of nanomaterials	**BB/video**	2
Scanning and Tunneling Microscopy	Able to understand the working procedures of instrument and analysis methods of nanomaterials	**BB/video**	1
atom manipulation, Nano dots, nanolithography	Able to understand the analysis methods of nanomaterials	**BB/video**	1
Unit-II			
Concepts of Nanomaterial's	Able to understand the various preparations methods of Nano powders and their	**BB**	1

	applications		
preparation, plasma arcing, chemical vapor deposition	Able to understand the various preparations methods of Nano powders and their applications	**BB**	2
Sol-gels, electro deposition, ball milling, applications.	Able to understand the various preparations methods of Nano powders and their applications	**BB**	2
Carbon nanotubes: Structure, Types, formation, assemblies,	Able to understand the synthesis and application of carbon nanotubes		2
Purification, properties and uses.	Able to understand the purification and uses of nanotubes	**BB**	2
Unit-III			
Catenanes and rotaxanes, various molecular switches	Able to understand various molecular switches and its synthesis and properties	**BB**	2
synthesis of rotaxanes and catenanes, molecular computers	Able to understand the industrial applications of nano materials	**BB**	2
chemical rotors, prodders, flippers, atom shuttles, actuators, contacts	Able to understand the industrial applications of nano materials	**BB**	2
Properties of light	Able to understand the synthesis procedures involved in light properties	**BB**	2
Properties of light and nanotechnology, interaction	Able to understand the synthesis procedures involved in light properties, and light interactions	**BB**	2
Unit-IV			
Lipids as Nano-bricks and mortar,	Able to understand the application of nanotechnology in analyzing cell functions	**PPT**	2
self-assembled monolayers, proteins,	Able to understand the proteins self-assemble structures	**PPT**	2
3- D structures arising from amines acids, Nanoscale motors,	Able to understand the application of nanotechnology	**PPT**	2
biological computing ion channels as sensors.	Able to understand the application of nanotechnology	**PPT**	1

Information in DNA structure, using DNA	Able to understand the application of nanotechnology in analyzing cell functions, Cell biology	**PPT**	2
DNA to build Nano-cubes, hinges, smart glue, wire template	Able to understand the application of nanotechnology	**PPT**	2
Unit-V			
Biological methods of synthesis. Applications in drug delivery	Able to understand the application of Nanotechnology in biological systems and medical systems	**BB**	2
Nano containers and Responsive Release of active agents	Able to understand the application of Nanotechnology in biological systems medical systems	**BB**	2
Layer by Layer assembly for Nano spheres.	Able to understand the application of Nanotechnology in biological systems medical systems	**BB**	2
Safety and health Issues of Nanomaterial, Environmental Impacts	Able to understand the issues of nanotechnology	**BB**	1
Case Study for Environmental and Societal Impacts.	Able Understanding the impacts of nanotechnology with example	**LCD**	2
			55

Course Coordinator **Head of the Department**

CH 408 (R16) : OPTIMIZATION OF CHEMICAL PROCESS LECTURE PLAN

S.No	Description of the Topic	Learning Outcomes	No. of Hours	Blooms Taxonomy	Teaching Methodology
	UNIT 1				
1.	Introduction to optimization	Students able to understand what optimization is and how it is necessary.	1	Understand	Black board
2.	Nature and Organization of optimization problems	Understand the nature and organisation of optimization problems	3	Understand	Black board
3.	The essential features of optimization problems	Ability to know the essential features of optimization	2	Understand	Black board
4.	Formulation of objective functions, general procedure for solving optimization problems, obstacles to optimization.	How to formulate an objective function and general procedure for solving optimization problems and also learn about obstacles to optimization.	2	Analyze	Black board
5.	Basic concepts of optimization: Continuity of functions, unimodal versus Multimodel functions. Convex and Concave functions, Convex region,	Students should familiarize what are continuous and discontinuous functions, concave and convex functions and single and multi-variable functions	3	Analyze	Black board
6.	Necessary and sufficient conditions for an extremum of an unconstrained function, interpretation of the objective function in terms of its quadratic approximation	Necessary and sufficient conditions for an extremum of an unconstrained function, fitting models to data, interpretation of the objective function in terms of its quadratic approximation	2	Understand	Black board
	UNIT –II				
7.	Optimization of unconstrained function : one dimensional search	Understand the concept of Optimization of unconstrained function : one dimensional search	2	Understand	Black board
8.	Numerical methods for optimizing a function of one variable, scanning and bracketing procedures, Newton's, Quasi-Newton's and Secant	Students learn about different numerical methods like scanning and bracketing procedures, Newton's, Quasi-Newton's and Secant methods	3	Evaluate	Black board

	methods of unidimensional search,				
9.	Polynomial approximation methods, region elimination methods	Students learn Polynomial approximation methods and region elimination methods	3	Understand & evaluate	Black board
10.	Unconstrained multivariable optimization: random search, grid search	Understand Unconstrained multivariable optimization: random search, grid search with problems	3	Understand & evaluate	Black board
11.	Uni-variate search, gradient method - Steepest Descent, conjugate gradient method	Understand Uni-variate search, gradient method - Steepest Descent, conjugate gradient method with problems	3	Understand & evaluate	Black board
12.	**UNIT -III**				
13.	Linear programming and applications: Basic concepts in linear programming,	What is linear programming and basic concepts in linear programming	2	Understand	Black board
14.	Degenerate LP's – graphical solution, natural occurrence of linear constraints, standard LP form.	Graphical solution for solving linear programming problems	4	Understand & evaluate	Black board
15.	Simplex method and applications. Simplex method to solve LP problems	Simplex method to solve linear programming problems	6	Understand	Black board
16.	Duality principle and converting a LP to dual LP.	Dual simplex method to solve PL problems		Understand & evaluate	
17.	**UNIT -IV**				
18.	Genetic Algorithms: (Qualitative treatment) Working principles,	Understand what are genetic algorithms and its working principles	1	Understand	
19.	differences between GAs and traditional methods,	Able to learn the differences between GAs and traditional methods,	1	Understand	
20.	Similarities between GAs and traditional methods.	Able to learn the similarities between GAs and traditional methods.	1	Understand	
21.	Optimization of recovery of waste heat	Derive an expression for optimization of recovery of waste heat using optimization techniques	2	Analyze	Black board
22.	shell and tube heat exchanger,	Derive an expression for optimization of design of an shell and tube heat exchanger	3	Analyze	Black board
	UNIT-IV				
23.	Optimal pipe diameter	Derive an expression to calculate optimal pipe diameter	2	Analyze	Black board

24.	Optimal residence time for maximum yield in an ideal isothermal batch reactor	Derive an expression to calculate Optimal residence time for maximum yield in an ideal isothermal batch reactor	2	Analyze	Black board
25.	Chemostat	Derive an expression to calculate yiels in a chemostat	2	Analyze	Black board
26.	evaporator design	Derive an expression to calculate no of stages in an evaporator	2	Analyze	Black board
27.	Optimal design of staged distillation column.	Derive an expression to calculate no of stages in a distillation column with reflux	3	Analyze	Black board
28.	liquid liquid extraction process	Derive an expression to calculate yield in an liquid liquid extraction process	3	Analyze	Black board
29.	, optimization of a thermal cracker	Derive an expression to calculate yield in an thermal cracker by using linear programming method	3	Analyze	Black board
	Total No of Hours		**64**		

Course Coordinator **Head of the Department**

CH 402 – Chemical Process Equipment Design

Lesson Plan

S.No	Title of the content	CO-PO mapping	No of hours to be taught	Blooms taxonomy level	Method of teaching Black board/projector /any other means
		UNIT -1			
1.	Introduction to Chemical Process Equipment Design - Objectives and outcomes	CO1: PO1, PO2, PO4	1	Understand	Black Board & LCD
2.	Materials Transfer, Handling and Treatment Equipment Design: Power Requirements	CO1: PO1, PO2, PO4, PO12	1	Understand	Black Board & LCD
3.	Friction, Design calculations of Power Requirements	CO1: PO1, PO2, PO4	2	Understand, Apply	Black Board & LCD
4.	piping standards, Reciprocating pumps	CO1: PO1, PO2, PO4	2	Understand, Apply	Black Board & LCD

5.	Rotary Positive-Displacement Pumps, Centrifugal Pumps	CO1: PO1, PO2, PO4	2	Understand, Analyze	Black Board & LCD
6.	Air-Displacement Systems, Gas Compressors	CO1: PO1, PO2, PO4,	2	Understand, Analyze	Black Board & LCD
7.	Flow measuring Equipment-Venturi Meter	CO1: PO1, PO2, PO4	1	Analyze	Black Board & LCD
8.	Orifice Meter and Rotameter	CO1: PO1, PO2, PO4	1	Analyze	Black Board & LCD
9.	Design of Filters	CO1: PO1, PO2, PO4	2	Apply	Black Board & LCD
		UNIT-II			
10.	Heat transfer equipment design: Determination of heat transfer coefficients	CO2: PO1, PO2, PO3, PO4, PO5	2	Understand	Black Board & LCD
11.	Pressure drop in heat exchangers,	CO2: PO1, PO2, PO4	1	Analyze, Understand	Black Board & LCD
12.	Selection of heat transfer equipment	CO2: PO1, PO2, PO4	2	Analyze, Understand	Black Board & LCD
13.	Design of heat exchangers	CO2: PO1, PO2, PO3, PO4, PO5	3	Understand, Apply	Black Board & LCD
14.	Design of evaporators: Design of single effect	CO2: PO1, PO2, PO3, PO4, PO5	2	Understand, Apply	Black Board & LCD

	evaporators				
15.	Design triple effect forward-feed evaporators	CO2: PO1, PO2, PO3, PO4	2	Understand	Black Board & LCD
UNIT-III					
16.	Forced Convection: Heat transfer by forced convection inside tubes and ducts in laminar, transition & turbulent flow	CO3: PO1, PO2, PO4	2	Understand	Black Board & LCD
17.	Mass transfer equipment design: Finite-stage contactors	CO3: PO1, PO2, PO4	1	Understand	Black Board & LCD
18.	Bubble cap tray, sieve tray and valve tray units	CO3: PO1, PO2, PO3, PO4, PO5	2	Apply	Black Board & LCD
19.	Maximum allowable vapor velocities	CO3: PO1, PO2, PO4	1	Understand, Analyze	Black Board & LCD
20.	plate and column efficiency	CO3: PO1, PO2, , PO3, PO4	2	Understand, Apply	Black Board & LCD
21.	Packed Towers: types of packing	CO3: PO1, PO2, PO4	1	Understand	Black Board & LCD
22.	Pressure drop	CO3: PO1, PO2, PO4	1	Apply	Black Board & LCD
23.	packing efficiencies	CO3: PO1, PO2, PO4	2	Apply	Black Board & LCD
UNIT-IV					

24.	Reactor equipment design: Reactor principles	CO4: PO1, PO2, PO4	1	Understand	Black Board & LCD
25.	Design of Batch Reactors	CO4: PO1, PO2, PO3, PO4, PO5	2	Analyze, Apply	Black Board & LCD
26.	Design of Tubular Plug Flow Reactors	CO4: PO1, PO2, PO3, PO4, PO5	3	Analyze, Apply	Black Board & LCD
27.	Design of Back-Mix Reactors	CO4: PO1, PO2, PO3, PO4, PO5	3	Analyze, Apply	Black Board & LCD
		UNIT-V			
28.	Mechanical design of process equipment: Pressure vessels	CO5: PO1, PO2, PO3, PO4, PO5	2	Analyze, Apply	Black Board & LCD
29.	plate – type exchangers, extended surface equipment, scraped - surface exchangers	CO5: PO1, PO2, PO3, PO4, PO5	2	Analyze, Apply	Black Board & LCD
30.	heads or covers	CO5: PO1, PO2, PO3, PO4, PO5	1	Analyze, Apply	Black Board & LCD
31.	Design of Tall Vessels	CO5: PO1, PO2, PO3, PO4, PO5	2	Analyze, Apply	Black Board & LCD
32.	Storage vessels – storage of nonvolatile liquids	CO5: PO1, PO2, PO3, PO4, PO5	2	Analyze, Apply	Black Board & LCD

33.	Storage of volatile liquids	CO5: PO1, PO2, PO3, PO4, PO5	1	Analyze, Apply	Black Board & LCD
34.	Storage of gases	CO5: PO1, PO2, PO4,	1	Understand,	Black Board & LCD
35.	Supports for vessels – bracket or lug supports	CO5: PO1, PO2, PO4,	1	Understand,	Black Board & LCD
36.	leg supports, skirt supports, saddle supports	CO5: PO1, PO2, PO4,	2	Understand,	Black Board & LCD

CH 410(D) BIO- CHEMICAL ENGINEERING (R16)

Lectures : 4 periods / week *Sessional Marks : 40*

Semester End Exam Marks : 60

Semester End Exam : 3 hrs *Credits : 4*

Description / Topic	**Learning outcomes**	**Teaching mode: BB/ LCD/ OHP/Video**	**No.Of Classes**
UNIT-I	Introduction about the course. Course objective and outcomes	**BB**	1
An over view of industrial bio chemical process	Know about the industrial bio chemical process	BB	2
Comparing chemical and Biochemical process	Know about the comparison of Bio-Chemical and Chemical processes	BB	1
Biophysics and cell doctrine	Learn about the Cell	PPT& BB	2
Structure of cells , Types of cells	Understand the structure and types of Cells	BB &PPT	4
Lipids ,Proteins	Understand the structure and properties of lipids and proteins	BB & PPT	2
Building blocks of DNA and RNA	Understand the structure and functions of DNA,RNA	BB &PPT	2
UNIT- II	Introduction about the course. Course objective and outcomes		
The enzyme- substrate complex & enzyme action	Introduction to Enzyme kinetics	PPT & BB	2
Simple enzyme kinetics with one and two substrates	Derivations of M-M kinetics	BB	3
Substrate activation & inhibition	Understanding the Substrate activation & inhibition with Competitive ,Non -Competitive and un-Competitive inhibitions	BB	3
Problems	Problems on Inhibition and M-M constants	BB Interactive session	2
Modulation & regulation of enzyme activity	Know about the regulation of enzyme activity	BB	1
Applications of enzymes ,enzyme immobilization	Learn about enzyme immobilization	BB	2
Medical & analytical applications of immobilized enzymes	Know about Medical & analytical applications of immobilized enzymes	BB	1
Effect of external mass transfer resistances	Understanding the methods of Effect of external mass transfer resistances	BB	1
Analysis of intra particle diffusion &reaction	Learn about intra particle diffusion &reaction	BB	1

UNIT-III	Introduction about the course. Course objective and outcomes		
Ideal reactors for kinetics measurements	Introduction to Ideal Bio- reactors	PPT&BB	1
Monod growth kinetics	Know about Monod growth kinetics	BB	1
Growth cycle phases for batch cultivation	Understanding the Growth phases of batch culture	BB	2
Fed batch reactors, enzyme – catalyzed reactions in CSTRs	Understanding the fed batch and enzyme – catalyzed reactions in CSTRs	BB	3
CSTR reactors with recycle and wall growth	Understanding CSTR reactors with recycle and wall growth	BB	3
The ideal plug flow tubular reactor	Know about plug flow tubular reactor	BB	1
sterilization reactors	Know about Sterilization reactor	BB	1
Packed bed reactors	Know about Packed bed reactor	BB	1
fluidized bed reactors and trickle – bed reactors	Know about fluidized bed reactors and trickle – bed reactors	BB	2
UNIT-IV	Introduction about the course. Course objective and outcomes		
Fermentation Technology:	Learn about Fermentation		
Medium formulation, aseptic and aerobic fermentation processes,	Know about medium formation and types of fermentation	BB	2
alternate bio-reactor configurations.	Know about Bio reactor configurations	PPT	1
Sterilization – methods, thermal death kinetics	Know about sterilization	BB	2
batch, continuous air and media sterilization.	Know about types of sterilizations	BB	1
Transport phenomena in bioprocess system:			
Transport across cell membrane: passive and facilitated diffusion	Learn about transport across cell membrane	BB	2
active transport	Learn about active transport in cells	PPT	1
gas liquid mass transfer in cellular systems	Learn about transport of gas liquid mass transfer in cells	BB	2

determination of oxygen transfer rates	Learn about oxygen transfer rates	BB	2
UNIT- V	Introduction about the course. Course objective and outcomes		
Recovery of particulates – Filtration	Know about the downstream processes--Filtration	BB	2
Centrifugation , Sedimentation	Know about the downstream processes-- Centrifugation , Sedimentation	BB	2
Extraction ,Precipitation	Know about the downstream processes-- Extraction ,Precipitation	BB	2
Chromatographic techniques, membrane separations	Understanding about Chromatographic techniques, membrane separations	BB	3
Drying and Crystallization	Know about the downstream processes-- Drying and Crystallization	BB	2
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Course Coordinator **Head of the Department**

CH 112 ENGINEERING PHYSICS (R18)

Lectures : 4 periods / week *Sessional Marks : 40*

Semester End Exam Marks : 60

Semester End Exam : 3 hrs *Credits : 4*

Topic Covered	Learning outcomes	No. of Classes	Teaching mode: BB/ LCD/ OHP/Video
UNIT – I O**ptics: Interference:** Introduction, Stoke's principle, interference in thin films due to reflected light (cosine law)	Define the interference in thin films based on Stoke's principle	1-2	Black Board
Newton's rings (formation, derivation for diameters of bright and dark rings)	Explain the theory of circular rings using the interference phenomenon	3-4	Black Board
Diffraction: Concept of diffraction, distinguish between Fraunhofer and Fresnel diffraction	Define the concept of diffraction with examples, Distinction between Fraunhofer and Fresnel's diffraction	5	Black Board
Fraunhofer diffraction at single slit (quantitative)	Explain the theory of Fraunhofer diffraction pattern due to single slit	6	Black Board
Theory of a plane transmission grating, Dispersive Power & Resolving power of a grating	Discuss the theory of diffraction grating and resolving power and dispersive power of grating	7-8	Black Board
Polarisation: Introduction, double refraction, construction & working of a Nicol prism, quarter wave plate	Identify various methods of converting unpolarisied into polarized light	9-11	Black Board
production & detection of circular and elliptical polarizations(qualitative)	Distinguish and classify various types of polarized lights	12	Black Board
optical activity (optical rotation & specific rotation)	Identify the optical rotation in various substances	13	Black Board
Tutorial class & Review of Unit -I	Explain interference, diffraction and polarisation	14 -15	Black Board
UNIT – II **Fibre Optics**: Introduction, structure of optical fibre, principle of optical fibre	Define the basic principle and structure of optical fibers	16-17	Black Board
Numerical aperture, types of optical fibres	Determine the NA and describe the various types of fibers	18-19	Black Board

Fiberoptic sensors (intensity modulated temperature sensor, displacement sensor, & liquid level detector), applications	Discuss the applications of fibers	20 -21	Black Board
Lasers: Introduction, Laser characteristics, Spontaneous and Stimulated emissions, Population inversion, Pumping, Active system	Define and discuss different characteristics and requirements of lasers	22-23	Black Board
Nd: YAG laser, Gas (He-Ne) laser, Semiconductor (GaAs) laser	Explain the construction and working of solid state and gas lasers	24-26	Black Board
Applications of lasers	Discuss various applications of lasers	27	Black Board
Tutorial class & Review of Unit -II	Describe and explain optical fibers & lasers	28-30	Black Board
UNIT – III **Electromagnetism:** induced electric fields, displacement current,	Define induced electric fields and identify conduction and displacement currents	31-32	Black Board
Maxwell's equations-qualitative (integral &differential forms)-significance	Explain the basic laws of Electricity & Magnetism	33	Black Board
velocity of an electromagnetic wave equation in free space.	Apply basic laws of electricity & magnetism and show the velocity of EM waves is same as velocity of light	34	Black Board
Dielectrics& Magnetic Properties of Materials: Basic definitions, polar and non-polar dielectrics(qualitative)	Define basic definitions related to dielectrics	35-36	Black Board
types of polarizations- electronic, ionic polarisations (quantitative)	Explain various types of polarisations	37	Black Board
internal fields in a solids, Clausius-Mossotti equation, applications of dielectrics	Determine the internal field and Interpret the micro and macro level concepts in dielectrics Discuss different applications of dielectrics	38-39	Black Board
Magnetisation, permeability and susceptibility, origin of magnetic moment.	Define basic definitions related to magnetism and explain the origin of magnetic moment	40-41	Black Board
classification of magnetic materials, hysteresis curve,	Classify various magnetic materials, Describe hysteresis and its importance in ferromagnetic materials	42-43	Black Board
Soft & hard magnetic materials	Compare soft and hard magnetic materials	44	Black Board
Tutorial class & Review of Unit -III	Explain Dielectric and magnetic materials	45	Black Board

UNIT – IV Introduction to quantum physics, blackbody radiation	Define basic concepts in quantum mechanics	46	Black Board
Explanation using the photon concept (laws of blackbody radiation, Planck's radiation law-derivation)	Explain planck's block body radiation law	47	Black Board
photoelectric effect (Einstein's equation)	Describe and derive Einstein's photoelectric effect	48	Black Board
Compton effect (explanation, derivation)	Explain Compton effect	49	Black Board
verification of matter waves (Davisson–Germer experiment)	Describe and discuss the verification of debroglie's concept of matter waves	51	Black Board
Uncertainty principle-experimental verification (electron diffraction-single slit)	Explain and apply Heisenberg's uncertinity principle	52	Black Board
Schrodinger time independent wave equation, physical significance of wave function	Generate the Schrodinger's wave equations and its significance	53-54	Black Board
particle in box (one dimensional)	Apply wave equation for a particle in one dimensional box	55	Black Board
Revision in ALL Units	Review & Discuss the important topics of all units	56-58	Black Board
Discussion of Model question papers and Solutions	Practice the all the topics in the syllabus	59-60	Black Board

Course Coordinator **HOD**

LESSON PLAN

Academic Year : 2018-19
Year & Semester: I/IV B.Tech. I Sem.
Branch: Chemical Engineering
Subject Code & Name: CH 113; English for Communication Skills
Name of the faculty: K. Sudhakar

Lectures: 3 periods/week — Sessional Marks: 40
Semester End Exam Marks: 60
Semester End Exam: 3 hrs. — Credits: 3

Description/Topic	**Learning Outcomes**	**Teaching mode: BB**	**No. of classes**
UNIT - I		BB	1
Introduction	The importance of LSRW skills	BB	2
Synonyms & Antonyms	vocabulary	BB	3
Prefix And Suffix.	vocabulary	BB	4
One-word Substitution.	vocabulary	BB	5
Proposal Writing	Writing Skills	BB	6
E-mail Writing	Writing Skills	BB	7
Root Words	vocabulary	BB	8
Tenses.	Grammar	BB	9
Articles.	Grammar	BB	10
Subject-verb Concord	Grammar	BB	11
Note Making And Note Taking	Writing Skills	BB	12
Paragraph Writing	Writing Skills	BB	13
Essay Writing	Writing Skills	BB	14
			33

Course Coordinator — HOD

LESSON PLAN

Academic Year : 2018-19
Year & Semester: I/IV B.Tech. I Sem.
Branch: Chemical Engineering
Subject Code & Name: CH 152; English Language Communication Skills Lab
Name of the faculty: K. Sudhakar

Description/Topic	Learning Outcomes	Teaching mode: BB/LAB	No. of classes
Phonetics:		Lab	4
a) Pronunciation	Accuracy in pronunciation	Lab	
b) Intonation	Accuracy in pronunciation	Lab	
c) Stress	Speech dynamics	Lab	
d) Rhythm	Speech dynamics	Lab	
		Lab	
Listening Comprehension	Listening Skills	Lab	4
		Lab	
Conversations and Dialogues	Enhance effective communication	Lab	4
		Lab	
Interviews	Effective usage of language in interviews	Lab	4
		Lab	
Formal Presentations	Develop Presentation skills	Lab	4
		Lab	
Reading Comprehension	Reading Skills	Lab	4

Course Coordinator HOD

CH-213 PHYSICAL & ORGANIC CHEMISTRY (R-18)

Lecture: 3h/week Sessional Marks: 40
Sem End Exam: 3hrs Sem End
Exam Marks: 60 Credits: 2

Description/Topic	Learning outcomes	Teaching Mode: BB/LCD/OHP/Video	No. Of Classes
UNIT-I Chemical Kinetics- Rate Of Reaction , Order Of Reaction And Examples First Order Reaction And Derivation, Half Life ,units And Evaluation Of K	Able to learn order and rate of reaction of the chemical equations	BB	2
Second Order Reaction and Derivation, Factors Effecting Rate Of Reaction, Molecularity and Difference Between Order and molecularity	Knows the relation between concentration and rate of reaction	BB	2
Half Life And Problems, Catalysis - Def Of Catalyst and Catalysis and Types Of Catalysis With Examples	He learns half life & to calculate the half life	BB	2

Promoter and catalytic poisoning with examples	He knows what are promoter and catalytic poisoning of a chemical reaction	BB	1
Acid base catalysis with mechanism	Able to learn acid – base catalysis and mechanism	BB	1
Theories of catalysis	He knows mechanism of catalysis	BB	1
Characteristics of catalyst	He learns characteristics of catalyst	BB	1
UNIT-II Electro Chemistry- Electrode Potential, conductance, specific Conductance, Equivalent Conductance	He knows significance of specific Conductance, Equivalent Conductance	BB	2
Effect Of Dilution and Electrochemical Series And Significance	Able to learn how conductance changes with dilution	BB	2
Nernst Equation, derivation and Problems	Able to calculate electrode potentials	BB	1
Kohlrausch Law And its Applications	Knows conductance of a solution is the sum of conductance's of ions	BB	2
Corrosion - Introduction Of Corrosion Explanation Of Wet Theory With Diagrams And Examples	Able to learn the mechanism of corrosion of Iron	BB	2
Theory's Of Corrosion - Dry Corrosion And Types With Examples	He knows the reasons behind the corrosion of different metals	BB	1
Protection Methods - Cathodic Protection- Sacrificial Anodic Method And Its Applications	learns protection methods of metals	BB	2
Corrosion Inhibitors, types Of Corrosion Inhibitors And Design	knows how to inhibit corrosion using chemicals	BB	2
UNIT-III Introduction Of Benzene And Types Of Substitution Reactions	He knows substitution reactions of Benzene		
Electrophilic Substitution Reaction - General Mechanism Of Electrophilic Substitution Reaction, And Nitration Reaction With Mechanism	Able to learn mechanism of electrophilic substitution reactions	BB	2
Electrophilic Substitution Reactions- Sulphonation,frideal Craft Alkylation	Able to learn mechanism and predicts products with reactants	BB	1
Frideal Craft Acylation And Mechanism, Phenol Introduction, Acidic Character Of Phenols And Preparation Of Phenols	Knows the properties of phenols and acidic character of phenols	BB	2
Kolbe's Reaction And Reimer-tiemann Reactions With Mechanisms	Knows the conversation phenols to acids and aldehydes	BB	1
Some Other Reactions Of Phenol and Uses	knows characteristics reactions of phenols	BB	2
Toulene- Introduction, resonance Structure, Preparation And Properties Of Toulene.	learns methods of preparation and properties of toluene	BB	1
Aromaticity Conditions And Examples	Able to distinguish aromatic and non aromatic compounds	BB	2
UNIT-IV Polymers Introduction Of Polymers-polymer, monomer, Monomer Functionality, Degree Of Polymerization	He knows about polymers and types of polymers	BB	1
Types of polymerization – addition polymerization (polyethylene and poly propene)		BB	2

Condensation Polymerization- Nylon 66 Polyester Free Radical Mechanism Of Poly Ethylene	He learns how to prepare Nylon 66 and polyester	BB	1
Introduction Of Nitro Benzene, aniline And Resonance Structure If Nitro Benzene And Aniline	Able to know what are nitro compounds	BB	2
Reduction Reactions Of Nitro Benzene (Catalytic, neutral And Alkali Medium)	He knows reduction reactions of Nitro Benzene	BB	1
Aniline-introduction Of Aniline And Preparation Of Aniline (Hoffmann Degradation) And Alkylation Of Aniline	He learns preparation of aniline using Hoffmann method	BB	2
Benzene Di Azonium Chloride- Introduction And Preparation Of Benzene Diazonium Chloride (diazotisitation With Mechanism)	He knows mechanism of Diazonium chloride	BB	2
Properties Of Benzene Diazonium Chloride	He learns imp properties of diazonium salts	BB	1
Xylene And Oxidation Of Xylene	Able to learn what are xylenes and oxidation reactions of xylenes	BB	1

Course Coordinator **Signature of HOD**

CH 214 MATERIAL & ENERGY BALANCE COMPUTATIONS (R-18)

Lectures : 3 Hours / week *Sessional Marks : 40*

Semester End Exam Marks : 60

Semester End Exam : 3 hrs *Credits : 3*

Description / Topic	Learning outcomes	Teaching mode: BB/ LCD/ OHP/Video	No. Of classes
UNIT - I ; Stoichiometric and composition relationships: -CO1			
Units and dimensions,	Understanding conversion from one system to other system	BB	1
Conservation of mass,	Understanding law of conservation	BB	1
Stoichiometric relations	Writing the balanced Chemical equation	BB	1
methods of expressing the composition of mixtures and solutions,	Calculating the composition of mixtures and solutions,	BB	2
density and specific gravity.	Estimating the density and specific gravity	BB	1
Behavior of ideal gases:			1
Introduction,	Understanding the nature of the gases	BB	1
Applications of the Ideal-gas law,	Using the ideal gas law for calculating the volume, pressure, temperature etc	PPT	1
gaseous mixtures,	Understanding the Amagats and Avogadro	Video	2
volume changes with changes in composition, Pure –component method Partial – pressure method	Solving the problem by using the change in composition, pure component and partial pressures	BB	2
Gases in Chemical reactions.	Understanding the volumes and pressures in Chemical reactions	BB	1
UNIT- II - CO2			
Vapor Pressures:			
Introduction,	Understanding the vapor pressure	BB	1
Effect of temperature on vapor pressure,	Using the Clausis-Clapeyron equation for estimating the vapour pressure	BB	1
vapour pressure plots,	Developing the vapour pressure plots –Reference substance plots a) Equal –Pressure reference substance plots b) Equal – Temperature reference substance plots	LCD	2

vapour pressure of immiscible liquids,	Understanding the behavior of immiscible liquid and calculating the total pressure for immiscible system. Knowing boiling point depression	BB	1
Vapor pressure of solutions	Applying the Raoults Law for calculating the VP	Video	1
Non-volatile solutes	Understanding the effect of solutes and boiling point elevation	BB	1
Humidity and Saturation:			1
Introduction,	Understanding the concept of humidity or vapour	BB	1
vaporization process,	Designing of vaporization process, like dryer	LCD	2
condensation,	Designing of condenser	BB	2
wet-bulb and dry-bulb thermometry,	Understanding the wet bulb and dry bulb temperatures and their importance.	PPT	1
Psychrometric chart.	Using of psychometric charts for estimating the saturation, molal concentration	LCD	2
UNIT-III - CO3			
Material Balances: Introduction, Material balances without chemical reaction.	Understanding the material balance in a process flow diagram. Calculating the material balance for a unit operations like mixing	BB	2
Calculations involving dissolution and crystallization	Calculating the material balance for a crystallization operation	LCD	2
Material balances with chemical reaction.	understanding the material balance for a unit processes	BB	3
Basic concepts of inert, tie component,	Understanding the tie component and using the tie component for solving the problems.	BB	
Limiting reactant, excess reactant, selectivity, and yield.	Identifying limiting reactant and excess reactant. Calculating the percentage excess reactant and yield.	BB	1
Basic concepts of recycle bypass and purge streams.	Understand the recycle process and purge process with their importance	LCD	1
Material balances for non-reactive systems with recycle stream.	Estimation material balance for non-reactive systems with recycle stream.	LCD	1
Material balances for reactive systems with recycle stream.	Estimation material balance for non-reactive systems with recycle stream and purge processes.	BB	2
UNIT- IV-CO4			
Thermo Physics:			2
Introduction, Energy, energy balances,	Understanding the energy and energy balances.	BB	2
heat capacity of gases,	Estimating the heat capacity of gases	BB	1
heat capacities of solids,	Calculating the heat capacity of solids	BB	1
heat capacity of liquid and solutions,	Evaluating the heat capacity of liquid	BB	1

latent heats,	Understanding the phase changes and latent heat	BB	1
heat of vaporization,	Understanding the phase changes and latent heat of vaporization	LCD	1
evolution of enthalpy,	Estimating the enthalpy of a system.	BB	1
Enthalpy of humid air.	Estimating the enthalpy of a humid air.	LCD	1
Thermo Chemistry: Introduction, Thermo chemistry of solution,	Understanding the energy changes for solutions.	BB	1
Effect of pressure on heat of reaction,	Calculating the heat of reaction and its effect on pressure.	BB	2
Heat of reaction at constant pressure and at constant volume,	Calculating the heat of reaction using the standard data of heat formation and combustion.	BB	1
Effect of temperature on heat of reaction,	Understanding the temperature effect on heat of reaction and calculating the heat of reaction for different temperature inlet streams	BB	1
Temperature of reaction,	Understanding the reaction temperature and estimation.	LCD	1
Theoretical flame temperature,	Understanding the flame temperature and estimation.	BB	2
Actual flame temperature.	Understanding the action temperature and estimation.	BB	1
			62

Course Coordinator **HOD**

CH 204(R18) - LECTURE PLAN

S.No.	Topic		No. of Periods	Blooms taxonomy	Teaching methodology
		UNIT-I			
1	Introduction to Momentum Transfer	Understand what is momentum and how momentum transferred	1	Understand	Black board
2	Basic concepts – Units and Dimensions	Students are able to develop units and dimensions of all the quantities	2	Understand	Black board
3	Dimensional analysis	Understand the concept of dimensional analysis with problems	3	Understand and apply	Black board
4	Fluid statics and its applications-hydrostatic equilibrium,	Understand what is fluid and derive an expression for hydrostatic equilibrium	1	Understand	Black board
5	Applications of fluid statics- Manometers and decanters.	Applications of fluid statics by using manometers and decanters with problems	2	Apply	Black board
6	Fluid Flow Phenomena: Laminar flow, Shear rate, Shear stress,	Understand the concept of Reynolds experiment and understand the flow types	2	Understand	Black board
7	Rheological properties of fluids, Turbulence, Boundary layers	Understand Newton's law of viscosity and classification of fluids based on Reynolds number . learnt about the concept of boundary layer	2	Understand	Black board & you tube videos
		UNIT-II			
8	Basic Equations of Fluid Flow-Continuity,differential momentum balance and equation of motion.	Understand the basic equations and using the equations derive equations for continuity and equation of motion	3	Understand and apply	Black board
9	Macroscopic momentum balances, Mechanical Energy equations.	Understand the concept of macroscopic momentum balance and derive mechanical energy balance equation	2	Understand	Black board
10	Incompressible Flow in Pipes and Channels: shear stress and skin friction in pipes,	Understand the concept of incompressible fluids and lear how these fluids behaves in pipes and channels	2	Understand	
11	laminar flow in pipes and channels, turbulent flow in pipes and channels	Derive an expression for the laminar flow of incompressible fluids in pipes and channels	2	Apply	Black board
12	Friction factor, flow through channels of noncircular cross section	Understand the concept of friction factor and derive a expressions for flow through non circular channels with the help of equivalent diameter with hydraulic radius	2	Evaluate	Black board
13	Friction from changes in velocity or direction, flow of liquids in thin layers.	Understand and evaluate how Friction changes by change in velocity or direction, flow of liquids in thin layers.	2	Evaluate	Black board
		UNIT – III			

14	Flow of Compressible Fluids: Continuity equation	Understand the concept of Flow of Compressible Fluids: Continuity equation	2	Understand	Black board
15	processes of compressible flow, isentropic flow through nozzles, adiabatic	Derive the processes of compressible flow, Isentropic Frictional flow flow through nozzles, adiabatic	2	Understand	Black board
16	Frictional flow and isothermal frictional flow.	Derive equations for isothermal frictional flow.	2	Understand	Black board
17	Flow Past Immersed Bodies: drag and drag coefficient	Understand the concept of flow past immersed bodies and understand the terms Drag and drag coefficient	2	Understand	Black board
18	Friction in flow through beds of solids	Derive an expression for pressure drop across the bed of solids for a wide range of Reynolds number.	2	Understand	Black board
19	motion of particles through fluids,	Derive an expression for the motion of particles through fluids	2	Understand	Black board
20	Fluidization, mechanism of fluidization, pressure drops in fluidization, applications of fluidization.	Understand the concept of fluidization and derive an expression for pressure drop across a fluidized bed and its applications.	3	Understand and Analyze	Black board & video lecture
		UNIT-IV			
21	Transportation of Fluids: Pipes, fittings, valves- gate valves and globe valves, plug cocks and ball valves, check valves.	Understand the Transportation of Fluids: Pipes, fittings, valves- gate valves and globe valves, plug cocks and ball valves, check valves.	2	Understand	Black board & video lecture
22	Pumps: Types, Selection, Applications, Performance characteristics of centrifugal and Reciprocating pumps.	Studnets are able to understand the working of pumps and different types of pumps and performance and characteristics of centrifugal pump and reciprocating pumps	3	Understand	Black board & video lecture
23	Comparison of devices for moving fluids, constructional features and working principle of jet ejectors, compressors.	Understand the principle and working of jet ejectors and compressors and their devices .	3	Understand	Black board & video lecture
24	Metering of Fluid: Constructional features and working principles of: venturi meter, orifice meter, rota meters	Understand the Constructional features and working principles of: venturi meter, orifice meter, rota meters	1	Analyze	Black board
25	Pitot tube, target meters, vortex-shedding meter, turbine meter, magnetic meters.	Understand the Constructional features and working principles of Pitot tube, target meters, vortex-shedding meter, turbine meter, magnetic meters.	2	Analyze	Black board & video lecture
26	Application of Bernoulli equation: Venturi meter and Orifice meter,	Problems on Venturi meter and Orifice meter,	2	Analyze	Black board & video lecture

27	flow rate calculations from the readings of venture meter, orifice meter and Pitot tube.	flow rate calculations from the readings of venture meter, orifice meter and Pitot tube.	2	Analyze	Black board & video lecture
28	Revision		2		Black board
	Total		**60**		

Course Coordinator **HOD**

CH205-(R18) Mechanical Operations

Unit.No	Topic of the syllabus to be covered	Learning outcomes	Teaching mode BB/ OHP /LCD	Hours required		Total no of hours (cumulative)	Expected date of completion (for each unit)
				Lectures	Tutorial		
1.	Characterization of solid particles: shape and size,	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB**	2		2	
	mixed particle size analysis, specific surface of mixtures,	Students will be able to understand the role and relevance of Chemical EngineeringThermodynamics	**BB**	2		2	
	average particle size, number of particles in mixture,	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB**	2		2	
	screen analysis and standard screen series,	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB/ LCD**	1		1	
	size measurements with fine paticles.	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB**	1		1	
	Properties of masses of particulate, storage and conveying of solids	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB/ LCD**	1		1	
2.	Characteristics of comminuted products, energy and power requirements in comminution,	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB**	1		1	
	Crushing laws and work index.	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB/ LCD**	1	1	2	
	Equipment for size reduction;	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB/ LCD**	1	1	2	
	crushers, grinders, ultra fine grinders	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB/ LCD**	1		1	
	Cutting machines.	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB/ LCD**	1	1	2	

	Open circuit and closed circuit operation	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB/ LCD**	1		1	
	energy consumption, size enlargement.	Students will be able to understand the role and relevance of Chemical Engineering Thermodynamics	**BB**	1		1	
3.	stationary, grizzlying, gyratory,	Students will be able to Understand and analyze processes such as isothermal	**BB/ LCD**	1		1	
	vibrating, revolving screens.	Students will be able to Understand and analyze processes such as isothermal	**BB/ LCD**	1		1	
	Comparison of ideal and actual screens, material balances over screen	Students will be able to Understand and analyze processes such as isothermal	**BB**	1		1	
	Capacity and effectiveness of Screens	Students will be able to Understand and analyze processes such as isothermal	**BB**	1		1	
	Magnetic separators	Students will be able to Understand and analyze processes such as isothermal	**BB/ LCD**	1		1	
	Electro- static separators and froth flotation	Students will be able to Understand and analyze processes such as isothermal	**BB/ LCD**	1		1	
4.	cake filters, centrifugal filters,	Students will be able to explain the property relation of homogeneous phases	**BB/ LCD**	1	1	2	
	filter media, filter aids. Principles of Cake filtration	Students will be able to explain the property relation of homogeneous phases	**BB/ LCD**	1	1	2	
	Pressure drop calculations, constant rate filtration	Students will be able to explain the property relation of homogeneous phases	**BB**	1	1	2	
	constant pressure filtration. Clarifying filters	Students will be able to explain the property relation of homogeneous phases	**BB**	1		1	
	liquid clarification, gas cleaning	Students will be able to explain the property relation of homogeneous phases	**BB/ LCD**	1	1	2	
	principle of clarification	Students will be able to explain the property relation of homogeneous phases	**BB**	1	1	2	
	Gravity classifiers, sorting classifier; sink and float methods	Students will be able to understand and Analyze steam power cycles; refrigeration cycles	**BB/ LCD**	1	1	2	
	differential settling methods, clarifiers and thickeners	Students will be able to understand and Analyze steam power cycles; refrigeration cycles	**BB**	1	1	2	
	Centrifugal sedimentation processes; cyclones, hydroclones	Students will be able to understand and Analyze steam power cycles; refrigeration cycles	**BB/ LCD**	1	1	2	
	centrifugal decanters, jigging and tabling	Students will be able to understand and Analyze steam power cycles; refrigeration cycles	**BB/ LCD**	1		1	

	Purpose of agitation, agitation vessels	Students will be able to understand and Analyze steam power cycles; refrigeration cycles	**BB/ LCD**	1		1	
	power consumption in agitated vessels. Blending and mixing.	Students will be able to understand and Analyze steam power cycles; refrigeration cycles	**BB/ LCD**	1		1	

Course Coordinator **Head of the Department**

MASTER OF COMPUTER APLICATIONS

AUTONOMOUS (R17) REGULATIONS

I YEAR I SEMESTER-AUTONOMOUS

LESSON PLAN

Academic Year : 2017-2018

Year & Semester : I Year I Semester

Branch : Computer Applications

Subject Code & Name : CA111 – Problem Solving with C

Name of Faculty : Dr. K. Karteeka Pavan & Dr. Ch.Sudha Sree

UNIT NO	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/DB / LCD/OHP)	Hours Required		Total No. of Hours (cumulative)	Expected date of completion (for each unit) by HOD	Review/ Remarks (BY HOD)
				Lecture	Tutorial			
I	Introduction To Programming, Flowcharts and Examples	1.Develop algorithms & flowcharts for real problems 2.Demonstrate Debugging of C program 3.Able to design input and output statements	BB	1		1		
	Algorithms and examples, Pseudocodes		BB	2		3		
	Programming languages types, Introduction to C, Charactyeristics		BB	1		4		
	Tokens, C character set, A simple C program, Identifiers and Keywords,Variables and constants, Expressions, Variable declarations		BB	2		6		
	Arithmetic Operators, Unary Operators, Relational and Logical Operators, Assignment Operators with examples		BB	2		8		
	The Conditional Operator, Library Functions. Datatypes		BB	2		10		
	I/O Functions, examples, simple programs, debugging		BB	2		12		
	Preliminaries in brief, Examples		PPT		2	14		

II	If-Else statement structure, syntax examples	1.Identify and use suitable control structures for problem solving in C 2.Design modular programs using the concepts of functions	BB	1		15		
	If-else examples , comparison with conditional operator		BB		1	16		
	Switch-case structure, syntax;		BB	1		17		
	while Statement, do-while Statement break and continue		BB	1		18		
	Problems using While		BB	1		19		
	For statement and examples		BB	1		20		
	Infinite lops, nested loops, goto		BB	1		21		
	More looping examples		BB	2		23		
	Functions:Definition, Declaration, Passing Arguments, Examples		BB	2		25		
	Storage classes and More examples using functions		BB	2		27		
	Hacker Earth / Rank Problems		BB		2	29		
III	Arrays: Definition, Declaration, Initialization, Accessing & storing the elements	1. Solve the problems with appropriate data types and structures 2. Design modular programs using the concepts of functions	BB	1		30		
	Examples on Arrays		BB	1		31		
	Examples on arrays		BB	1		32		
	Two dimensional arrays:Definition, Declaration, Initialization, Accessing & storing the elements.		BB	1		33		
	Examples on two d arrays		BB	2		35		
	Examples on 2d arrays		BB		1	36		
	Pointers and examples		BB	1		37		
	Comparison with arrays, Arrays of pointers, pointers to array		BB	1		38		
	Dynamic allocation Advantages, passing to functions		BB	1		38		
	Examples		BB	2		41		
	Hacker earth Problems		BB		2	43		

IV	Strings: Declaration, Initialization; Problems	Able to design efficient solutions for real world problems with concepts of structures, unions	BB	1		44		
	Library functions		BB	1		45		
	Pointers and strings		BB	1		46		
	Structures and unions		BB	1		47		
	Nested structures; passing to functions		BB	1		48		
	More examples		BB	2		50		
	Self- referential structures and examples		BB	2		52		
V	Files, Opening and Closing a Data File, Reading and Writing a Data File	Design well-structured programs using file handling features in C	BB	2		54		
	Unformatted Data Files		BB	2		56		
	Command line arguments		BB	2		58		
	Examples		BB		2	60		

1.

2. Ch. Sudhakar

Signature of the Faculty

Signature of the HOD

Date: 6/8/2017

LESSON PLAN

Academic Year : 2017-2018

Year & Semester : I Year I Semester

Branch : Computer Applications

Subject Code & Name : CA112 & Computer Organization

Name of Faculty : Sri M.Brahmaiah & Ms. M.Vasavi

UNIT NO	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/DB/LCD/OHP)	Hours Required		Total No. of Hours (cumulative)	Expected date of completion (for each unit) by HOD	Review/ Remarks (BY HOD)
				Lecture	Tutorial			
I	Digital Computers	Describe basic structure of computer and draw logic circuits	BB	1		1		
	Logic Gates, Boolean Algebra		BB	1		2		
	Map Simplification		BB	1		3		
	Combinational Circuits		BB	1		4		
	Flip-Flops		BB	2		6		
	Sequential Circuits		BB	1		7		
	Integrated Circuits, Decoders		BB	1		8		
	Multiplexers, Registers		BB	1		9		
	Shift Registers		BB	1		10		
	Binary Counters		BB	1		11		
	Memory Unit.		LCD	1		12		
II	Data Types, Complements	Work with different types of data representations, computer arithmetic operations	BB	1		13		
	Fixed Point Representation		BB	1		14		
	Floating Point Representation,		BB	1		15		
	Other Binary Codes, error Detection Codes.		BB	1		16		
	Register Transfer Languages, Register		BB	1		17		

	Transfer							
	Bus and Memory Transfer		LCD	2		19		
	Arithmetic Micro Operations		BB	1		20		
	Logic Micro Operations		BB	1		21		
	Shift Micro Operations		BB	1		22		
	Arithmetic Logic Shift Unit		LCD	2		24		
III	Instruction Codes	1. Generate different types of micro operations. 2.Summarize the control unit operations	BB	1		25		
	Computer Registers		BB	1		26		
	Computer Instructions		BB	1		27		
	Timing and Control		BB	1		28		
	Instruction Cycle		BB	1		29		
	Memory Reference Instructions		BB	1		30		
	Input-Output and Interrupt		BB	1		31		
	Control Memory, Address Sequencing		LCD	1		32		
	Micro Program Example		BB	2		34		
	Design of Control Unit.		BB	2		36		
IV	Introduction, General Register Organization	1. Learn instruction formats, instruction types, addressing modes of CPU. 2.Learn implementation of arithmetic operations in computer hardware	LCD	1		37		
	Stack Organization		BB	1		38		
	Instruction Format		BB	1		39		
	Addressing Modes		LCD	1		40		
	Data Transfer and Manipulation		BB	1		41		
	Program Control		LCD	1		42		
	Addition		BB	1		43		
	Subtraction		BB	1		44		
	Multiplication		BB	2		45		
	Division Algorithms		BB	2		46		
	Floating Point Arithmetic Operations.		BB	2		48		

V	Peripheral Devices	1.Learn concept of I/O organization, 2.Create memory organization and classify the concept of cache and its mapping techniques.	LCD	1		49		
	Input-Output Interface		BB	1		50		
	Asynchronous Data Transfer		LCD	2		52		
	Modes of Transfer		BB	1		53		
	Priority Interrupt		BB	2		55		
	Memory Hierarchy, Main Memory		LCD	1		56		
	Auxiliary memory, Associative Memory		LCD	2		58		
	Cache Memory.		LCD	2		60		

1. H. Brahmani

2. M. Vijaya

Signature of the Faculty

Signature of the HOD

Date: 6/8/2017

LESSON PLAN

Academic Year : 2017-2018

Year & Semester : I Year I Semester

Branch : MCA

Subject Code & Name : CA113& Operating Systems

Name of Faculty : Dr.Ch.Suneetha & Dr.M.Sridhar

UNIT NO	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/DB/LCD/OHP)	Hours Required		Total No. of Hours(cumulative)	Expected date of completion (for each unit) by HOD	Review/Remarks (BY HOD)
				Lecture	Tutorial			
1	What Operating Systems Do, Computer-System Organization, Computer-System Architecture	Understand the basic computer system organization, operating system structures and process concept.	LCD	1		1		
	Operating-System Structure, Operating-System Operations		LCD	1		2		
	Process Management, Memory Management		LCD	1		3		
	Storage Management, Protection and Security		LCD	1		4		
	Kernel Data Structures, Computing Environments		LCD	1		5		
	Open-Source Operating Systems, Operating-System Services, User and Operating-		LCD	1		6		

	System, Interface							
	System Calls, Types of System Calls, System Programs		LCD	1		7		
	Operating-System Structure, System Boot, Process Concept		LCD	1		8		
	Process Scheduling, Operations on Processes		LCD	1		9		
	Inter-process Communication		LCD	1		10		
	Examples of IPC Systems		LCD	1		11		
	Communication in Client–Server Systems		LCD	1		12		
II	Overview, Multi-core Programming	Understand the concept of multithreaded programming, process scheduling and synchronization.	LCD	1		13		
	Multithreading Models, Thread Libraries		LCD	1		14		
	Implicit Threading		LCD	1		15		
	Threading Issues		LCD	1		16		
	Basic Concepts, Scheduling Criteria		LCD	1		17		
	Scheduling Algorithms		LCD	2		19		
	Thread Scheduling		LCD	1		20		
	Multiple-Processor Scheduling, Real-Time CPU		LCD	1		21		

	Scheduling.							
	Background, The Critical-Section Problem		LCD	1		22		
	Peterson's Solution, Synchronization Hardware		LCD	1		23		
	Mutex Locks, Semaphores		LCD	1		24		
	Classic Problems of Synchronization		LCD	1		25		
	Monitors, Synchronization Examples		LCD	1		26		
	System Model, Deadlock Characterization		LCD	1		27		
III	Methods for Handling Deadlocks, Deadlock prevention	1.Able to learn various deadlock handling methods, memory-management techniques 2. Describe the benefits of a virtual memory system.	LCD	1		28		
	Deadlock Avoidance		LCD	1		29		
	Deadlock Detection		LCD	1		30		
	Recovery from Deadlock, Background, Swapping		LCD	1		31		
	Segmentation , Paging		LCD	1		32		
	Structure of the Page Table		LCD	1		33		
	Background, Demand Paging		LCD	1		34		
	Copy-on-Write,		LCD	1		35		

	Page Replacement		LCD	2		37		
	Page Replacement		LCD	1		38		
	Allocation of Frames		LCD	1		39		
	Thrashing		LCD	1		40		
IV	File Concept, Access Methods	Understand the file system implementation and mass-storage structure	LCD	1		41		
	Directory and Disk Structure		LCD	1		42		
	File-System Mounting		LCD	1		43		
	File Sharing, Protection		LCD	1		44		
	File-System Structure		LCD	1		45		
	File-System Implementati -on		LCD	1		46		
	Directory Implementati -on		LCD	1		47		
	Allocation Methods, and Free-Space Management.		LCD	1		48		
	Overview of Mass-Storage Structure, Disk Structure		LCD	1		49		
	Disk Attachment, Disk Scheduling		LCD	1		50		
	Disk Management, Swap-Space Management		LCD	1		51		
	RAID Structure		LCD	1		52		
V	Overview, I/O Hardware, Application I/O Interface	Understand the structure of I/O subsystem, design principles underlying Linux and	LCD	1		53		
	Kernel I/O Subsystem,		LCD	1		54		

	Transforming I/O Requests to Hardware Operations	Windows 7 operating-systems.						
	Linux History, Design Principles, Kernel Modules, Process Management		LCD	1		55		
	Scheduling, Memory Management, File Systems, Input and Output		LCD	1		56		
	Inter-process Communicati on, Network Structure		LCD	1		57		
	History, Design Principles, System Components		LCD	1		58		
	Terminal Services and Fast User Switching		LCD	1		59		
	File System, Networking		LCD	1		60		

1. Ch Sunetha

2. N. Lavanya

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Date: 6/8/2017

LESSON PLAN

Academic Year : 2017-2018

Year & Semester : I Year I Semester

Branch : MCA

Subject Code & Name : CA114 & Discrete Mathematical Structures

Name of Faculty : Smt. I.Naga Padmaja & Smt.M. Chaitanya

UNIT NO	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/DB/ LCD/OHP)	Hours Required		Total No. of Hours(cumul ative)	Expected date of completion (for each unit) by HOD	Revie w/Re marks (BY HOD)
				Lecture	Tutorial			
I	Propositional Logic, Propositional Equivalences	construct simple mathematical proofs and possess the ability to verify them	BB	2		2		
	Predicates and Quantifiers		BB	2		4		
	Nested Quantifiers		BB	2		6		
	Rules of Inference		BB	2		8		
	Normal Forms		BB	2		10		
	Proof Methods and Strategy		BB	2		12		
II	Sets	Understand the basic principles of sets and operations in sets	BB	1		12		
	Set Operations		BB	2		14		
	Functions		BB	1		15		
	Sequences and Summations		BB	2		17		
	Mathematical Induction		BB	2		19		
	Strong Induction		BB	1		20		
	Well-Ordering		BB	1		21		
	Recursive Definitions		BB	1		22		
	Structural Induction		BB	1		23		
	Recursive Algorithms		BB	1		24		
III	The Basics of Counting	Apply counting principles to determine probabilities	BB	2		26		
	The Pigeon Hole Principle		BB	2		28		
	Permutations		BB	1		29		
	Combinations		BB	1		30		
	Binomial Coefficients		BB	1		31		

	Generalized Permutations and Combinations		BB	1		32		
	Recurrence Relations		BB	1		33		
	Solving Linear Recurrence Relations		BB	1		34		
	Generating Functions		BB	1		35		
	Inclusion–Exclusion		BB	1		36		
IV	Relations and Their Properties	Demonstrate an understanding of relations and functions and be able to determine their properties	BB	2		38		
	n-ary Relations and Their Applications		BB	2		40		
	Representing Relations		BB	1		41		
	Closures of Relations		BB	2		43		
	Equivalence Relations		BB	1		44		
	Partial Orderings		BB	1		45		
	Languages and Grammars		BB	1		46		
	Finite-State Machines with Output		BB	1		47		
	Finite-State Machines with No Output		BB	1		48		
V	Graphs and Graph Models	Demonstrate different traversal methods for trees and graphs	BB	1		49		
	Graph Terminology and Special Types of Graphs		BB	1		50		
	Representing Graphs		BB	1		51		
	Graph Isomorphism's		BB	1		52		
	Connectivity		BB	1		53		
	Euler and Hamilton Paths		BB	1		54		
	Shortest Path Problems		BB	1		55		
	Planar Graphs, Graph Coloring		BB	1		56		
	Introduction to		BB	1		57		

	Trees	-						
	Applications of Trees		BB	1		58		
	Tree Traversal		BB	1		59		
	Spanning Trees, Minimum Spanning Trees		BB	1		60		

1. G. Nagpad
2. M. Chaitanya

Signature of the Faculty

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Date: 6/8/2017

LESSON PLAN

Academic Year : 2017-18

Year & Semester : I year I semester

Branch : MCA

Subject Code & Name : CA 115 - Accountancy and Financial Management

Name of Faculty : Dr. M.Manjusha & Mr. D.Chakradhar

Unit No	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/LCD /OHP)	Hours Required	Total No. of Hours (cumulative)	Expected date of completion (for each unit) by HOD	Review/ Remarks (BY HOD)
Unit-I							
Financial Accounting – I							
1	Accounting Concept, Accounting Vs Book Keeping	Understand the Basic concepts accounting and identify the differences between accounting & Bookkeeping	BB	1	1		
2	Advantages and Limitations of Accounting	Understand the advantages and limitations of Accounting	BB	1	2		
3	GAAP	Identify the accounting principles through concepts and conventions	BB	4	6		
4	Accounting Standards	Understanding the Accounting Standards	BB	2	8		
5	Double-Entry System	Understand the concept of Double-Entry System	BB	2	10		
6	Classification of accounts,	Gain knowledge in classification of accounts	BB	1	11		

7	accounting equation and accounting process	understand the concept of accounting equation and Process	BB	1	12		
Unit-II							
Financial Accounting – II							
8	Introduction on Journal And Ledger	Understand the concepts of Journal and Ledger	BB	2	14		
9	Problems on journal and ledger	Apply the knowledge in journal and ledger preparation	BB	4	18		
10	Introduction on Trail balance	Understand the concept of trail balance	BB	1	19		
11	Problems on trial balance	Apply the knowledge in trail balance preparation	BB	1	20		
12	Introduction on final accounts	Understanding the concept of final accounts preparation with formats	BB	1	21		
13	Problems on final accounts with and without adjustments	Apply the knowledge in Final accounts	BB	6	27		
UNIT-III							
Cost Accounting							
14	Cost introduction	Understand the concept of Cost Accounting	BB	1	28		
15	Components and costing for various industries	Demonstrate an understanding of the components of costing in various industries	BB	1	29		
16	Marginal costing	Understand the concept of marginal costing	BB	1	30		
17	Problems on BEP	Apply the knowledge in calculations of BEP at various	BB	2	32		

		industries					
18	Budget and budgetary control	Understand the concept of budget and budgetary control	BB	2	34		
19	Types of budgets and current trends in budgeting	Evaluate the concept of budget and evaluate the trends in budgeting	BB	2	36		
20	Standard costing	Demonstrate the knowledge on standard costing	BB	1	37		
21	Problems in variance analysis	Apply the knowledge in variance analysis	BB	4	41		
Unit-IV							
Financial Management							
22	Nature and scope of financial Management	Understand the concept of financial management	BB	1	42		
23	Goals of financial management	Evaluate the goals of financial management	BB	1	43		
24	Functions of financial manager	Evaluate the functions of financial manager	BB	1	44		
25	Time value of money	Understand the concept of time value of money	BB	1	45		
26	Financial Decisions	Analyze the financial decisions	BB	1	46		
27	Financial Statement analysis	Understand the concept of financial statement analysis	BB	1	47		
28	Ratios analysis	Apply the knowledge in Ratio analysis	BB	3	50		
29	Changes in working capital problems	Apply the knowledge in identification of changes in working capital	BB	2	52		
30	Funds flow and cash flow analysis differences	Analyze the differences between Funds Flow and Cash Flow	BB	1	53		

UNIT-V							
Working Capital Management							
31	Concept and importance of Working Capital	Understand the concept of and importance of working capital	BB	1	54		
32	Components and determinants of working capital	Understand the components and determinants of working capital	BB	1	55		
33	Financing of working capital	Evaluate the sources of working capital	BB	1	56		
34	Estimating working capital requirements	Create the estimation of working capital requirements	BB	1	57		
35	Inventory management	Understand the concept of Inventory Management	BB	1	58		
36	Receivables management	Understand the concept of Receivables Management	BB	1	59		
37	Liquidity management	Understand the concept of Liquidity Management	BB	1	60		

1. M.
2. D. Chakri.

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Date: 6/8/2017

I YEAR II SEMESTER

LESSON PLAN

Academic Year : 2017-2018

Year & Semester : I Year II Semester

Branch : COMPUTER APPLICATIONS

Subject Code & Name : CA121 – Data Structures in Python

Name of Faculty : Dr. K. Karteeka Pavan & Dr.M.Sridhar

UNIT NO	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/DB / LCD/OHP)	Hours Required		Total No. of Hours (cumulative)	Expected date of completion (for each unit) by HOD	Review/ Remarks (BY HOD)
				Lecture	Tutorial			
I	Objects in Python - Expressions, Operators, and Precedence	1. Learn basics of python 2. Solve problems by applying object orientation principles using python	BB	1		1		
	Control Flow		BB	1		2		
	Functions		BB	1		3		
	Input and Output - Exception Handling		BB	1		4		
	Iterators and Generators		BB	1		5		
	Scopes and Namespaces- Modules and the Import Statement		BB	1		6		
	OOPrinciples, and Patterns - Software Development		BB	1		7		
	Class Definitions and designing		BB	1		8		
	Operator overloading		BB	1		9		
	Inheritance		BB	1		10		
	Name spaces and copying		BB	1		11		
	Problems solving using python		BB	1		12		
	Problems using Python		BB		1	13		
II	Lists and examples	1. Demonstrate various data structures in python. 2.Compare and contrast with C structures 3.Implement stack	BB	1		14		
	Tuples and examples		BB	1		15		
	Dictionaries and examples		BB	1		16		
	Files and examples		BB	1		17		
	Array based sequences and examples		BB	1		18		
	Stack - ADT		BB	1		19		
	Postficx evaluation		BB	1		20		

	Infix to postfix conversion	and queues structures	BB	1		21		
	Queue ADT		BB	1		22		
	Circular Queue		BB	1		23		
	Double ended queue		BB	1		24		
III	Single linked list - ADT	1.Implement various linear data structures and applications 2.Demonstrate various sorting methods	BB	2		26		
	Operations on SLL		BB	2		28		
	Doubly linked list ADT		BB	1		29		
	List concatenation, split, reverse the list and more examples		BB	2		31		
	Merging, Polynomial operations		BB	2		33		
	Insertion and selection sort, Bucket and Radixc sort		BB	1		34		
	Merge sort		BB	1		35		
	Quick sort		BB	1		36		
IV	Trees: introduction, general and binary trees	1.Solve problems using Tree data structures 2.Demonstrate various Sorting, Searching and Hashing techniques	BB	1		37		
	Binary tree-ADT		BB	2		39		
	Binary search tree-ADT		BB	2		41		
	Expression tree		BB	1		42		
	AVL tree		BB	2		44		
	Priority queue-ADT		BB	1		45		
	Heap sort		BB	1		46		
	Hashing		BB	2		48		
V	Python Framework for Balancing Search Trees - AVL Trees	Solve problems using Graphs	BB	2		50		
	Graphs - Data Structures for Graphs, Graph Traversals		BB	2		52		
	Shortest Paths		BB	2		54		
	Minimum Spanning Trees.		BB	2		56		
	Problem solving online		BB		4	60		

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Date: 3.1.18

LESSON PLAN

Academic Year : 2017-2018

Year & Semester : I Year II Semester

Branch : COMPUTER APPLICATIONS

Subject Code & Name : CA122 & Database Management Systems

Name of Faculty : Ms. I. Naga Padmaja & Sri M.Brahmaiah

UNIT NO	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/DB/ LCD/ OHP)	Hours Required		Total No. of Hours (cumulative)	Expected date of completion (for each unit) by HOD	Review/ Remarks (BY HOD)
				Lecture	Tutorial			
I	Characteristics of the Database Approach	Differentiate between the File Processing System and Database and understand the advantages of Database.	BB	1		1		
	Actors on the scene, Workers behind the scene		BB	1		2		
	Advantages of the using the DBMS Approach.		BB	1		3		
	Three Schema architecture and Data Independence,		LCD	1		4		
	Centralized and Client/Server Architecture for DBMS,		LCD	1		5		
	Classification of Database Management Systems.		LCD	1		6		
	Conceptual Data models, Entity Types, Entity Sets, Attributes and Keys,		LCD	1		7		
	Relationship types, Relationship sets, roles and structural Constraints,		LCD	1		8		
	Weak Entity types, Relationship Types of Degree Higher than Two,		LCD	1		9		
	Specialization and Generalization,		LCD	1		10		
	Constraints and		LCD	1		11		

	Characteristics of Specialization and Generalization Hierarchies,	-						
	Modeling of Union Types using Categories,		LCD	1		12		
II	Relational Model Concepts,	Understand Relational model constraints and able to write queries in Relational Algebra	LCD	1		13		
	Relational Model Constraints and Relational Database Schemas,		LCD	1		14		
	Update Operations, Transactions and Dealing with Constraint Violations.		LCD	1		15		
	Unary Relational Operations: SELECT and PROJECT,		LCD	1		16		
	Relational Algebra Operations from set Theory		LCD	1		17		
	Binary Relational Operations: JOIN and DIVISION, Additional Relational Operations, Examples,		BB	1		18		
	The Tuple Calculus and Domain Calculus.		LCD	1		19		
	SQL: Schema Definition, Constraints, Queries and Views:		BB	1		20		
	SQL Data Definitions and Data Types, Specifying Constraints in SQL,		BB	1		21		
	Schema Change Statements on SQL,		BB	1		22		
	INSERT, DELETE and UPDATE statements in SQL,		BB	1		23		
	Triggers and Views.		BB	1		24		
	Informal Design Guidelines for Relation Schemas,	Design database by using Normalization principles.	BB	1		25		
	Functional dependencies,		LCD	1		26		

III	Normal Forms Based in Primary Keys,		BB	1		27		
	General Definitions of Second and Third Normal Forms,		BB	2		29		
	Boyce-Codd Normal Form.		LCD	1		30		
	Properties of Relational Decompositions, Algorithms		LCD	2		32		
	Relational Database Schema Design		LCD	1		33		
	Multivalued Dependencies and Fourth Normal Form,		BB	2		35		
	Join Dependencies and Fifth Normal Form,		LCD	1		36		
IV	Introduction to Transaction Processing,	Understand the concept of Transaction and different types of Locking Techniques	LCD	1		37		
	Transaction and System Concepts, Desirable Properties of Transactions,		LCD	1		38		
	Characterizing Schedules Based on Recoverability,		LCD	1		39		
	Characterizing schedules Based on Serializability.			1		40		
	Two Phase Locking Techniques for Concurrency Control,		LCD	1		41		
	Concurrency Control Based on Timestamp Ordering,		LCD	1		42		
	Multiversion Concurrency control techniques		BB	1		43		
	Validation concurrency control Techniques		LCD	1		44		
	Granularity of Data Items and multiple Granularity Locking.		LCD	1		45		
	Distributed Database Concepts,		LCD	1		46		
	Data Fragmentation, Replication, and		LCD	1		47		

	allocation Techniques							
	An Overview of 3 Tier Client Server Architecture.		LCD	1		48		
V	Secondary Storage Devices, Buffering of Blocks, Placing file Records on Disk,.	Understand the different types of storage and data accessing methods.	LCD	2		50		
	Operations on Files, Files of Unordered Records, Files of Ordered Records,		LCD	2		52		
	Hashing Techniques, Parallelizing Disk Access using RAID Technology		LCD	2		54		
	Types of Single-Level Ordered Indexes,		LCD	2		56		
	Multilevel Indexes, Dynamic Multilevel Indexes Using B-Trees and B+ Trees,		LCD	2		58		
	Indexes on Multiple Keys, Other Types of Indexes.		LCD	2		60		

1. D. Nagpal
2. M. Bhalwar

Signature of the Faculty

Signature of the HOD

Date: 4.1.18

LESSON PLAN

Academic Year : 2017-2018

Year & Semester : I Year II Semester

Subject Code & Name : CA123 & COMPUTER NETWORKS

Name of Faculty : Sri Ch.Srinivasa Rao & Smt.M.Vasavi

UNIT NO	Topic of syllabus covered	Learning Outcomes	Teaching Mode	Hours Required		Total No. of Hours(cumulative)	Expected date of completion (for each unit) by HOD	Review/Remarks (BY HOD)
				L	T			
I	Uses of Computer Networks	Understand the functions of each layer and design issues in OSI& TCP/IP model	BB	3		3		
	Network Hardware		BB	3		6		
	Network Software		BB	3		9		
	Reference Models		PPT	3		12		
II	Guided Transmission Media	Understand the types of guided transmission media and describe the functions of data link layer and its protocols.	BB	2		14		
	Data link layer Design issues		BB	2		16		
	Error detection and correction		BB	3		19		
	Elementary Data link protocols		PPT	2		21		
	Sliding Window protocols		PPT	3		24		
III	Ethernet	Able to analyse different IEEE 802 standards and data link layer switching.	BB	3		27		
	Wireless LAN's		PPT	3		30		
	Bluetooth		PPT	3		33		
	Data Link Layer Switching		BB	3		36		
IV	Network Layer Design Issues	To describe the services of transport layer and internals of protocols such as TCP and UDP	PPT	1		37		
	Routing Algorithms		BB	3		40		
	The transport layer services		PPT	1		41		
	Elements of Transport Protocol		BB	3		44		

	Transport Protocol							
	The Internet Transport Protocol : UDP		BB	1		45		
	The Internet Transport Protocol: TCP		BB	3		48		
V	Domain Name System(DNS)	To describe the functions of application layer protocols and concept of multimedia	PPT	3		51		
	Electronic Mail		BB	4		55		
	The World Wide Web		BB	4		59		

1.
2. M.Vetse

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Date: 4.1.2018

LESSON PLAN

Academic Year : 2017-2018

Year & Semester : I Year II Semester

Branch : Master of Computer Applications

Subject Code & Name : CA124 & Probability & Statistics

Name of Faculty : Dr.B.Srinivasa Rao

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode (BB)/ LCD)	Hours Required Lecture (L) / Tutorial (T)		Total No. of Hours (cumulative)	Expected date of Topic to be covered	Review/ Remarks (By HOD)
				L	T			
1	**UNIT - I** Random variables	Understand the concept of Random variable, Discrete random variable, continuous random variable, probability mass function, probability density function	BB	1		1		
2	Binomial distribution	Understand the notion of Binomial distribution and to solve the problems on BD	BB	1		2		
3	Mean and variance of a probability distribution	Understand the concept of finding the mean and variance of a distribution	BB	1		3		
4	Poisson approximation to the binomial distribution	Understand the relation between Poisson and Binomial distributions	BB	2		5		
5	Continuous random variables	Understand the concept of continuous random variable	BB	1		6		

6	Normal distribution	Application of Normal distribution for practical problems	BB	2		8		
7	Normal approximation to the binomial distribution.	Understand the application of Normal distribution if the Binomial distribution is tedious	BB	1		9		
8	Exponential distribution	Understand the application of exponential distribution in reliability studies	BB	1		10		
9	Uniform distribution	Know the concept of UD and its applications		1		11		
10	Gamma distribution	Know the concept of Gamma Distribution and its applications	BB	1		12		
11	Beta distribution	Know the concept of Beta Distribution and its applications	BB	1		13		
12	Weibull distribution.	Understand the application of Weibull distribution in reliability studies	BB	2		15		
13	**UNIT - II** Population and samples	Understand the meaning of Population and sample	BB	1		16		
14	Sampling distribution of the mean (σ known)	Understand how to solve the problems means of sampling distributions if σ known	BB	1		17		

15	Sampling distribution of the mean (σ unknown)	Understand how to solve the problems means of sampling distributions if σ- unknown	BB	1		18		
16	Sampling distribution of variance.	Understand how to solve the problems variance of sampling distributions if	BB	1		19		
17	Point estimation,	Understand the concept of Point estimation in testing of hypothesis	BB	1		20		
18	Interval estimation	Understand the concept of interval estimation in testing of hypothesis	BB	1		21		
19	Hypothesis concerning one mean	Understand the procedure for solving the problems concerning one-mean	BB	2		23		
20	Hypothesis concerning two means	Understand the procedure for solving the problems concerning two-means	BB	2		25		
21	**UNIT - III** Estimation of variances	Understand the concept of estimation of variances	BB	1		26		
22	Hypotheses concerning one variance	Understand the procedure for solving the problems concerning one-varaince	BB	1		27		
23	Hypotheses concerning two variances.	Understand the procedure for solving the problems concerning two-variances	BB	1		28		

24	Estimation of proportions	Understand the estimation of proportions	BB	1		29		
25	Hypothesis concerning one proportion	Understand the procedure for solving the problems concerning one-proportion	BB	1		30		
26	Hypothesis concerning several proportions	Understand the procedure for solving the problems concerning several-proportions	BB	2		32		
27	**UNIT - IV** Method of Least squares	Understand the concept Least squares technique	BB	2		34		
28	Inferences based on Least squares estimators	Understand the procedure for fitting the curves by least squares estimates	BB	1		35		
29	Correlation	Understand the procedure for solving the problems of correlation		2		**37**		
30	Regression	Understand how to find the regression lines	BB	1		38		
31	Curvilinear Regression	Understand the procedure for finding the curvilinear regression	BB	1		39		
32	Multiple Linear Regression	Understand the procedure for finding the multi linear regression	**BB**	2		41		
33	**UNIT – V** ANOVA one-way classificati on	Understand the application of ANOVA one-way classification technique	BB	2		43		
34	ANOVA two-way classificati on	Understand the application of ANOVA two-way	BB	2		45		

		classification technique						
35	Multiple comparisons	Understand the multiple comparisons in ANOVA one-way and two-way classifications	BB	1		46		
36	Reliability	Understand the concept and definition of Reliability	BB	1		47		
37	Applications of Reliability in Life testing	To understand the application of Reliability in Life testing	BB	1		48		
38	Failure time distributions	To Understand the Application of Reliability in Failure time distribution	BB	1		49		
39	Exponential model in Reliability	To Understand the Application of Reliability when the data follows exponential distribution	BB	1		50		
40	Exponential model in Life testing	To Understand the Application of exponential model in life testing	BB	1		51		

Signature of the Faculty

Signature of the HOD:

Date: 3.1.2018

LESSON PLAN

Academic Year : 2017-18
Year & Semester : I Year II Semester
Branch : MCA
Subject Code & Name : CA125-Management Information Systems
Name of Faculty : Dr. Ch.Suneetha & Ms.Ch.Sudha Sree

Unit No	Topic of syllabus covered	Learning outcomes	Teaching Mode (BB/LCD /OHP)	Hours Required Lecture	Total No. of Hours (cumulative)	Expected date of completion (for each unit) by HOD	Review/ Remarks (BY HOD)
I							
Management Information system(MIS)	MIS Concept, MIS: definition	Learn Strategic concept of MIS, physical model and conceptual model of MIS	BB	1	1		
	Role and impact of MIS	Understand role of MIS and impact of MIS on the organization	BB	1	2		
	MIS and User	Know how MIS caters to the needs of all persons in the organization	BB	1	3		
	Management as a control system	Learn process flow of Control system	BB	0.5	3.5		
	MIS: a support to the management	Identify MIS support to management process	BB	0.5	4		
	Management Effectiveness and MIS	Analyse model for Management effectiveness	PPT	1	5		
	Organization as a system	Study model of the organization system	PPT	0.5	6		
	MIS: Organization Effectiveness	Know organizational behaviour and MIS	PPT	1	7		
	MIS for a Digital Firm	Learn the use of MIS for digital firm	BB	1	8		
Information, Knowledge, Business Intelligence	Information concepts, Information : A quality product	Differentiate between data, information and knowledge. Know about effective information presentation, methods to avoid misuse of information and attributes of the	PPT	1	9		

		information					
	Classification of information	Identify classes of information	PPT	1	10		
	Methods of data and information collection, value of the information	Understand application of Value concept to information	PPT	1	11		
	General model of a Human as an Information processor	Recognize general model of human as an information processor.	PPT	1	12		
	Knowledge and knowledge management systems (KMS).	Understand tools and approaches to develop KM systems and driving forces behind Knowledge management.	PPT	1	13		
	Business Intelligence(BI)	Understand BI	PPT	1	14		
II							
Decision making	Decision-making concept	Learn Characteristics of the business decisions and rational decision making and its problems	PPT	1	15		
	Decision-making process	Understand Herbert Simon model of decision making and types of decisions.	PPT	1	16		
	Decision Analysis by Analytical modelling	Know about four ways of decision analysis	PPT	1	17		
	behavioral concepts in decision making	Learn behavioural concepts and decision making	PPT	1	18		
	organizational decision-making	Know the methods for conflict resolution in an organization and dealing with uncertainty	PPT	1	19		
	MIS and decision-making	Understand the concepts of decision making as they are relevant to the design of MIS.	PPT	1	20		

Systems Engineering Analysis and Design	System Concepts, System Control, Types of System, Handling System Complexity	Understand system concepts: model, types and handling of system complexity	PPT	1	21		
	Classes of Systems, General Model of MIS	Explain classes of systems and general model of MIS	PPT	1	22		
	The Need for System Analysis	Identify the need for system analysis	PPT	1	23		
	System Analysis of the Existing System	Analyse the existing system	PPT	1	24		
	System Analysis of a New Requirement	Analyse the proposed system.	PPT	1	25		
	System Development Model	Classify the system development models	PPT	1	26		
	Structured System Analysis and Design	Understand the steps in structured system analysis and design	PPT	1	27		
III							
Decision support systems and knowledge management	Decision Support systems (DSS): Concepts and philosophy, Types of DSS	Understand DSS for MIS design and types of DSS	PPT	1	28		
	DSS models: Behavioral Models	Discuss about examples of behavioural models	BB	2	29		
	Management Science Models	Discuss about examples of management science models	BB	2	31		
	Operation Research models	Discuss about examples of operations research models	BB	2	33		
	Group decision support system (GDSS)	Understand the design of GDSS	PPT	1	35		

	Artificial Intelligence (AI) System	Learn application areas of AI system	PPT	1	36		
	Knowledge base expert system (KBES).	Know how to handle unstructured situation by two methods of problem solving , generalised or KBES	PPT	1	37		
	DSS application in enterprise	Explain various applications of DSS in enterprise	PPT	1	38		
	MIS and the benefits of DSS	Summarise the benefits of DSS	PPT	1	39		
IV							
Business Intelligence for MIS	Business Intelligence and MIS	Understand the concept of business intelligence and MIS	PPT	1	40		
	What is BI? Tools and Techniques of BI	Learn about tools and techniques of BI	PPT	2	41		
	Why is BI developed?	Identify the need to develop BI	PPT	1	43		
	How is BI used?	Know the use of BI	PPT	1	44		
	Process of generation of BI	Interpret the process of generation of BI	PPT	1	45		
	MAIA's IKEY Agile BI suite	Understand MAIA's IKEY Agile BI suite	PPT	3	46		
	Case illustration of BI	Understand case study of BI	PPT	3	49		
V							
Applications in Service Sector	Introduction to service sector	Understand the service sector	PPT	1	52		
	creating a distinctive service	Know how to develop new service	PPT	1	53		
	Service concept	Fully understand service concept	PPT	1	54		
	Service process cycle and analysis	Understand the model of service process cycle and analysis	PPT	2	55		
	Customer	Understand customer	PPT	1	57		

	service design	service design					
	Service management system	Discuss various modules of service management system	PPT	1	58		
	MIS applications in service industry.	Know various applications of MIS in service industry	PPT	2	59		

1. Ch. Sreetha
2. Ch. Sudhakar

Signature of the Faculty

Signature of the HOD

Date: 5/1/18

II YEAR I SEMESTER

LESSON PLAN

Academic Year : 2018-2019

Year & Semester : II Year I Semester

Branch : COMPUTER APPLICATIONS

Subject Code & Name : CA211 & OOPS through JAVA

Name of Faculty : Dr.Ch.Suneetha & Ms. Ch. Sudha Sree

UNIT NO	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/DB /LCD/OHP)	Hours Required		Total No. of Hours (cumulative)	Expected date of completion (for each unit) by HOD	Review/ Remarks (BY HOD)
				Lecture	Tutorial			
I	The History and Evolution of Java, An Overview of Java, Data Types	Apply the syntax and semantics of java programming language and basic concepts of OOP.	BB	1		1		
	Variables, and Arrays, Operators,		BB	1		2		
	Control Statements		BB	1		3		
	Class fundamentals, Declaring the objects, Assigning Object Reference Variables		BB	1		4		
	Introducing Methods, Constructors,		BB	2		6		
	The this keyword, Garbage Collection, the finalize() Method.		BB	1		7		
	Overloading Methods, Using objects as Parameters,		BB	1		8		
	Returning Objects, Introducing Access control		BB	2		10		
	Understanding static and final keywords,		BB	1		11		

	Nested and Inner Classes, Varargs.		BB	1		12		
II	Inheritance Basics, Using super	Develop reusable programs using the concepts of inheritance, polymorphism, interfaces and packages	BB	1		13		
	creating multilevel Hierarchy, when Constructors are executed,		BB	1		14		
	Method Overriding, Dynamic Method Dispatch		BB	1		15		
	Using Abstract Classes, using final with Inheritance,		BB	1		16		
	The Object class		LCD	1		17		
	Packages, Access Protection, Importing Packages,		BB	2		19		
	Interfaces, Default Interface Method		BB	1		20		
	Use static Methods in an Interface.		BB	1		21		
	String class,		LCD	1		22		
	StringBuffer class		LCD	1		23		
	StringBuilder Class		LCD	1		24		
III	Fundamentals, Exception types, Uncaught Exceptions,	Understand the concept of Exception handling to write error free programs	BB	1		25		
	Using try and catch, Multiple catch Clauses, Nested try Statements		BB	1		26		
	throw, throws, finally, Java's Built-in Exceptions, Creating Your Own Exception Subclasses.		BB	1		27		

	The Java Threaded Model, The Main Thread, Creating a Thread	Develop the inter thread communication by using the concept of multithreading	BB	1		28		
	Creating Multiple Threads, Using isAlive() and join()		BB	1		29		
	Thread Priorities, Synchronization		BB	2		31		
	Inter Thread Communication,		BB	1		32		
	Suspending, Resuming, Stopping Threads, Obtaining A Thread's State.		BB	1		33		
	Streams, Byte streams, Character streams	Demonstrate how the java program communicates with the console and disk files using the concept of streams.	BB	1		34		
	Reading Console Input, Writing Console Output, The PrintWriter Class, Reading and Writing Files.		LCD	2		36		
IV	Applet Fundamentals, The Applet Class: Applet Basics, Applet Architecture	Understand the implementation of Applets	BB	1		37		
	An Applet Skeleton, Simple Applet Display Methods, Requesting Repainting		LCD	1		38		
	The HTML APPLET Tag, Passing Parameters to Applets.		LCD	1		39		
	Two Event Handling Mechanisms, The Delegation Event Model, Event Classes	Implement the java applications using the concept of even handling	BB	1		40		
	The Key Event Class, Sources of Events, Event Listener Interfaces		BB	2		42		
	Using The		LCD	2		44		

	Delegation Event Model, Adapter Classes , Inner Classes.							
	AWT Classes, Window Fundamentals, Working with Frame Windows, Creating a Frame Window in an AWT	Understand the implementation of programs in AWT	LCD	1		45		
	Based Applet, Creating a Windowed program, Displaying Information Within a Window		LCD	2		47		
	Introducing Graphics, Working withColor.		LCD	1		48		
V	AWT Control Fundamentals, Labels, Using Buttons, Applying Check Boxes, CheckboxGroup, Choice Controls , Using Lists, Managing Scroll Bars, Using a TextField, Using a TextArea	Develop the GUI applications using AWT controls	LCD	2		50		
	Understanding Layout Managers, Menu Bars and Menus.		LCD	1		51		
	Introducing Swing, Exploring Swing –Jlabel and ImageIcon, JTextField,	Implement java applications using swing components	LCD	2		53		
	The Swing Buttons, JTabbedPane, JScrollPaneJList, JComboBox, Trees and JTable.		LCD	2		55		

	Networking Basics, The Networking Classes and Interfaces,	Develop the network programs for TCP and UDP.	LCD	1		56		
	InetAddress, TCP/IP Client sockets,		LCD	1		57		
	URL, URL connection,		LCD	1		58		
	TCP/IP sockets Server Sockets		LCD	1		59		
	Datagrams		LCD	1		60		

1. Ch. Sweetha

2. Ch. Sobha Sree

Signature of the Faculty

Signature of the HOD

Date: 12.6.18

LESSON PLAN

Academic Year : 2018-2019

Year & Semester : II Year I Semester

Subject Code & Name : CA212 & Web Technologies

Name of Faculty : Ms. M.Vasavi & Sri M.Brahmaiah

UNIT NO	Topic of syllabus covered	Learning Outcomes	Teaching Mode	Hours Required		Total No. of Hours(cumulative)	Expected date of completion (for each unit) by HOD	Review/Remarks (BY HOD)
				L	T			
I	Introduction , Headings, Linking, hr, br tags	Create static web pages using HTML and CSS	BB	1		1		
	Images, Lists, Tables		BB	2		3		
	Forms, Internal Linking, Meta elements		BB	2		5		
	New HTML5 Form input types		BB	2		7		
	Input and data list elements		BB	1		8		
	Page-structure elements		BB	2		10		
	Inline, Embedded and External		BB	1		11		
	Text Shadows, Color, Box Shadows, Vendor prefixes		PPT	1		12		
	Image Borders, Animation, Transition and Transformation		PPT	2		14		
II	Arithmetic, get user input with prompt dialog	Create static web pages using java Script and Design dynamic Webpages using client side scripting.	BB	1		15		
	If , If-Else, While statement		BB	1		16		
	Assignment operators, increment and decrement operators		BB	1		17		
	For statement, switch, do.-While, break, continue, logical operator		BB	2		19		
	Introduction, Function definition, Random number generation, Scope rules, Global functions, Recursion, Recursion Vs Iteration		BB	3		22		
	Introduction about Arrays, declaration, references and references parameters, passing array to functions		BB	3		25		
	Math ,string, Date , Boolean, number, document objects		BB	3		28		
III	Modelling a document, traversing and modifying a DOM tree, Collection		BB	2		30		
	Load event, Event Mouse move and event object, focus, blur, submit, reset, event bubbling		PPT	2		32		

	Canvas coordinates system Rectangles, using path to draw lines	Able to work with Canvas and draw variety of shapes.	PPT	2		35		
	Drawing arcs, and circles, shadows, quadratic curves, Linear gradient		BB	2		37		
	Images: image manipulation, Patterns, Transformations, Text, resizing the canvas		PPT	2		39		
IV	Introduction, XML Basics, Structuring Data, XML Name space	Create XML documents and work with web servers to create web applications with JDBC.	BB	2		41		
	DTDs, W3C XML schema documents, XML vocabularies, XSL Transformations		PPT	2		43		
	Introduction to JDBC, Connections, internal database connections, statements		PPT	2		45		
	Results Sets, prepared statements, callable statements		BB	2		47		
V	Introduction , HTTP Transactions, Multitier Application architecture	Write server side programs with Java Servlet Technologies	BB	2		49		
	Client side scripting vs server side scripting		BB	1		50		
	Accessing web servers		BB	1		51		
	Apache Installation		BB	1		52		
	Background, Lifecycle of servlet, servlet development options		BB	2		54		
	The servlet API, The javax.servlet package, Reading servlet parameters		BB	2		56		
	The javax.servlet HTTP package, Handling HTTP request& response		BB	2		58		
	Cookies, Session Tracking		BB	2		60		

1. M Vasu
2. M. Rahmath

Signature of the Faculty

Signature of the HOD

Date: 12.6.2018

LESSON PLAN

Academic Year : 2018-19

Year & Semester : II Year I Semester

Branch : Master of Computer Applications

Subject Code & Name : CA213 & Cryptography and Network Security

Name of Faculty :Ms.I.Naga Padmaja & Ms. V.Sujatha Lakshmi

UNIT NO	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Review/ Remarks (By HOD)
				L	T			
I	Symmetric cipher model.	Apply classical and symmetric encryption schemes	BB	1		1		
	substitution techniques–		BB	2		3		
	transposition techniques-Rotor machines-Steganography		BB	2		5		
	Traditional Block Cipher Structure-		BB	2		7		
	The Data Encryption Standard –		BB	2		9		
	ADES Example-The Strength of DES-		BB	2		11		
	Block Cipher Design Principles.		BB	1		12		
II	Prime number	Understand the number theory and apply theorems. .	BB	1		13		
	Fermat's, Euler's theorems.		BB	1		14		
	Testing for Primality. The Chinese Remainder Theorem.		BB	2		16		
	Discrete Logarithms.		BB	2		18		
	Principles of public-Key Crypto System.	Analyse the concepts of public key encryption and Key management schemes.	BB	2		20		
	The RSA Algorithm.		BB	2		22		
	Other Public Crypto systems: Diffie-Hellman key exchange		BB	2		24		

	Algorithm.							
III	Applications of cryptographic Hash Functions.	Apply MAC, Hashing techniques needed for authentication.	BB	1		25		
	Two simple hash Functions-requirements and Security.		BB	1		26		
	Secure Hash Algorithm.		BB	2		28		
	Message Authentication Requirements.		BB	1		29		
	Message Authentication Functions.		BB	1		30		
	Requirements for message Authentication Codes.		BB	1		31		
	Security of MACs-CMAC.		BB	2		33		
	Digital Signatures	Apply Digital signatures needed for authentication.	BB	1		35		
	Elgamal DSS-Schnorr DSS-NIST DSS Algorithm.		BB	2		36		
IV	Symmetric Key Distribution.	Apply X.509 certificates and Kerberos for both symmetric and asymmetric encryption.	BB	1		37		
	Using Symmetric Encryption.		BB	1		27		
	Symmetric key distribution using Asymmetric Encryption.		BB	1		38		
	Distribution of Public Keys.		BB	1		39		
	X.509 Certificates.		BB	1		40		
	Remote User – Authentication Principles.		BB	1		41		
	Remote user-Authentication using Symmetric Encryption.		BB	1		42		
	Kerberos.		BB	1		43		
	Remote user Authentication using Asymmetric Encryption.		BB	1		44		
	Web security Considerations.	Design the IP security header	BB	1		45		
	SSL-TLS.		BB	1		46		

	PGP-S/MIME.	formats, Web Security, Email Security and know the applications like Kerberos, PGP.	BB	1		47		
	IP Security Overview- IP security Policy.		BB	1		48		
	IP security Policy. Encapsulating Security payload.		BB	1		49		
	Combining Security Associations- Internet Key Exchange.		BB	1		50		
V	Intruders, Intrusion detection.	Explain Understand the concept of Intrusion detection techniques and malicious software and Firewalls configuration	BB	1		44		
	Password management.		BB	1		45		
	Viruses and related threads.		BB	1		46		
	virus counter measures, Distributed denial of service attacks.		BB	1		47		
	Firewall Design Principles, trusted system.		BB	1		48		
	Common criteria for information technology, security evaluation.		BB	1		49		

1. D. Nagpatri
2. V. Sujatha

Signature of the Faculty:

Signature of the HOD:
Date: 12.6.18

LESSON PLAN

Academic Year : 2018-2019

Year & Semester : II Year I Semester

Branch : MCA

Subject Code & Name : CA214 & Operations Research

Name of Faculty : Ms. M.Vijaya & Ms. Sneha H.Dhoria

Unit No	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/LCD /OHP)	Hours Required Lecture	Total No. of Hours (cumulative)	Expected date of completion (for each unit) by HOD	Review/ Remarks (BY HOD)
UNIT-I Linear Programming	Introduction	Recognize the importance and value of Operations Research linear programming in solving practical problems in industry	BB	1	1		
	Formulation of Linear Programming Models		BB	2	3		
	Graphical solution of Linear programming Models		BB	2	5		
	Maximization with Less-than-or- equal to constraints		BB	1	10		
	Equalities and Greater than or equal to constraints		BB	1	11		
	Minimization of the objective function		BB	1	12		
	The simplex Method, properties of simplex Method.		BB	2	14		
	Vogel's approximation method, least cost method		BB	2	17		
	Finding optimal solution by MODI method. Degeneracy		BB	3	20		
	unbalanced transportation matrix and		BB	1	21		

	Maximization in transportation model						
	One-to-one assignment problem		BB	1	22		
	optimal solution		BB	2	24		
	unbalanced assignment matrix		BB	1	25		
	Traveling salesman problem		BB	1	26		
UNIT-II Game Theory	Introduction, Minimax – Maxmin principle	Recognize and solve game theory and decision theory problems	BB	1	27		
	pure strategies, Mixed Strategies		BB	2	29		
	Expected Payoff, solution of 2x2 game		BB	1	32		
	dominance, solution of 2xn games, solution of mx2		BB	1	33		
	Brown's algorithm.		BB	1	34		
UNIT-III Decision Theory	Introduction, decision under certainty,	Recognize and solve game theory and decision theory problems	BB	1	35		
	Decision under risk		BB	1	36		
	expected value criterion		BB	1	37		
	expected value combined with variance criterion		BB	1	38		
	decision under uncertainty, decision tree		BB	1	39		
	decision tree		BB	1	40		
UNIT-IV PERT and CPM	Introduction	Gain knowledge of drawing project networks for quantitative analysis of projects	BB	1	41		
	PERT Network, Time Estimates for Activities,		BB	2	43		
	Earliest Expected completion of events, Latest Allowable Event Completion time,) :, Event Slack Times,		BB	2	45		

	Critical path method.		BB	5	50		
UNIT-V Deterministic inventory Models	Introduction	Know about basic inventory models.	BB	1	51		
	Infinite Delivery Rate with no Backordering		BB	3	54		
	Infinite Delivery Rate with Backordering		BB	4	58		
	Finite Delivery rate with Backordering.		BB	4	62		

1. M. Vijaya
2. Snehal Dhoria.

Signature of the Faculty

Signature of the HOD

Date: 11.6.18

LESSON PLAN

Academic Year : 2018-2019

Year & Semester : II Year I Semester

Branch : Master of Computer Applications

Subject Code & Name : CA215 & Software Engineering

Name of Faculty : Mrs.Hymavathi. T & Mr.Bh. Krishna Mohan

Unit No	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/DB/ LCD/OHP)	Hours Required		Total No. of Hours (cumulative)	Expected date of completion (for each unit) by HOD	Review/ Remarks (BY HOD)
				Lecture	Tutorial			
I	The Changing Nature of Software, Unique Nature of WebApps	Learn basic concepts of software engineering methods and practices. Understand various models	BB	1		1		
	Software Engineering, The Software Process		BB	1		2		
	Software Engineering Practice, Software Myths		BB	1		3		
	A Generic Process Model, Process Assessment and Improvement		BB	1		4		
	Perceptive Process Models, Specialized Process Models		LCD	2		6		
	The Unified Process		LCD	2		8		
	Personal and Team Process Models		LCD	1		9		
	Agility, Agility the cost of change, Agile Process?		BB	1		10		
	Extreme Programming		BB	1		11		
	Other Agile Process Models		BB	1		12		
II	Software Engineering Knowledge, Core Principles,	Understand the principles of framework activity and analyse requirements engineering models with examples	BB	2		14		
	Requirements Engineering, Establishing the groundwork.		BB	1		15		
	Eliciting Requirements, Developing Use Cases		LCD	1		16		
	Building the Requirements Model		LCD	1		17		
	Negotiating		LCD	1		18		

	Requirements, Validating Requirements							
	Requirement Modelling Strategies		BB	2		20		
	Flow-Oriented Modeling, Creating a Behavioral Model		LCD	2		22		
	Patterns for requirements Modeling, Requirements Modeling for WebApps.		LCD	2		24		
III	Design within the Context of Software Engineering, Design Process.	Develop the design concepts, Architecture Genres and other designs for the selected information systems	BB	1		25		
	Design Concepts, Design Model.		LCD	2		27		
	Software Architecture, Architectural Genres		BB	1		28		
	Architectural Styles		LCD	1		29		
	Architectural Design, Assessing Alternative Architectural Designs		LCD	2		31		
	Architectural Mapping using Data Flow.		LCD	1		32		
	Component, Designing Class-Based Components, Conducting Component-Level Design		LCD	2		34		
	Component-Level Design for WebApps, Designing Traditional Components, Component-Based Development		LCD	2		36		
IV	Quality Software Quality, Software Quality Dilemma, Achieving Software Quality.	Demonstrate software quality management and software testing techniques.	BB	1		37		
	Strategic Approach to software testing, Strategic Issues, Test strategies for Conventional Software		LCD	1		38		
	Test strategies for Object Oriented Software, Test		LCD	1		39		

	strategies for WebApps,							
	Validation Testing, System Testing, The Art of Debugging.		BB	1		40		
	Software Testing Fundamentals, Internal and External Views of Testing		BB	2		42		
	White-Box Testing, Basis Path Testing, Control Structure Testing		LCD	2		44		
	Black Box Testing, Modeling-based testing, Testing for Specialized Environments		LCD	2		46		
	Architectures and Application, Patterns for software testing.		BB	2		48		
V	A Framework for Product Metrics, Metrics for the Requirements Model.	Determine software Product, Process and Project Metrics.	BB	1		49		
	Metrics for the Design Model, Design Metrics for WebApps		BB	2		51		
	Metrics for source codes, Metrics for Testing, Metrics for Maintenance		BB	2		53		
	Metrics in the Process and Project Domains		BB	2		55		
	Software Measurement, Metrics for Software Quality		BB	2		57		
	Integrating Metrics within the software Process, Metrics for small organizations		BB	2		59		
	Establishing a software metrics program.		BB	1		60		

1. Aythi T
2. [illegible]

Signature of the Faculty

Signature of the HOD

Date: 12-6-2018

II YEAR II SEMESTER

LESSON PLAN

Academic Year : 2018-2019

Year & Semester : II year II Semester

Branch : Computer Applications

Subject Code & Name: CA 221 & .Net Programming

Name of Faculty : Ms. M. Vasavi & Ms. Hymavathi. T

Unit No	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/DB/ LCD/OHP)	Hours Required		Total No. of Hours (cumulative)	Expected date of completion (for each unit) by HOD	Review/ Remarks (BY HOD)
				Lecture	Tutorial			
I	Writing a C# Program The Development Environments Console Applications	Understand the basic concepts of variables, functions, delegates	BB	2		2		
	Flow Control		BB	2		4		
	More About Variables		BB	2		6		
	Functions		LCD	3		9		
	Delegates		LCD	3		12		
II	Debugging and Error Handling	Learn the concepts of OOPS and collection and comparisons and how to handle errors	LCD	2		14		
	Introduction to object oriented programming		LCD	3		17		
	Defining Classes, Defining Class members		LCD	2		19		
	Collections		LCD	2		21		
	Comparisons and conversions		LCD	3		24		
III	Generics	Learn and able to create windows forms applications and to understand generics	LCD	3		27		
	Additional OOP Techniques		LCD	2		29		
	Basic Windows Programming		LCD	2		31		
	Advanced Windows Forms Features		LCD	3		34		
	Deploying Windows Applications		LCD	2		36		
IV	Overview of Web Applications	Understand the	LCD	2		38		

	Master Pages	architecture of web services to create web applications and publish the web application	LCD	2		40		
	Web Services Architecture		LCD	2		42		
	Web Services and the .NET Framework		LCD	2		44		
	Internet Information Services		LCD	2		46		
	IIS Configuration		LCD	1		47		
	Copying a Website , Publishing a web application		LCD	1		48		
V	Streams	Understand the streams and how to create XML documents and use of LINQ	LCD	2		50		
	Serialized Objects		LCD	2		52		
	XML Documents		LCD	2		54		
	Using XML in Your Application		LCD	2		56		
	First LINQ Query, Using the LINQ Method Syntax Ordering, Query Results		LCD	2		58		
	Applying LINQ		LCD	2		60		

1. M.Vese
2. Jyothi.T

Signature of the Faculty

Signature of the HOD

Date: 29.11.2018

LESSON PLAN

Academic Year : 2018-19

Year & Semester : II Year II Semester

Branch : Master of Computer Applications

Subject Code & Name : CA222 & Web Services

Name of Faculty : Dr. Ch.Suneetha & Dr.M.Sridhar

Unit No/Chapter Name	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/LCD /OHP)	Hours Required Lecture	Total No. of Hours (cumulative)	Expected date of completion (for each unit) by HOD	Review/ Remarks (BY HOD)
I							
Java 2 Enterprise Edition Overview	The ABC of programming Languages	Recall evolution of programming languages	BB	1	1		
	Taking programming languages up a notch	Learn features of different programming languages	BB	1	2		
	The beginning of JAVA	Describe history of java	BB	1	3		
	JAVA Bytecode	Define java Bytecode and execution of java program	BB	0.5	3.5		
	The advantages of JAVA	List advantages of java	BB	0.5	4		
	J2EE and J2SE	Differentiate J2EE and J2SE	BB	1	5		
J2EE Multi-Tier Architecture	Distributive Systems Real-Time Transmission Software Objects Web Services	Explain distributed environment, message transmission, reusable components and web services	PPT	1	6		
	The Tier Clients , Resources and Components Accessing Services	Define tier architecture for business organization	PPT	1	7		
	J2EE Multi-tier Architecture	Explain architecture of J2EE and implementation of all the tiers	PPT	1	8		
	Client Tier Implementation		PPT	1	9		

	Web Tier Implementation		PPT	1	10		
	EJB Tier Implementation		PPT	1	11		
	EIS Tier Implementation		PPT	1	12		
II							
Java and XML	Generating XML Document Java Servlet Java Server Pages	Expose the students to the combined use of XML and Java technologies to support the development of modern applications targeted to the evolving spectrum of distributed and decentralized enterprise platforms.	PPT	1	13		
	Parsing XML Document Object Model(DOM) Simple API for XML(SAX)	Demonstrate the application of XML in distributed communications enabling, enterprise systems assurance, web enabling, application enabling, and enterprise data enabling.	PPT	3	16		
Java Server Pages	JSP Installation	Understand the JSP technology, its features and advantages	PPT	1	17		
	JSP Tags Variables and objects Methods Control statements Loops	Develop JSP applications using JSP Tags, JSP Scriptlets and JavaBeans	PPT	1	18		
	Tomcat	Learn how to configure TOMCAT and run applications using TOMCAT server	PPT	1	19		
	Request String Parsing other information	Analyse the format of request string and to parse the other information	PPT	1	20		
	User sessions	Describe various session tracking mechanisms	PPT	1	21		

	Cookies	Track information using cookies	PPT	2	23		
	Session Objects	Know about session object and its methods	PPT	1	24		
III							
Enterprise JavaBeans	Enterprise JavaBeans The EJB Container EJB Classes EJB Interfaces	Understand the concepts of EJB, EJB container, EJB types, Two EJB interfaces (home interface and Remote interface)	PPT	1	25		
	Deployment Descriptors	Describe various components of deployment descriptor for EJB.	BB	2	28		
	Session Java bean Stateless vs. Stateful Creating a Session Java Bean	learn how to create session java bean and differences between stateless and stateful java bean	BB	2	30		
	Entity Java Bean Container-managed persistence Bean-managed persistence	Learn how to manage a collection of data retrieved from a data base and stored in memory by entity java bean.	BB	2	32		
	Message-Driven bean Creating an MDB	Learn how to monitor Java message service communications by MDB	PPT	1	33		
JavaMail API	JavaMail API and Java Activation Framework,protocols,exceptions	Gain knowledge of send/receive mails using Internet protocols SMTP, IMAP and POP3	PPT	1	34		
	Sending and retrieving and deleting Email mesages		PPT	1	35		
	Replying and forwarding Email messages Searching Email		PPT	1	36		
IV							
Java Interface	The concept of object request	Learn principles of	PPT	2	38		

Definition Language and CORBA	brokerage. Java IDL and CORBA. The IDL interface	CORBA, IDL interface defined in CORBA IDL module and mapping of IDL to Java.					
	Client side	Develop the client-side application that will request the services of the object.	PPT	2	40		
	Server side and running the code	Develop CORBA server-side program that respond to client requests	PPT	2	42		
Java Remote Method Invocation (RMI)	RMI concept, Remote interface, Passing objects, The RMI Process	Know how client and server communicate through remote objects.	PPT	2	44		
	Server side of RMI			2	46		
	Client side of RMI and running code			2	48		
V							
SOAP	SOAP basics, SOAP functionality	Gain knowledge of SOAP and its functionality	PPT	1	49		
	SOAP message and delivery structure	Identify parts of SOAP message	PPT	1	50		
	Java API for XML messaging (JAXM),The Connection	Understand API for messaging service	PPT	1	51		
	Create, send and receive a point-to-point SOAP message	Establish point-to-point SOAP communication for sending and receiving messages	PPT	1	52		
	Create, send a SOAP message using messaging provider	Able to develop program for sending a SOAP message using message provider	PPT	1	53		
	Creating a soap attachment		PPT	1	54		
	Accessing a SOAP attachment		PPT	1	55		

Universal Description, Discovery, and Integration (UDDI)	Inside the UDDI UDDI architecture	Learn UDDI and its architecture	PPT	1	56		
	UDDI API Inquiry API and ten inquiry API calls	Search the UDDI registry for information about web services.	PPT	1	57		
	Publishing API and publisher API calls	Know about publishing services on UDDI site to make services available to clients using publishing API calls.	PPT	1	58		
Web Services Description Language (WSDL)	Inside WSDL The WSDL document	To create own web application and able to know how to utilize the various available resources	PPT	2	60		
	SOAP one way-way transmission primitive						
	SOAP request-response transmission primitive						

1. Ch. Sueetha

2. Madhavi

Signature of the Faculty

Signature of the HOD

Date: 29.11.18

LESSON PLAN

Academic Year : 2018-2019

Year & Semester : II Year II Semester

Branch : Master of Computer Applications

Subject Code & Name : CA223 & Design and Analysis of Algorithms

Name of Faculty : Dr.Ch.Sudha Sree & Sri M.Brahmaiah

Unit No	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/DB /LCD/OHP)	Hours Required		Total No. of Hrs. (cumulative)	Expected date of completion (for each unit) by HOD	Review /Remarks (BY HOD)
				L	Tut			
I	What is Algorithm – Algorithm Specification: Pseudocode Conventions	1. Compute time and space complexity of algorithms. 2. Deduce the recurrence relations that describe the time complexity of recursively-defined algorithms that employ these strategies. 3.Implement real time applications based on various data structures	BB	1		1		
	Recursive Algorithms		BB	1		2		
	Performance Analysis: Space Complexity – Time Complexity		BB	1		3		
	Asymptotic notation		BB	1		4		
	Performance Measurement.		BB	1		5		
	Randomized Algorithms : Basics of probability theory		BB	1		6		
	Randomized algorithms: Identifying the repeated element, Primality Testing – Advantages and Disadvantages.		BB	1		7		
	Stacks and Queues		BB	1		8		
	Terminology – Binary Trees, Dictionaries : Binary Search Trees		BB	1		9		
	Priority Queues		BB	1		10		
	Heaps – Heapsort		BB	1		11		

	Sets and disjoint set Union : Introduction – union and find operations.		BB	1		12		
	Graphs: Introduction – Definitions – Graph Representations.		LCD	1		13		
II	General Method	Design algorithms using divide and conquer, greedy, and dynamic programming strategies and recite algorithms that employ these strategies	BB	1		14		
	Binary Search and analysis		BB	1		15		
	Finding Maximum and Minimum		BB	1		16		
	Merge Sort		BB	1		17		
	Quick sort		BB	1		18		
	Strassen's Matrix Multiplication		BB	1		19		
	Convex Hull: some geometric Primitives		BB	1		20		
	The Quick Hull Algorithm Graham's scan – An 0(nlogn) divide – and – conquer algorithm		BB	1		21		
	The general Method for greedy method, Knapsack Problem		BB	1		22		
	Tree Vertex Splitting		BB	1		23		
	Job sequencing with deadlines		BB	1		24		
	Minimum cost spanning trees : Prim's Algorithm		BB	1		25		
	Kruskal's algorithm		BB	1		26		
	Optimal Storage on tapes		BB	1		17		
	Optimal Merge patterns		BB	1		28		
	Single Source shortest paths		BB	1		29		
III	The general method	Learn dynamic	BB	1		30		

	for Dynamic Programming	programming concept And solve various problems using dynamic programming.						
	Multi-stage graphs		BB	1		31		
	All pairs shortest paths		BB	1		32		
	Single source shortest paths		BB	1		33		
	Optimal Binary Search Trees		BB	1		34		
	String editing – 0/1 Knapsack		BB	1		35		
	Reliability design		BB	1		36		
	The traveling sales person problem		BB	1		37		
	Flow shop Scheduling		LCD	1		38		
IV	Techniques for Binary Trees	Design algorithms using backtracking and branch and bound strategies and recite algorithms that employ these strategies.	BB	1		39		
	Techniques for graphs : Breadth First Search Traversal		BB	1		40		
	Depth First Search Traversal		BB	1		41		
	Bi-connected Components		BB	1		42		
	Back Tracking		BB	1		43		
	The general method ofBack Tracking. The 8-queens problem		BB	1		44		
	sum of subsets, Graph coloring		BB	1		45		
V	Least Cost search,the15puzzle problem, control abstractions for LC search, FIFO Branch and Bound, LC Branch and Bound	Understand the P, NP, NP hard, and NP complete classes	BB	1		46		
	0/1 knapsack problem: LC Branch and Bound solution, FIFO Branch and Bound solution		BB	1		47		

	Traveling Sales person		BB	1		48		
	Basic concepts : Non deterministic algorithms – The classes NP hard and NP complex		BB	1		49		
	Cook's theorem, NP hard graph problems		BB	1		50		
	Clique Decision Problem – Node cover decision problem, chromatic number decision problem – Directed Hamiltonian cycle		BB	1		51		
	Traveling sales person decision problem, and/or graph decision problem		BB	1		52		
	NP-hard scheduling Problems scheduling identical processors, flow shop scheduling – job shop scheduling		BB	1		53		
	NP-hard code generation problems: code generation with common sub expressions, Implementing parallel assignment instruction Some simplified NP-hard problems		BB	1		54		

1. Dr. Sethuraman

2. M. Balamurali

Signature of the Faculty

Signature of the HOD

Date: 26.11.18

LESSON PLAN

Academic Year : 2018-2019

Year & Semester : II MCA II Semester

Branch : Master of Computer Applications

Subject Code & Name : CA224 (A): ARTIFICIAL INTELLIGENCE

Name of Faculty : Ms. V.Sujathalakshmi

UNIT NO	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/DB/LCD/OHP)	Hours Required		Total No. of Hours(cumulative)	Expected date of completion (for each unit) by HOD	Review/Remarks (BY HOD)
				L	T			
I	The AI Problems What is an AI Techniques Criteria for Successes	Understand the fundamental concepts of Artificial Intelligence.	BB	1		1		
	Problem as a state space search	Understand the various problems.	BB	1		2		
	Production systems		BB	1		3		
	Problem Characteristics		BB	1		4		
	Production system characteristics		BB	1		5		
	Generate and test	Apply problem solving techniques for solving simple AI problems.	BB	1		6		
	Hill climbing		LCD	1		7		
	Best First search		LCD	1		8		
	Problem reduction		LCD	2		10		
	Constraint satisfaction		LCD	1		11		
	Means ends analysis		LCD	1		12		
II	Representations and mappings	Ability to represent the given natural language sentences in predicate/proposition logic.	LCD	1		13		
	Representations and mappings		BB	1		14		
	Representations and mappings		BB	1		15		
	Representing simple facts in logic	Ability to represent knowledge as	BB	1		16		
	Representing		BB	1		17		

	simple facts in logic	rules.						
	Resolution		BB	1		18		
	Procedural knowledge Vs Declarative knowledge	Understand about the new knowledge using forward/ backward reasoning.	BB	1		19		
	Procedural knowledge Vs Declarative knowledge		BB	1		20		
	Procedural knowledge Vs Declarative knowledge		BB	1		21		
	Forward Vs Backward reasoning		BB	1		22		
	Matching		LCD	1		23		
	Matching, Control Knowledge		LCD	1		24		
III	Introduction to Nonmonotonic reasoning	Ability to represent the given natural language information as weak or strong slot-and-filler structures.	BB	1		25		
	Nonmonotonic reasoning		BB	1		26		
	Implementation in DFS		BB	2		28		
	BFS		BB	2		30		
	Semantic nets		BB	1		31		
	Semantic nets		BB	2		33		
	Frames		BB	2		35		
	Frames		BB	1		36		
IV	Overview of Planning	Ability to get familiarized to various planning techniques.	BB	1		37		
	Components of a Planning Systems		BB	1		38		
	Goal Stack Planning		BB	2		40		
	Non-linear Planning using Constraint Posting		BB	2		42		
	Hierarchical Planning		BB	1		43		
	Reactive Systems		BB	1		44		
	Syntactic Processing	Understand about the given natural language.	BB	1		45		
	Semantic Analysis		BB	2		47		
	Discourse and Pragmatic Processing		BB	1		48		
V	Common sense Ontologies	Understand the concepts of connectionist models.	BB	2		50		
	Memory Organization, Case based reasoning		BB	2		52		
	Representing and		BB	2		54		

	using Domain knowledge	-						
	Representing and Using Domain Knowledge	Understand the concepts of expert systems	BB	2		56		
	Expert System Shells.		BB	2		58		
	Knowledge Acquisition		BB	2		60		

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Date: 26.11.18

LESSON PLAN

Academic Year : 2018-2019

Year & Semester : II Year II Semester

Branch : Master of Computer Applications

Subject Code & Name : CA224(B) Computer Graphics

Name of Faculty :Mrs. M. Chaitanya

UNIT NO	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/DB/ LCD/OHP)	Hours Required		Total No. of Hours(cumulative)	Expected date of completion (for each unit) by HOD	Review/Remarks (BY HOD)
				Lecture	Tutorial			
I	Video Display Devices	Understand the basics of computer graphics, different graphics systems and applications of computer graphics	BB	1		1		
	Raster Scan Displays		BB	1		2		
	Random Scan Displays		BB	1		3		
	Color CRT Monitors		BB	1		4		
	Direct View Storage Tubes		BB	1		5		
	Flat Panel Displays		BB	1		6		
	Raster Scan Systems		BB	1		7		
	Random Scan Systems		BB	1		8		
	Input Devices, The User Dialogue, Windows and Icons		BB	1		9		
	Input of Graphical Data and Input Functions		BB	1		10		
II	Points and Lines, DDA Algorithm	Provide an understanding of various algorithms to scan, convert the basic geometrical primitives, transformations, Area filling, clipping	BB	1		11		
	Bresenham's Line Algorithm		BB	1		12		
	Line Function, Circle Generation Algorithms		BB	1		13		
	Circle Generation Algorithms		BB	1		14		
	Ellipse Generation Algorithms		BB	1		15		
	Line Attributes		BB	1		16		

	Color and Gray Scale levels		BB	1		17		
	Area Fill Attributes, Character Attributes		BB	2		19		
	Bundled Attributes, Antialiasing		BB	1		20		
III	Basic Transformations	Learn the basic principles of 2-dimensional computer graphics	BB	1		21		
	Matrix Representation and Homogenous Coordinates		BB	1		22		
	Composite Transformations		BB	1		23		
	Other Transformations		BB	1		24		
	The Viewing pipeline		BB	1		25		
	Viewing Coordinates Reference Frame		BB	1		26		
	Window to Viewport Coordinate Transformations		BB	1		27		
	Two Dimensional Viewing Functions		BB	1		28		
	Clipping Operations, Point Clipping		BB	1		29		
	Cohen-Sutherland LineClipping		BB	2		30		
	Sutherland-Hodgeman Polygon Clipping		BB	2		32		
	CurveClipping, Text Clipping, Exterior Clipping		BB	2		34		
IV	Three Dimensional Display Methods	Learn the basic principles of 3-dimensional computer graphics& the importance of viewing and projections	BB	1		35		
	Polygon Surfaces		BB	1		36		
	Quadric Surfaces		BB	1		37		
	Super quadrics		BB	1		38		
	Translation, Rotation, Scaling		BB	1		39		
	Other Transformations		BB	1		40		
	Composite		BB	1		41		

	Transformations							
	Three Dimensional Transformation Functions		BB	1		42		
	Viewing pipeline, Viewing Coordinates		BB	1		43		
	Projections		BB	4		47		
	Clipping		BB	1		48		
V	Introduction to multimedia and hypermedia	Apply the logic to develop animation and gaming programs	BB	1		49		
	WWW		BB	1		50		
	overview of multimedia software tools		BB	1		51		
	Multimedia authoring some useful editing and authoring tools		BB	1		52		
	VRML		BB	1		53		
	Graphics/Image data types		BB	1		54		
	popular file formats		BB	1		55		
	Color models in images		BB	1		56		
	Color models in Video		BB	1		57		
	types of video signals		BB	1		58		
	analog video		BB	1		59		
	digital video		BB	1		60		

Signature of the Faculty

Signature of the HOD

Date: 28-11-18

LESSON PLAN

Academic Year : 2018-2019

Year & Semester : II Year II Semester

Branch : Master of Computer Applications

Subject Code & Name : CA224 (E) & Open Source Systems

Name of Faculty : Sri P. Siva Prasad

UNIT NO	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/DB/LCD/OHP)	Hours Required	Total No. of Hours(cumulative)	Expected date of completion (for each unit) by HOD	Review/Remarks (BY HOD)
				Lecturer /Tutorial			
I	Essential PHP	Develop web applications using Apache, PHP, and MySQL and apply the OOP concepts	BB	2	2		
	Operators		BB	2	4		
	Flow Control		BB	3	7		
	String		BB	3	10		
	Array		BB	2	12		
II	Reading Data in Web Pages		LCD	6	18		
	PHP Browser- Handling Power		LCD	6	24		
III	Object Oriented Programming		BB	3	27		
	Advanced Object Oriented Programming.		BB	6	33		
	File Handling		LCD	3	36		
IV	Working with Databases	Create database driven web applications	LCD	4	40		
	Sessions		LCD	2	42		
	Cookies	Create database driven web applications	LCD	2	44		
	FTP		LCD	2	46		
V	Ajax	Create powerful web applications using Ajax.	BB	2	48		
	Advanced Ajax		LCD	4	52		
	Drawing Images on the Server	Create images at the web server	LCD	4	56		
	XML and RSS	Manipulate XML documents using PHP and Create RSS.	BB	4	60		

P. I. Prasad
Signature of the Faculty

Signature of the HOD
Date: 28.11.18

LESSON PLAN

Academic Year : 2018-2019

Year & Semester : II Year II Semester

Branch : Master of Computer Applications

Subject Code & Name : CA225(A) & Embedded Systems

Name of Faculty : Ms. I. Naga Padmaja

UNIT NO	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/DB/ LCD/OHP)	Hours Required		Total No. of Hours (cumulative)	Expected date of completion (for each unit) by HOD	Review/ Remarks (BY HOD)
				Lecture	Tutorial			
I	Embedded systems overview	Understand the different types of Technology.	BB	1		1		
	design challenge		BB	2		3		
	optimizing metrics		BB	2		5		
	processor technology		BB	2		7		
	IC technology		BB	1		8		
	Design technology automation-synthesis-verification:		LCD	2		10		
	Hardware/software co-simulation-trade-offs		LCD	2		12		
II	Custom single purpose processor design-	Differentiate between the different types of Processors.	LCD	1		13		
	RT level custom single purpose processor design-		LCD	2		15		
	optimizing custom single purpose processors-		LCD	2		17		
	General purpose processor's software: architecture, operation, programmer's view		LCD	2		19		
	development environment		LCD	2		21		
	ASIPs - selecting a microprocessor		BB	1		22		
	general purpose processor design.		LCD	2		24		
III	Introduction to memory	Understand the memory and able to compose memory of required size.	BB	2		26		
	write ability and storage Permanence		LCD	2		28		
	common memory types		BB	2		30		
	composing memory		BB	2		32		
	memory hierarchy and caches		LCD	2		34		
	Advanced RAM.		BB	2		36		
IV	Introduction to	Differentiate	LCD	1		37		

	communication basics	different types of Interfacing techniques and different protocols.						
	microprocessor interfacing: I/O addressing		LCD	1		38		
	Interrupts		LCD	1		39		
	DMA-Arbitration		LCD	2		41		
	multilevel bus architectures		LCD	1		42		
	advanced communication principles		BB	2		44		
	serial protocols		LCD	1		45		
	Parallel Protocols		LCD	1		46		
	Wireless protocols		LCD	2		48		
V	Standard single purpose processor's peripherals: timers, counters, watchdog timers	Design Single Purpose Processor and design Embedded System.	LCD	2		50		
	UART, PWM		LCD	1		50		
	LCD controllers, keypad controllers		LCD	1		52		
	Stepper motor controllers		LCD	2		54		
	ADC and RTC		LCD	2		56		
	Digital Camera		LCD	2		58		
	Orchestra Playing Robots		LCD	2		60		

S. Nagpal
Signature of the Faculty

Signature of the HOD

Date: 27/11/2018

LESSON PLAN

Academic Year : 2018-2019

Year & Semester : II Year II Semester

Branch : Master of Computer Applications

Subject Code & Name : CA225(C) & Object Oriented Modeling and Design using UML

Name of Faculty : Sri Bh.Krishna Mohan & Smt. M.Vasavi

UNIT NO	Topic of syllabus covered	Learning Outcomes	Teaching Mode (BB/DB/LCD/OHP)	Hours Required	Total No. of Hours(cumulative)	Expected date of completion (for each unit) by HOD	Review/ Remarks (BY HOD)
				L/T			
I	**Introduction** What is Object Orientation	1. Construct models to Show the importance of systems analysis and design in solving complex problems. 2. Differentiate how the object-oriented approach differs from the traditional approach to systems analysis and design.	BB	1	1		
	What is OO development?		BB	1	2		
	Discussed OO Themes.		BB	1	3		
	Evidence for usefulness of OO Development		BB	1	4		
	Modeling as Design Technique		BB	1	5		
	Introduction, Modeling		BB	1	6		
	Abstraction		BB				
	Three Models		BB	1	7		
	Class Modeling		BB	1	8		
	Object and Class Concepts		BB				
	Link and Association Concepts		BB	1	9		
	Generalization and Inheritance		BB				
	A Sample Class Model		BB				
	Advanced Class Modeling		BB	1	10		
	Advanced object and Class concepts		BB				
	Association Ends		BB				
	N-Ary Association		BB	1	11		
	Aggregation		BB				
	Abstract Classes		BB				
	Multiple Inheritance		BB	1	12		
	Reification		BB				
II	**State Modeling**	Explain the importance of modelling and how the	BB	1	13		
	Events		BB				
	States		BB				

	Transitions and Conditions	Unified Modelling Language (UML) represents an object-oriented system using a number of modelling views.	LCD	2	14		
	state diagrams		LCD				
	State diagram behavior.		BB	1	15		
	Nested State diagrams		LCD	1	16		
	Nested States		BB	1	17		
	Signal generalization		BB				
	Concurrency		BB				
	A sample state model		BB	1	18		
	Interaction Modeling		BB				
	Use case models	Construct various UML models (including use case diagrams, class diagrams, interaction diagrams, state chart diagrams, activity diagrams, and implementation diagrams) using the appropriate notation.	BB	1	19		
	Sequence models		BB				
	Activity Models		BB				
	Advanced Interaction Modeling		BB	1	20		
	Use case relationships		LCD	2	22		
	Procedural Sequence Models		LCD	1	23		
	Special Constructs for Activity Models		BB	1	24		
III	**Process Overview**	Recognize the difference between various object relationships: inheritance, association, whole-part, and dependency relationships.	BB	1	25		
	Development Stages		BB				
	Development Life Cycle		LCD	2	27		
	System Conception		LCD				
	Devising a Concept		BB	1	28		
	Elaborating a Concept		BB				
	Preparing a Problem Statement		BB				
	Domain Analysis		BB	1	29		
	Overview of Analysis		BB	1	30		
	Domain Class Model		BB	1	32		
	Domain State Model		BB				
	Domain Interaction Model		BB	1	34		
	Iterating the Analysis		BB	1	36		
IV	**Application Analysis**	Describe the importance of Application model.	BB	1	37		
	Application Interaction Model		BB	1	38		
	Application Class Model		LCD	2	39		
	Application State Model		LCD				
	Adding Operations		BB	1	40		
	System Design	Show the role and function of each UML model in developing object-oriented software.	BB	1	41		
	Overview of System Design		LCD	1	42		
	Estimating Performance		LCD	1	42		
	Making a Reuse Plan		BB	1	43		
	Breaking a system into Subsystem		BB	1	43		
	Identifying a Concurrency		BB	1	44		

	Allocation of Subsystems		BB	1	44		
	Management of Data Storage		BB	1	45		
	Handling Global resources		BB	1	46		
	Choosing a Software Control Strategy		BB	1	46		
	Handling Boundary Conditions		BB	1	47		
	Setting Trade-off priorities		BB	1	47		
	Common Architecture of ATM Systems		LCD	1	48		
V	**Class Design**	Apply the Rational Software Suit for the construction of UML models and expressing the appropriate notation associated with each model.	BB	1	49		
	Overview of Class design		BB	1	50		
	Realizing Use Cases		BB	1	52		
	Designing Algorithms		BB				
	Recursing Downward		BB				
	Refactoring		BB	1	53		
	Design Optimization						
	Reification of Behaviour						
	Adjustment of Inheritance		BB	1	55		
	Organizing a Class Design						
	Implementation Modeling		BB	1	57		
	Overview of Implementation						
	Fine Tuning Classes						
	Fine Tuning Generalization						
	Realizing Associations		BB	1	58		
	Testing						
	Programming Style						
	Object-Oriented Style		BB	1	59		
	Reusability						
	Extensibility						
	Robustness		BB	1	60		
	Programming-in the large						

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2.

Signature of the Faculty

Signature of the HOD

Date: 27/11/2018

LESSON PLAN

Academic year: 2016-2017
Year & semester: I B.Tech & I Semester
Branch: Civil Engineering
Subject code & name: **CE101 &DIFFERENTIAL EQUATIONS**
Name of faculty: Dr.Ch.H.K.Gopal

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
	Introduction to syllabus		BB	2		2
1.	Definition-Formation of differential equation	Understand methods of solving first order differential equations.	BB	2		4
	Equations of first order and first degree: Linear equations, Bernoulli's equation.	Understand methods of solving first order differential equations.	BB	4		8
	Exact differential equations - Equations reducible to exact equations.	Understand methods of solving first order differential equations.	BB	4		12
2.	Applications of differential equations of first order. Orthogonal trajectories, Newton's law of cooling.	Understand some physical applications of first order differential equations	BB	6		18
	Higher order Linear Differential Equations: Definitions–Operator D–Rules for finding the complementary function.	Understand some physical applications of first order differential equations	BB	6		24

3.	Inverse operator–Rules for finding Particular Integral–working procedure. Method of variation of parameters.	To solve higher order differential equations	BB	6		30
	Equations reducible to linear equations with constant coefficients: Cauchy's and Legendre's Linear equations.	To solve higher order differential equations	BB	6		36
4.	Partial Differential Equations Formation-Equations	To solve partial differential equations	BB	3		39
	solvable by direct integration	To solve partial differential equations	BB	2		41
	Linear equations of first order- Lagrange's linear equation.	To solve partial differential equations	BB	3		44
	Linear Homogeneous partial differential equations of higher order with constant coefficients.	To solve partial differential equations	BB	4		48
5.	LAPLACE TRANSFORMS Introduction-Transforms of elementary functions	To understand Laplace transforms.	BB	2		50

	Properties of Laplace transforms – Transforms of derivatives and integrals – Multiplication by t^n and division by t –	To understand Laplace transforms.	BB	4		54
	Evaluation of integrals by Laplace transforms. Inverse transforms	To understand Laplace transforms.	BB	2		56
	Convolution theorem (without proof).	To understand Laplace transforms.	BB	2		58
	Applications of Laplace transforms for solving linear ordinary differential equations up to second order with constant coefficients only.	To understand Laplace transforms.	BB	2		60

(Dr Ch. H.K. Gopal)

LESSON PLAN

Academic year: 2016-2017
Year & semester: I-B.Tech.& ISemester
Branch: Physics
Subject code & name: **CE-102 & Engineering Physics**
Name of faculty: Dr. R. Rama Kumar

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
	Introduction To Engineering Physics		BB	1		1
1.	Properties of ultrasonics	Awareness of properties	BB	1		2
	Production of ultrasonics by magnetostriction method	Knowledge of production	BB	1		3
	Piezo electric oscillator method	Knowledge of oscillator method	BB	1		4
	Detection by acoustic grating method	Knowledge of detection method	BB	1		5
	Applications of ultrasonics in industry & medicine	Knowledge of applications	BB	1		6
	Ultrasonic testing methods :pulse echo technique (reflection & transmission modes)	Knowledge of echo technique	BB	2		8
	Ultrasonic imaging (A Scan & B-Scan)	Knowledge of scans	BB	1		9
2.	Fundamental Concepts Of Interference And Stoke's Principle	Knowledge of interference	BB	1		10
	Interference In Thin Films Due To Reflected Light - Cosine Law	Knowledge of cosine law	BB	1		11
	Determination Of Angle Of Wedge Or Thickness Of Paper Foil	Knowledge of angle of wedge	BB	1		12

	Newton's Rings - Experimental Setup And Description For Ring Formation	Knowledge of ring formation	BB	1		13
	Theory Of Newton's Rings (Reflected System)	Awareness of theory of rings	BB	1		14
	Introduction To Diffraction And Classification	Various definitions	BB	2		16
	Fraunhofer's Diffraction At A Single Slit	Knowledge of diffraction at single slit	BB	1		17
	Diffraction At 'n" Parallel Slits	Knowledge of grating	BB	2		19
	Fundamental Concepts Of Polarisation	Various definitions	BB	1		20
	Double Refraction	Knowledge of double refraction	BB	1		21
	Nicol Prism - Construction And Working & Quarter Wave Plate	Awareness of Nicol prism	BB	2		23
	Production Of Plane, Circularly And Elliptically Polarised Lights	Knowledge of production of polarized lights	BB	2		25
	Detection Of Plane, Circularly And Elliptically Polarised Lights And Solving Of Problems	Knowledge of detection of polarized lights	BB	2		27
3.	Introduction To Lasers	Knowledge of lasers	BB	1		28
	Einstein's Theory	Knowledge of Einstein's theory	BB	2		30
	Population Inversion, Pumping And Basic Components Of A Laser Oscillator	Knowledge of various terms	BB	1		31
	Relation Between Einstein Coefficients	Knowledge of Einstein coefficients	BB	1		32
	He-Ne Laser And Its Working	Knowledge of He-Ne laser	BB	2		34

	Nd:YAG Laser	Knowledge of Nd:YAG Laser	BB	1		35
	Semiconductor Laser And Its Working With The Help Of Energy Level Diagrams	Knowledge of Semiconductor laser	BB	2		37
	Applications of Lasers & Holography - Recording And Reconstruction Of A Hologram	Awareness of applications and holography	BB	2		39
	Fiber Optics - Introduction, Structure And Principle	Knowledge of fibers	BB	1		40
	Acceptance Angle, Numerical Aperture And Fractional Refractive Indices Change	Knowledge of various terms	BB	1		41
	Types Of Optical Fibers And Advantages	Knowledge of different fibers	BB	2		43
	Optical Fiber Communication System And Applications	Awareness of applications	BB	1		44
4.	Introduction To Quantum Mechanics - Dual Nature Of Radiation And De Broglie's Hypothesis	Knowledge of quantum mechanics	BB	1		45
	Properties Of Matter Waves And Davisson - Germer's Experimental Study Of Matter Waves	Knowledge of properties and experimental study		2		47
	Heisenberg's Uncertainty Principle And Experimental Verification	Knowledge of uncertainty principle	BB	1		48
	Schroedinger's Time Independent Wave Equation	Knowledge of wave equation	BB	1		49
	Particle In A 1D Box	Knowledge of particle in a box	BB	2		51
	Tunnelling Effect - Calculation Of Transmission Probability	Knowledge of tunnelling	BB	1		52
5.	Induced Electric Fields And Maxwell's Equations	Knowledge of Maxwell's equations	BB	2		54
	Equation Of EM Waves And Solving Of Problems	Knowledge of EM waves	BB	2		56
	LC Oscillations	Knowledge of Oscillations	BB	1		57

CDr A.G.K. Murthy

	Conduction And Displacement Currents	Knowledge of currents	BB	1		58
	Poynting's Theorem and brief review	Knowledge of Theorem	BB	2		60

(Dr. A.G.K. Murthy)

CE103 - APPLIED CHEMISTRY (R16)

LESSON PLAN AND DELIVERY:

UNIT-I : 16 Periods	No.of Periods
Brief introduction of water technology	1
Definition of hardness of water, temporary and permanent hardness,	1
Units-ppm, mg/liter, degree French, degree Clarke, problems on hardness.	2
Determination of hardness of water by EDTA method and related problems	2
General introduction of water treatment for industrial use	
Boiler troubles with treatment to scales and sludges and prevention	2
Internal conditioning methods	
Boiler troubles with respect to caustic Embrittlement, Boiler corrosion, Priming and Foaming and their prevention and disadvantages.	4
Lime soda process and problems	2
Softening by ion exchange process and problems,	1
Desalination of brackish water by electro dialysis, Reverse osmosis	1

(Dr. E Nageswara Rao)

UNIT-II : 12 Periods	
Drinking water quality parameters (WHO guidelines)	1
Municipality water treatment for drinking purpose, sedimentation, coagulation, filtration	3
Methods of chlorination, Breakpoint chlorination	2
General introduction of phase rule	
Statement and explanation of the terms involved in phase rule	2
Description of one component water system	1
Condensed phase rule, Construction of phase diagram by thermal analysis	
Simple eutectic system (Pb – Ag system only)	2
Applications of Eutectic compounds	1
UNIT-III : 10 Periods	
Introduction to Electrode potential, Nernst equation and related problems	2
Electrochemical series and its significance	1
Reference electrodes-SHE and Calomel electrode	1
Ion selective-Glass electrode-pH determination	1
General introduction about energy systems with respect to batteries	
Types of electrochemical energy systems	
Electro chemistry of primary batteries (Lechlanche cell)	1
Secondary cells, lead acid cell, importance	1
Ni-Cd cell, importance and applications	1
Lithium batteries, importance, applications and their advantages	2

(Dr. E. Nageswara Rao)

UNIT – IV : 11 Periods	
Corrosion introduction, theory of dry corrosion, pilling bedworth rule Theory of wet corrosion Types-Galvanic corrosion -- Differential aeration corrosion-examples stress corrosion Factors-pH, over voltage, temperature, design Cathodic protection – Impressed current and sacrificial anode methods -- Corrosion inhibitors-types and mechanism of inhibition Metallic coating- Galvanisation, Tinning, Electroplating (Cu) and Electroless plating (Ni)	2 1 1 2 2 1 2
UNIT – V : 11 Periods	
Introduction to analytical techniques Beer-Lambert's law and its derivation UV-spectroscopy –types of electronic transitions Chromophores and auxochromes Absorption and intensity shifts Infra-red spectroscopy-modes of vibrations Instrumentation of UV spectroscopy Instrumentation of IR spectroscopy -- Colorimetry-estimation of iron Conductometric titration-(HCl vs NaOH) Potentiometric titration-(Fe(II) vs $K_2Cr_2O_7$)	1 1 1 1 2 1 1 1 1 1

(Dr E. Nageswara Rao)

LESSON PLAN

Academic year: 2016-17
Year &Semester :I B.Tech& I Semester
Branch: Civil Engineering
Subject Code & Name: CE 104& English for Communication
Name of the faculty: K. Sudhakar

Unit No.	Topic of the syllabus covered	Learning Outcomes	Teaching mode: BB/OHP/ LCD	Hours required: (Theory)	Hours required: (Tutorial)	Total hours cumulative
1.	Words often confused	The use of Vocabulary.	BB	1		1
	Note Making and Note Taking	Writing Skills	BB	1		2
	Note Making and Note Taking	Writing Skills	BB	1		3
	Activity: JAM	Speaking skills.	BB	1		4
	Note Making and Note Taking	Writing Skills	BB	1		5
	Memorandum	Writing Skills	BB	1		6
	Memorandum	Writing Skills	BB	1		7
	Memorandum	Writing Skills	BB	1		8
2.	Grammar: Tenses.	Application of grammar rules.	BB	1		9
	Grammar: Tenses.	Application of grammar rules.	BB	1		10
	Grammar: Tenses & One-word substitution.	Application of grammar rules &The use of Vocabulary	BB	1		11
3.	Proposal Writing	Writing Skills	BB	1		12
	Proposal Writing	Writing Skills	BB	1		13
	Paragraph writing & Analogies	Writing Skills & Analytical Skills	BB	1		14
	Paragraph writing & Analogies	Writing Skills & Analytical Skills	BB	1		15
	Grammar: Articles	Application of grammar rules.	BB	1		16
	Assignment Qs. Discussed.	Exam preparation.	BB	1		17
	Revision.	Exam preparation.	BB	1		18
	Revision & JAM.	Exam preparation & Speaking skills.	BB	1		19

4.	Kinesics	Non-Verbal communication skills.	BB	1		20
	Forms Of Communication	Speaking skills	BB	1		21
	Barriers To Communication - Proxemics & Haptics.	Non-Verbal communication skills.	BB	1		22
5.	E- Mail Writing.	Writing Skills	BB	1		23
	Precis Writing.	Writing Skills	BB	1		24
	Active Voice & Passive Voice.	Application of grammar rules.	BB	1		25
	Letter Writing	Writing Skills	BB	1		26
	Voice And Speech	Application of grammar rules.	BB	1		27
	Voice And Speech	Effective Communication	BB	1		28
	Revision.	Effective Communication	BB	1		29

(K. SUDHAKAR)

M. Rama Rao
HOD, CE

IT105 (R16) Programming with C

Academic Year : 2016-2017

Year & Semester : B.Tech / I Year I SEM (CE A Section , CE B SECTION & CE C SECTION)

Branch : CIVIL ENGINEERING

Subject Code & Name : CE105 (R16) Programming with C

Name of Faculty : Sri. K.Subramanyam /Sri A.Yaswanth kumar /Smt.G.Swetha

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)
				L	T	
1	UNIT – I Introduction To Computers	Understand the basic terminology of the computer	BB	1		1
2	Block Diagram Of Computer	Understand the components of the computer	BB	1		2
3	Different Types Of Memory	Familiarize with types of memory devices	BB	1		3
4	Programming Languages And Types Of Software	Understand types of programming languages	BB	1		4
5	Algorithms	Able to develop algorithm for problems	BB	1		5
6	Algorithms	Able to develop algorithm for problems	BB	1		6

7	Flow Charts	Able to draw the flowchart	BB	1		7
8	C Basics	Familiarize with basics of C Programming	BB	1		8
9	C Basics	Familiarize with basics of C Programming	BB	1		9
10	Data Types, Constants	Understand different datatypes and constants	BB	1		10
11	Operators	able to write program on operators	BB	1		11
12	Operators	able to write program on operators	BB	1		12
13	Control Structures	Understand different control structures	BB	1		13
14	Control Structures	Understand different control structures	BB	1		14
15	Programs On Control Structures	Able to write programs on control structures	BB	2		16
16	Programs On Control Structures	Able to write programs on control structures	BB	1		17
17	Introduction To Arrays	Understand the concepts of arrays in C	BB	1		18
18	Programs On One Dimensional Arrays	Able to develop programs using 1D arrays	BB	1		19
19	Programs On One Dimensional Arrays	Able to develop programs using 1D arrays	BB	1		20

20	Searching And Sorting	Able to develop programs on searching and sorting	BB	1		21
21	Two Dimensional Arrays	Understood the concept of 2D arrays	BB	1		22
22	Programs On 2d Arrays	Able to develop programs using 2D arrays	BB	1		23
23	Introduction To Functions	Familiarize with concepts of functions	BB	1		24
24	Programs On 1d Arrays Using Functions	Able to develop programs using functions and 1D array	BB	1		25
25	Recursion, Programs And Storage Classes	Able to develop recursive programs	BB	4		26
26	String Handling Functions	Familiarize with different string handling functions	BB	1		27
27	Programs On String Handling Functions	able to develop using built in string functions	BB	1		28
28	Introduction To Pointers	Familiarize with concepts of pointers	BB	1		29
29	Character Handling Functions And Programs	Develop programs using built in character handling functions	BB	1		30
30	Function Calling Mechanisms	Able to develop programs using different function handling mechanisms	BB	1		31
31	Programs On Call By Reference	Able to develop programs using different function handling mechanisms	BB	1		32

32	Programs On Strings	Able to write programs on strings	BB	1		**33**
33	2d Character Arrays	Able to develop programs using character arrays	BB	1		34
34	Passing 1d Array , 2d Array To Functions	Able to write programs using arrays and functions	BB	1		35
35	Introduction To Structures, Programs	Familiarize with concepts of structures	BB	2		37
36	Array Of Structures	Able to develop programs on structures using arrays	BB	1		38
37	Passing Structures To Functions	Able to develop programs on structures using functions	BB	1		39
38	Passing Array Of Structures To Functions	Able to develop programs on structures using functions	BB	1		40
39	Nested Structures	Able to develop programs using nested structures	BB	1		41
40	Programs On Structures	Able to develop programs on structures	BB	1		42
41	Unions	Familiarize with concepts of unions	BB	1		43
42	Dynamic Memory Allocation	Understood the different functions of Dynamic Memory Allocation	BB	1		44
43	Programs On Dynamic Memory Allocations	Able to write programs on Dynamic Memory Allocation functions	BB	1		45

44	Introduction To Files	Familiarize with concepts of files	BB	1		46
45	File Processing Functions	Able to develop programs using different file processing functions	BB	1		47
46	File Programs	Able to develop programs using concepts of files	BB	1		48
47	Random Access File Functions	Able to develop programs using concepts of files	BB	2		50
48	File Programs	Able to develop programs using concepts of files	BB	1		51
49	File Programs	Able to develop programs using concepts of files	BB	2		53
50	Command Line Arguments	Able to develop programs using command line arguments	BB	1		54
51	Pre Processor Directives	Understood the different pre processor directives	BB	1		55

(A. Yaswanth Kumar)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year:2016-2017
Year & semester:I st YEAR, I SEMESTER
Branch: Civil Engineering
Subject code & Name: CE106 ENGINEERING MECHANICS
Name of faculty: N.Tejaswini

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	Syllabus Discussion On Engineering mechanics Principles of statics Composition of forces, parallelogram law, numerical problems	Basics on mechanics and understand the system of forces	BB	2		2
	Resolution of forces, equilibrium of collinear forces, super position and transmissibility, free body diagram	Construct free body diagrams and use appropriate equilibrium equations	BB	2		4
	Equilibrium of concurrent forces Lami's theorem, Method of projection	Construct free body diagrams and use appropriate equilibrium equations	BB	2		6
	Rectangular components of a force, Resultant and equilibrium of concurrent forces in a plane	Calculate unknown forces in a plane by resolution of force and equilibrium equations	BB	2		8
	Method of projections.	Calculate unknown forces in a plane by resolution of force and equilibrium equations	BB	2		10
	Numerical problems on equilibrium of concurrent forces	Calculate unknown forces in a plane by resolution of force and equilibrium equations	BB	2		12
2	Moment of a force about a point, Couple, Resultant and equilibrium of parallel forces in a plane	Calculation of moment about a point and calculation of Resultant and equilibrium of parallel forces in a plane	BB	2		14
	Numerical problems	Calculation of moment about a	BB	2		16

		point and calculation of Resultant and equilibrium of parallel forces in a plane				
	Centre of parallel forces and centre of gravity	Locate Centroid of parallel forces	BB	2		18
	Centroids of composite plane figures	Locate Centroid of composite figures	BB	2		20
	Centroids of curves.	Locate Centroid of curves	BB	2		22
	Numerical problems		BB	2		24
3	Moment of inertia of a rigid body , numerical examples	Locate Centroid of composite figures and determine moment of inertia of material bodies, plane figures	BB	2		26
	Moment of inertia of a lamina; numerical examples	Locate Centroid of composite figures and determine moment of inertia of material bodies, plane figures	BB	2		28
	Moments of inertia of three-dimensional bodies, numerical examples	Locate Centroid of composite figures and determine moment of inertia of material bodies, plane figures	BB	2		30
	Moment of inertia of a plane figure with respect to an axis in its Plane, numerical examples	Locate Centroid of composite figures and determine moment of inertia of material bodies, plane figures	BB	2		32
	Moment of Inertia with respect to an axis perpendicular to the plane of the figure,numerical examples	Locate Centroid of composite figures and determine moment of inertia of plane figures	BB	2		34
	Parallel axis theorem , numerical examples	Locate Centroid of composite figures and determine moment of inertia	BB	2		36
4	Resultant and equilibrium of general case of parallel forces in a plane.	Determine the axial forces in the members of determinate truss	BB	2		38
	Statically determinate plane trusses-Method of joints	Determine the axial forces in the members of determinate truss	BB	2		40
	Statically determinate plane trusses - Method of sections	Determine the axial forces in the members of determinate truss	BB	2		42
	Friction: Definition of friction,	Analyze the systems with friction.	BB	2		44

	static friction, dynamics friction, coefficient of friction, angle of friction, angle of repose.					
	Wedge friction, simple friction problems based on sliding of block on horizontal and inclined plane and wedge friction	Analyze the systems with friction.	BB	2		46
	Ladder and rope friction, simple problems on ladder and rope friction.	Analyze the systems with friction.	BB	2		48
5	Principle of virtual work: Equilibrium of ideal systems, Stable and Unstable equilibrium.	Calculate unknown forces using virtual work equation	BB	2		50
	Numerical problems on virtual work.	Calculate unknown forces using virtual work equation	BB	2		52
	Numerical problems on virtual work.	Calculate unknown forces using virtual work equation	BB	2		54
	Force Systems in Space (using vector notation): Position vector, Unit vector, Force vector, Component of a force about an axis, Moment of a force about a point, Moment of a force about an axis,Couple	Determine forces in space using equilibrium equations	BB	2		56
	Resultant and equilibrium of concurrent forces in space, Resultant and equilibrium of parallel forces in space	Determine forces in space using equilibrium equations	BB	2		58
	Centre of parallel forces and centre of gravity	Determine forces in space using equilibrium equations	BB	2		60

N. Tejaswini
(NANDIPATI. TEJASWINI)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2016-2017
Year & semester: IB.Tech& II Semester
Branch: Civil Engineering
Subject code & name: **CE107&Calculus**
Name of faculty: Dr. K.S. Balamurugan

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/ LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
	Introduction to syllabus		BB	1		1
1.	Characteristic equation, Eigen values and Eigen vectors	Do problems on matrices and linear algebra in a comprehensive manner.	BB	3		4
	Cayley – Hamilton Theorem	Do problems on matrices and linear algebra in a comprehensive manner.	BB	3		7
	Diagonalization of matrices, reduction of quadratic form to canonical form	Do problems on matrices and linear algebra in a comprehensive manner.	BB	5		12
2.	Rolle's theorem.	Know the fallouts of Rolle's Theorem that is fundamental to application of analysis to Engineering problems.	BB	2		14
	Lagrange's mean value theorem	Know the fallouts of Lagrange's mean value Theorem that is fundamental to application of analysis to Engineering problems.	BB	2		16
	Taylor's and Maclaurin series	Learn the expansions of infinite series	BB	2		18
	Maxima and minima of two variables and Lagrange's method of undetermined multipliers.	Learn to find the maxima and minima of several variables.	BB	6		24

3.	Introduction to Multiple Integrals, Evaluation Of Double Integrals and Change of order of Integration	Learn to evaluate double integrals and Learn to evaluate double integrals by changing order of integration	BB	3		27
	Double Integrals In Polar Coordinates	Learn to evaluate double integrals in polar coordinates	BB	2		29
	Area by double integrals	Learn to find the area bounded by the curve.	BB	2		31
	Change Of Variables	Learn to evaluate double integrals by changing Cartesian to polar coordinates	BB	1		32
	Evaluation of triple integrals and volume by triple integral	Learn to evaluate triple integrals and to find the volume by triple integrals.	BB	4		36
4.	Introduction to vector calculus	Learn the basics of vector calculus	BB	1		37
	Gradient, Divergence, Curl	Learn the applications of gradient, divergence and curl.	BB	4		41
	Line integrals, Green's theorem	Learn to evaluate line integrals	BB	2		43
	Surface integrals, Stokes theorem	Learn to evaluate surface integrals	BB	2		45
	Volume integrals and Gauss divergence theorem	Learn the applications of triple integrals	BB	3		48
5.	Complex variables: Differentiation and analytic functions	Understand differentiation of functions of complex variables.	BB	3		51
	Cauchy-Riemann equations, Harmonic functions, Milne-Thomson method.	Knowledge to apply Cauchy-Riemann equations in application problems.	BB	3		54
	Complex integration: Line integrals, Cauchy integral theorem and Cauchy integral formula.	Knowledge on complex integration	BB	6		60

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(Dr. K. S. Balamurugan)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2016-2017
Year & semester: I-B.Tech.& II Semester
Branch: Physics
Subject code & name: **CE-108 & Physics of Materials**
Name of faculty: Dr. R. Rama Kumar

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
	Introduction To Physics Of Materials		BB	1		1
1.	Elasticity Of Solids , Hooke's Law, Stress, Strain, Three Moduli Of Elasticity, Rigidity Modulus And Poisson's Ratio	Awareness of various definitions	BB	1		2
	Relation Between Elastic Constants And Principle Of Superposition	Knowledge of various relations	BB	1		3
	Stress-Strain Relationship Curve	Knowledge of relationship curve	BB	1		4
	Factors Affecting Elastic Properties and Elastic Energy	Knowledge of factors affecting elastic properties	BB	1		5
	Shafts, Examples, Requirements And Hallow Shaft Is Stronger Than Solid One	Knowledge of shafts and requirements	BB	1		6
	Torsion Pendulum - Determination Of Moment Of Inertia Of Disc And Rigidity Modulus Of The Material Of Wire	Knowledge of torsion pendulum	BB	2		8
	Bending Of Beams andBending Moment	Various definitions	BB	1		9
	Calculation Of Strain And Restoring Force In The Bent Beam	Knowledge of strain and restoring force	BB	1		10
	Depression Of A Cantilever	Knowledge of depression	BB	1		11
	Non-Uniform Bending and Uniform Bending	Knowledge of bending	BB	1		12

	Solving Of Problems	Knowledge of solving of problems	BB	1		13
2.	General Concepts Of Fluid Flow and Types Of Fluids	Awareness of general concepts	BB	2		15
	Surface Tension And Classification Of Fluid Flows	Various definitions	BB	2		17
	Variation Of Pressure In A Fluid At Rest	Knowledge of variation of pressure	BB	1		18
	Pascal's Law - Statement , Proof And Archimedes' Principle With Examples	Knowledge of various laws	BB	1		19
	Buoyancy, Meta-Centre And Meta-Centric Height	Various definitions	BB	1		20
	Stability Of A Submerged Body and Stability Of A Floating Body	Knowledge of stability of bodies	BB	2		22
3.	Translational, Rotational Motions, Rigid Body And Moment Of Force (Torque)	Awareness of Translational and Rotational Motions	BB	1		23
	Angular Momentum, Relation Between Torque And Angular Momentum	Knowledge of angular momentum	BB	2		25
	Work Energy, Impulse Momentum Theorems and D'Alembert'sPrinciple	Knowledge of theorems and principle	BB	2		27
	Equilibrium Of Rigid Bodies, Equation Of Rotational Motion, Comparison Of Linear And Rotational Motions	Knowledge of equilibrium of rigid bodies	BB	2		29
	Moment Of Inertia - Definition, Derivation And Relations For Some Regular Bodies About Specific Axis	Knowledge of various definitions	BB	2		31
	Perpendicular And Parallel Axes Theorems With Examples	Knowledge of various theorems	BB	2		33
4.	Nano Materials - Brief Introduction And Definitions Of Fundamentals	Knowledge of fundamentals of nano materials	BB	1		34

	Properties Of Nano Materials and Preparation Of Nano Materials - Top Down And Bottom Up Approaches	Knowledge of preparation of nano materials	BB	2		36
	Chemical Vapour Deposition Method and Sol - Gel Method	Knowledge of CVD and Sol-gel method	BB	3		39
	Applications Of Nano Materials	Knowledge of applications	BB	1		40
5.	Composite Materials - Introduction And Classification	Awareness of composite materials	BB	1		41
	Large Particle, Dispersion Strengthened Composites and Fibre Reinforced Composites	Knowledge of various definitions of composites	BB	1		42
	Processing Methods For Composite Materials - Wet/Hand Lay Up Method	Knowledge of preparation methods	BB	1		43
	Prepreg Method For Fibre Reinforced Composite Materials and Applications	Knowledge of different methods of composites	BB	1		44
	Introduction to Smart Materials	Awareness of smart materials	BB	1		45
	Shape Memory Alloys (SMA)	Knowledge of SMA	BB	1		46
	Applications Of Smart Materials	Knowledge of applications		1		47
	Chromic Materials and Rheological Fluids (Electro And Magneto)	Knowledge of materials and fluids	BB	2		49
	Introduction To Ceramics, Classification, Processing Techniques and Applications	Knowledge of ceramics	BB	2		51
	Ceramic Fibers	Knowledge of ceramic fibers	BB	1		52

(Dr A.S.K. Murthy)

CE109 – CHEMISTRY OF ENGINEERING MATERIALS(R16)

LESSON PLAN AND DELIVERY:

S.No.	Topics to be covered	No. of periods
	Unit-I	**10**
1	Introduction to polymers, functionality, degree of Polymerisation	1
2	Types of polymerisation-addition and Condensation	1
3	Co-polymerisation	1
4	Free radical polymerisation	1
5	Introduction to conducting polymers	1
6	Polyacetylene-mechanism of conduction	2
7	Examples of conducting Polymers	1
8	Applications of conducting polymers	2
	Unit-II	**10**
9	Resins-types-thermoplastic and thermosetting	1
10	Preparation, properties and uses of Bakelite	1
11	Preparation, properties and uses of Polyester and PVC	1
12	Preparation, properties and uses of Teflon	1
13	Compounding of plastics	1
14	Introduction to rubber, Processing of latex	1
15	Preparation, properties and uses of styrene and nitrile rubber	1
16	Preparation, properties and uses of polyurethane rubber	1

17	Preparation, properties and uses of epoxy resin	1
18	Preparation, properties and uses of silicone rubber	1
	Unit-III	**10**
19	Fuels-types and units of heat	1
20	Determination of calorific value using bomb Calorimeter	1
21	Calculation of HCV and LCV	1
22	Problems on HCV and LCV	1
23	Ranking of coal-proximate analysis of coal	1
24	Ultimate analysis of coal	1
25	Carbonization of coal, Beehive oven	1
26	Refining of petroleum- Fractional distillation of petroleum	1
27	Cracking of heavy oil	1
28	Reforming of gasoline, Composition and uses- Petrol, Diesel, LPG, CNG	1
	Unit-IV	**10**
29	Refractories-Introduction and characteristics	1
30	Classification of refractories-Acidic, Basic and Neutral	1
31	Properties of refractories	1
32	Chemistry of silica, fireclay and SiC bricks	1
33	Lubricants-classification, Functions	1
34	Properties of lubricants- Viscosity, Viscosity index, Flash point, Fire point, Cloud point, Pour point, Oiliness	4
35	Determination of viscosity of lubricants-Redwood viscometer	1

	Unit-V	10
36	Liquid crystals-introduction, Classification of liquid crystals	1
37	Thermotropic liquid crystals	1
38	Lyotropic liquid crystals	1
39	Liquid crystals-structural requirements	1
40	Applications of liquid crystals	1
41	Liquid crystals-applications	1
42	Continuation of other applications of liquid crystals	1
43	Explosives-introduction, Characteristics of explosives	1
44	Terms involved in explosives, Classification of explosives	1
45	Manufacture of lead azide, gun powder, RDX and GTN	1

(Dr. E. Nageswara Rao)

LESSON PLAN

Academic year: 2017-18
Year & semester: I Year II semester
Branch: Civil Engineering
Subject code & name: **CE110 Environmental Studies (R16)**
Name of faculty: Ms. U. Pallavi

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/ LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	**Introduction**	Define and explain the basic issues concerning the ability of the human community to interact in a sustainable way with the environment				
	Definition, Multidisciplinary nature,		BB	1		1
	Scope and Importance of environmental studies		BB	1		2
1	**Natural Resources**					
	Forest Resources – Use and over-exploitation, Deforestation, Mining, dams and their effects on forests and tribal people	Explain the basic issues concerning the ability of the human community to interact in a sustainable way with the environment	BB	2		4
	Water Resources – Use and over-utilization of surface and ground water, floods and droughts, Water logging and salinity		BB	2		6
	Dams – benefits and problems, Conflicts over water		BB	1		7
	Energy resources – Energy needs, Renewable and non-renewable energy sources		BB	1		8
	Land resources – Land as a resource, land degradation, soil erosion & desertification	Explain the basic issues concerning the ability of the human community to interact in a sustainable way with the environment	BB	1		9
	Effects of modern agriculture on land resources		BB	1		10

2	**Ecosystems**					
	Definition, Structure and functions of an Ecosystems	Describe and discuss the environmental implications of biologically important materials through the ecosystems	BB	1		11
	Biogeochemical cycles-water, carbon, nitrogen and water cycles		BB/LCD	2		13
	Types-Forest, Greenland, Desert, Aquatic ecosystem		BB	2		15
2	**Biodiversity and its Conservation**					
	Definition of Biodiversity, Values and threats to biodiversity and conservation of biodiversity	Describe and discuss the environmental implications of biologically important materials through the ecosystems	BB	2		17
	Bio-geographical classification of India, India as a mega-diversity nation, Hot-spots of biodiversity		BB	2		19
	IUCN classification of Biodiversity; Endemic, Exotic and Endangered species - Meaning with a few examples from India		BB	2		21
3	**Environmental Pollution**					
	Causes, effects and control measures of Air pollution including Noise	Understands the environmental pollution implications	BB	2		21
	Fresh Water pollution, Marine pollution, Thermal pollution, and nuclear pollution.	Understands the environmental pollution implications	BB	2		25
	Solid wastes - Types based on source (Ex. municipal, industrial, constructional and medical) and nature (degradable and non-degradable); Effects of improper dumping	Understands the environmental pollution implications	BB	2		27
	Solid waste management - Objectives, practices	Understands the environmental pollution implications	BB	1		28
3	**Water shed and its management**					
	Definition and importance	Understands the importance of watershed management	BB	1		29
	Water shed management methods including rain water harvesting	Understands the methods of watershed management	BB	2		31

4	**Social Issues and Environment:**;					
	Definition of sustainable development, key types and measures for sustainable development		BB	2		33
	salient features of Stockholm conference 1972, Earth summit, 1992		BB/LCD	1		34
	Human Population and environment, Green revolution, Resettlement and rehabilitation of people - problems and concerns		BB/LCD	2		36
4	**Climate Changes:**					
	Green House Gases, Kyoto Protocol, Global warming (The story of Tuvalu)		BB/LCD	2		38
	Ozone depletion and Acid rain		BB/LCD	1		39
	Environmental Impact Assessment		BB/LCD	1		40
5	**Environmental acts**					
	Environmental Legislation; Wild life protection act, 1972	Understands the salient features of various acts	BB/LCD	1		41
	Water(Prevention and Control of pollution) act, 1974; Forest Conservation act, 1980	Understands the salient features of various acts	BB/LCD	2		43
	Air (Prevention and Control of pollution) act, 1981; Environmental protection act, 1986	Understands the salient features of various acts	BB/LCD	2		45
5	**International Conventions:**.					
	Stockholm Conference 1972, Earth Summit 1992, Copenhagen Summit 2009	Understands the salient features of various conferences and summits on environmental issues	BB/LCD	2		47
5	**Case Studies**					
	Chipko movement, Narmada Bachao Andolan,	Case studies	BB/LCD	1		48
	Silent Valley Project, Chernobyl Nuclear Disaster	Case studies	BB/LCD	1		49
	Bhopal Tragedy, Ralegaon Siddhi, The story of Ganga	Case studies	BB/LCD	1		50

U. Pallavi
(U. Pallavi)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic Year : 2016-2017

Year & Semester : B.Tech / I Year II SEM

Branch : Civil Engineering

Subject Code & Name : CE111 (R16) ENGINEERING DRAWING

Name of Faculty : Dr.V.Ramakoteswara Rao/ D.Sameer kumar/ K.Hari Prasad

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required	Total number of Hours (cumulative)
			LAB	
Week1	Introduction To Engineering Graphics And Basic Concepts Of Graphics	Able to understand the importance of graphics and all the basic concepts	3	3
Week1	Introduction To Geometric Constructions And Problems Practice For Geometrical Constructions	Able to know how to solve simple construction methods	4	7
Week2	Introduction To Conics And General Construction Method Of Ellipse, Parabola And Hyperbola And Practice	Able to know how conic sections are generated and their constructional methods	3	10
Week2	Problems On Ellipse And Parabola And Practice For Conics	Able to know how conic sections are generated and their constructional methods	4	14
Week3	Practice For Conics	Able to know how conic sections are generated and their constructional methods	3	17
Week3	Introduction To Engineering Curves And Problems On	Able to understand the difference between conics and curves and to construct curves	4	21

	Cycloids, Involute And Spiral			
Week4	Practice For Curves	Able to understand the difference between conics and curves and to construct curves	3	24
Week4	Introduction to scales, problems and practice	How to represent different units using various scales	4	28
Week5	Introduction, Concepts And Problems On Projection Of Points And Straight Lines(1)	Will understand what is projection and also know how simple objects are projected onto the reference planes	4	32
Week5	Practice For Curves	Able to understand the difference between conics and curves and to construct curves	3	35
Week6	Introduction And Problems On Straight Lines2	Will understand what is projection and also know how simple objects are projected onto the reference planes	4	39
Week6	Practice For Straight Lines2	Will understand what is projection and also know how simple objects are projected onto the reference planes	3	42
Week7	Introduction And Problems On Projections Of Planes And Practice	Able to understand how to project 2D objects onto the reference planes	4	46
Week7	Mid-1 And Projection Of Planes	Able to understand how to project 2D objects onto the reference planes	3	49
Week8	Problems On Projections Of Planes And Practice	Able to understand how to project 2D objects onto the reference planes	4	53

Week8	Practice For Projections Of Planes	Able to understand how to project 2D objects onto the reference planes	3	56
Week9	Concepts And Introduction To Projections Of Solids And Problems	Will understand and able to project 3D objects	4	60
Week10	Practice For Solids - 1	Will understand and able to project 3D objects	4	64
Week10	Introduction And Problems On Projections Of Solids 2 And Practice	Will understand and able to project 3D objects	3	67
Week11	Problems And Practice For Projections Of Solids 2	Will understand and able to project 3D objects	4	71
Week11	Practice For Projections Of Solids 2.	Will understand and able to project 3D objects	3	74
Week12	Introduction And Concepts Of Sections And Developments Of Solids. Problems And Practice For The Same Concept	Able to understand how to project a sectioned solid and also develop the sectioned part of the solid by various methods	4	78
Week12	Problems On And Practice For Developments Of Solids	Able to understand how to project a sectioned solid and also develop the sectioned part of the solid by various methods	3	81
Week13	Practice For Sections And Developments Of Solids	Able to understand how to project a sectioned solid and also develop the sectioned part of the solid by various methods	3	84
Week14	Introduction To And Exercise Problems On Orthographic	Able to analyze a 3D object in different positions and draw the	4	88

	Projections And Practice	different views of that object		
Week14	Practice For Orthographic Projections	Able to analyze a 3D object in different positions and draw the different views of that object	3	91
Week15	Introduction And Explanation For Isometric Projections And Practice	Will be able to draw a 3D object from different views	4	95

V Ramakotiswara Rao

M. Rama Rao
HOD, CE.

LESSON PLAN

Academic year: 2017-2018
Year & semester: IIB.Tech&I Semester
Branch: Civil Engineering
Subject code & name: **CE201&Mathematics-IIICOMPUTATIONAL TECHNIQUES & STATISTICAL METHODS**
Name of faculty: Dr. K.S. Balamurugan

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/ LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
	Introduction to syllabus		BB	1		1
1.	Introduction to Fourier series, Euler's formulae	Learn the concept of Fourier Series.	BB	2		3
	Conditions for a Fourier expansion-Functions having points of discontinuity-Change of interval-Even and odd functions.	Understand Fourier series and deal with functions of several variables that are essential in most branches of engineering.	BB	4		7
	Half range cosine and sine series	Learn to find half range cosine and sine series	BB	3		10
	Parseval's formula	Learn to solve engineering problems related to Parseval's formula of Fourier series.	BB	2		12
2.	Newton-Raphson Method and Solution of Linear Simultaneous Equations: Gauss Seidel Iterative Method.	Learn to solve system of equations numerically.	BB	3		15
	Finite Differences & Interpolation Introduction, Differences of a polynomial, Newton's forward and backward interpolation formulae.	Learn to find the polynomial from the given tabular values and Learn to find the value of y for given x numerically in case of equal intervals.	BB	4		19

	Interpolation with Unequal intervals: Lagrange's Interpolation and inverse interpolation.	Learn to find the value of y for given x numerically in case of unequal intervals.	BB	5		24
3.	Numerical Integration: Trapezoidal rule, Simpson's one-third rules.	Learn to evaluate definite integrals using numerical methods.	BB	6		30
	Numerical Solutions of Ordinary Differential Equations (first order): Picard's Method,Euler's Method, Runge-Kutta Method of fourth order.	Learn to find numerical solution of ordinary differential equations.	BB	6		36
4.	Discrete random variables: Poisson and Binomial distributions.	Learn to apply BD, PD to probability problems.	BB	6		42
	Normal Distribution and Exponential distribution.	Learn to solve ND problems using statistical tables.	BB	6		48
5.	Large sample test: Hypothesis concerning one mean and Hypothesis concerning two means.	Learn to apply the steps of testing the hypothesis.	BB	6		54
	Small sample test: Hypothesis concerning one mean and Hypothesis concerning two means.	Learn to apply the steps of testing the hypothesis.	BB	6		60

(Dr. K.S. Balamurugan)

M. Rama Rao
HOD,CE

LESSON PLAN

Academic year: 2018-2019
Year & semester: II B.Tech & I Semester
Branch: Civil Engineering
Subject code & name:**CE202 &Surveying-I**
Name of faculty: Mr. R. Vaishnav Kumar, Mr. K. Ramesh Babu & K. Anjaneyulu

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
	Introduction to syllabus		BB	1		1
1.	**Surveying & Measurements** Basic Definitions; Classification	Awareness of various definitions used in surveying and classification	BB	2		3
	Principles of Surveying; Basic measurements in surveying; Instruments used for different measurements; Units of measurement(linear & Angular);	Knowledge about various measurements and Instruments	BB	1		4
	Plan and map; Scales used for Maps and plans; Phases of survey work and Duties of a surveyor.	Knowledge for conducting survey	BB	1		5
	Linear Measurements Accuracy, Precision; Methods of distance measurement; Equipments for distance measurement	Various equipments used in chain surveying	BB	1		6
	Procedures for distance measurement - Ranging, Chaining/taping a line; Types and Sources of Errors in chaining	Various methods used in chain surveying	BB	2		8
	Taping and their corrections; Degree of accuracy in chaining.	Application of Corrections	BB	2		10
2.	**Chain Surveying** Principle of Chain surveying; Basic definitions; Well-Conditioned & Ill-Conditioned triangles	Various definitions	BB	1		11
	Procedure of Field Work in Chain Surveying; Off-sets;	Knowledge of various procedures	BB	2		13

	Booking the survey (Field Book); Conventional Symbols	in chain surveying				
	Problems encountered in chaining; Obstacles in chain Surveying.	Various methods employed in chaining when problems encountered	BB	2		15
	Minor instruments & Errors Optical Square; Prism Square; Simple Clinometer; Sources and types of errors; Significant figures, rounding of Numbers	Knowledge on various errors which occur in surveying	BB	2		17
	Probability in Survey measurements; Normal distribution; Errors in computed results; Weights of measurements.	Knowledge on various theories of measurement	BB	4		21
3.	**Compass Surveying** Angles and Bearings; Instruments used to measure angles and bearings; Designation of Bearings;	Knowledge on directions and bearings	BB	1		22
	Traverse Survey; Types of traverse; Fore and Back Bearings; Calculation of Included Angles from Bearings and Bearings from Included Angles;	Applications on how angles computed from bearings	LCD	2		24
	Prismatic & Surveyor's Compass; Magnetic Dip & Declination;	Knowledge on compass instruments	LCD	2		26
	Local Attraction and Corrections	Knowledge on compass traversing	BB	2		28
	Plotting of a Compass Traverse	Knowledge on compass traverse adjustments	BB	1		29
	Theodolite Surveying Types of Theodolites; Vernier Theodolite - Essential Parts;	Knowledge on vernier theodolite	LCD	1		30

	Basic definitions; Fundamental lines and desired relations; Temporary and permanent adjustments; Field operations - Measurement of horizontal angles(Repetition & Reiteration), vertical angles, direct angles, deflection angles, bearings	Knowledge about operations done using theodolite	LCD	4		34
	Lining-in, Balancing- in, Double sight, Random line method of running a line, Prolonging a straight line and location of intersection of two straight lines, to lay off a horizontal angle.	Knowledge on minor techniques using theodolite	BB	1		35
4.	**Traversing** Definition; Methods of Traversing; Selection of Traverse Stations; Marking of Stations; linear and angular (both bearings and angles) measurements; Compatibility of linear and angular measurements; Traverse Computations - Consecutive Coordinates, Independent Coordinates, Checks in traversing; Closing error	Knowledge on traversing and computations involved in traversing	BB	4		39
	Methods of adjustments; Gale's traverse table; Omitted measurements	Knowledge on omitted measurements, computation's in traverse	BB	5		44
	Plane Table Principle; Accessories of plane table; Orientation; Procedure of setting up plane table over a station Methods of Plane Tabling - Radiation, Intersection, Traversing; Resection - Two point problem; Advantages and disadvantages.	Knowledge on plane table surveying	LCD	3		47

5.	**Simple Leveling** Basic definitions; Different methods of leveling; Levels - Dumpy level, Tilting level, Auto level; Sensitivity of a Level tube; Leveling staff; Level field book; Booking and reducing levels	Knowledge on leveling	BB	3		50
	Classification of direct differential leveling methods - Fly leveling, Check leveling, Profile leveling and Cross sectioning, Reciprocal leveling and Precise leveling Curvature and Refraction; Sources of errors & Difficulties in leveling.	Knowledge on various methods in leveling	BB	4		54
	Contouring Methods of representing Relief; Contouring; contour interval; Characteristics of contours; Methods of locating contours; Direct and indirect methods of contouring; Interpolation and sketching of contours; Location of a contour gradient on map and ground; Uses of contour maps.	Knowledge on contouring and various methods of it.	BB	4		58

M-Rama Rao
HOD, CE

R. Kumar
(R. Vaishnava Kumar)

LESSON PLAN

Academic year: 2018-19
Year & semester: **II year I semester**
Branch: Civil Engineering
Subject code & name: **Fluid Mechanics, CE 203**
Name of faculty: Dr. A.Srinivasa Prasad & Mr. K.Leela Krishna

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
I	Dimensions and Units	Understanding properties of fluids	BB	1		1
	Density, specific weight, specific volume & specific gravity		BB	1	1	3
	Viscosity, surface tension, capillarity and vapour pressure		BB	1	1	5
	Variation of static pressure	Determination of hydro static forces	LCD	1		6
	Absolute and gauge pressure		BB	1		7
	Pressure measurement by manometers		BB	1	1	9
	Pressure on plane surfaces and curved surfaces		BB	1	1	11
II	Buoyancy	Principle of Buoyancy and its applications	LCD	1		12
	Stability of submerged and floating bodies		BB	1	1	14
	Meta center and metacentric height		BB	1	1	16
	Classification of flows	Derivation of equation for conservation of mass and its applications	LCD	1		17
	Stream line , streak line , path line and stream tube		BB	1		18
	Equation for acceleration		BB	1	1	20
	Continuity equation		BB	1		21
	Velocity potential and stream function		BB	1	1	23
III	Euler's equation of motion	Derivation of basic equation of conservation of energy and momentum and their applications	BB	1		24
	Bernoulli's equation, energy correction factor		BB	1	1	26
	Momentum principle and its application		BB	1	1	28

	Force exerted on pipe bend		LCD	1	1	30
	Discharge through Venturimeter		BB	1		31
	Discharge through orifice meter		BB	1	1	32
	Flow nozzle, Measurement of velocity by pitot tube		BB	1		33
IV	Flow through orifice	Determination of discharge through orifices and mouth pieces	LCD	1		34
	Coefficients of orifice		BB	1	1	36
	Flow through large rectangular orifice and submerged orifice		BB	1		37
	Classification of mouth pieces		BB	1		38
	Flow through external and internal mouth pieces		LCD	1		39
	Flow through rectangular, triangular and trapezoidal notches and weirs	Determination of discharge over notches and weirs	LCD	1	1	41
	End contractions, velocity of approach and broad crested weir		BB	1		42
V	Darcy's equation	Analysis of pipe flow problems	BB	1		43
	Minor losses through pipe flow		LCD	1		44
	Pipes in parallel, series and branched pipes		BB	1		45
	Total energy line and hydraulic gradient line		LCD	1	1	47
	Power transmission through a pipe, siphon and water hammer		BB	1		48
	Reynold's experiment	Analysis of laminar and turbulent flows	LCD	1		49
	Steady laminar flow through a circular pipe		BB	1		50
	Hydro dynamically smooth and rough pipes		LCD	1		51
	Velocity distribution		BB	1		52
	Variation of friction factor with Reynold's number and Moody's chart		BB	1		53

CA-Srinivas Reddy

M. Rama Rao
HOD, CE

CE 204 SOLID MECHANICS – II
LESSON PLAN

Academic year : 2018-19
Year & semester : II Year, 1st semester
Branch : Civil Engineering
Subject code & name : **CE 204 SOLID MECHANICS – II**
Name of faculty : Mr. S.V. Satyanarayana, Mr. K.Anjaneyulu & Ms. Y. Madhavi

Unit	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
I	Analysis Of Plane Stress-introduction	Know the application to several number of stresses on a plane and Failure Theories	BB	1		1
	Trasformation Of Plane Stress Equation		BB	2		3
	Principal Stresses And Principal Planes;maximum Shear Stress		BB	1		4
	Mohr's Circle Concept		BB	2		6
	Construction Of Mohr's Circle And Problems		BB	2		8
	Failure Theories-max.principal Stress Theory,max Shear Stress Theory And Max Strain Energy Theory ,and Problems		BB	2		10
	Max Principal Strain Theory And Max Shear Strain Theory		BB	1		11
	Max.shear Strain Energy Theory And Problems On Failure Theories		BB	2		13
2	Introduction To Buckling Of Column, Types Of Columns	Know the behavior of columns subjected to different end conditions for different loadings.	BB	1		14
	Stability-stable ,unstable And Equal Equilibrium		BB	2		16
	Critical Load Of A Column With Both Ends Hinged,and Other End Conditions		BB	2		18
	Eccentric Loading -secant Formula		BB	2		20
3	Deflection Of Statically Determinate Beams-introduction	Know the deflections of Beamsby Double Integration Method, Moment Area Theorems, Moment Area Theorems	BB	1		21
	Differential Equation Of Elastic Curves,double Integration Method;		BB	1		22
	Deflection Of Cantilever Beams By Double Integration Method;		BB	1		23
	Deflection Of Simply Supported Beams By Double Integration Method		BB	1		24
	Deflection Of Beams By Macaulay's Method		BB	1		25

	Deflection Of Beams By Various Loading Conditions By Double Integration Method		BB	2		27
	Moment Area Theorems		BB	2		29
	Moment Area Theorems		BB	2		31
4	Arches-introduction ,types Of Arches	Know the analysis of arches and cables;statically determinate beams by energy method	BB	1		32
	Analysis Of Three Hinged Arches		BB	1		33
	Cables Subjected To Uniformly Distributed Load And Concentrated Load		BB	2		34
	Cables Supported At Same Level And Different Level,temperature Effect		BB	2		36
	Virtual Work,betti's And Maxwell's Reciprocal Theorem		BB	1		37
	Application Of Virtual Work.		BB	1		38
	Deflection Of Frames And Trusses Problems,castingliano's Theorem.		BB	2		40
5	Maximum shear force and bending moment in simply supported beams due to single concentrated load,	Draw influence line diagrams for Determinate Beams, simple trusses and three-hinged arches.	BB	2		42
	uniformly distributed load shorter than span,		BB	2		44
	uniformly distributed load longer than span,		BB	2		46
	Concept of influence line, Influence Lines for reaction, shear force and bending moment in simply supported beams		BB	2		48
	Influence lines for simple trusses and three-hinged arches.		BB	2		50

S.V. Sathanarayana

(S.V. SATHANARAYANA)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2018-19
Year & semester: 2ND year 1st semesterBranch: Civil Engineering
Subject code & name: **CE205 &Building Materials, Planning & Construction**
Name of faculty: V. Phani Sankar, P.Srilakshmi & M. Tulasi kumar

Unit No	Topic of syllabus to be covered	Learning outcomes	Teaching mode : BB/OHP/ LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	Introduction, **Clay bricks:**Brick clay, Preparation of bricks,	Gain knowledge on bricks and preparation on bricks	BB	2		2
1	Types of bricks, Dimensions of bricks ,Weight of bricks, Storing of bricks,	Know about the dimension, weight and storing of bricks	BB	1		3
1	Brick substitutes, Classification of bricks, Tests for bricks	Gain knowledge on test on bricks	BB	2		5
1	**Timber:** Classification of trees, Structure of wood, seasoning of timber	Know about the timber and its classification	BB	2		7
1	conversion of timber	Know about the conversion of timber	BB	1		8
1	Market forms of timber, Defects of timber,	Know about the defects of timber and their market forms	LCD	2		10
1	Treatment of timber, Classification of timber	Know about the treatment and classification of timber	BB	2		12
1	**Glass:** Manufacture and Classification, Treatment of glass, Uses of glass, testing for quality	Gets detailed knowledge on building material like glass	BB	2		14
1	Characteristics and Performance of glass, Glass fiber		BB	2		16
1	**Plastics:** Classification of plastics, Properties of plastics	Gets detailed knowledge on plastics and their common use	BB	2		18
1	Fabrication of plastic articles, some plastics in common use, Reinforced plastics		BB	2		20
2	**Paints:** Types of paints, Composition of paints, Considerations in choosing paints	Gets detailed knowledge on paints and their types and their uses	BB	2		22

2	Paints commonly used in buildings		BB	2		24
2	**Brick Masonry:** Terms used in brickwork, Mortars to be used, bonding of bricks,	Get knowledge on various method of laying of bricks , bonding of bricks	BB	2		26
2	Method of laying bricks		LCD	2		28
3	**Stairs and lifts:** Terminology used in stairs, Types of stairs, Reinforced concrete stairs, lifts.	Gets detailed knowledge on types of stairs and terminology used in stairs	LCD	2		30
3	**Acoustics:** Basic theory, Reverberation and echoes, Sound isolation	Know about the acoustics and their uses in different types of buildings	BB	2		32
3	Acoustical materials, Recommendations for different types of buildings		BB	2		34
4	**Shoring:** Shoring, Types of shores	Get detailed knowledge on shoring and their uses, underpinning and their purpose	LCD	2		36
4	**Underpinning** – Pit method, Pile method;		LCD	2		38
4	**Scaffolding :** Types of scaffolding; Formwork for columns, beams, slabs	Know about the scaffolding and formwork for various structural elements	LCD	2		40
5	**An Approach to Planning :** Site planning, Space requirement, Establishing areas for different units, Furniture requirements, Roominess, Flexibility, Sanitation, Lighting, Ventilation, Space for equipment forair conditioning, etc.	Know about the planning, space requirements and various elements have to consider for planning	BB	2		42
5	**Flow diagram and line plan**: Grouping, Circulation, Orientation, Aspect and prospect, Privacy, Elegance and economy; Climatic considerations		LCD	2		44
5	**Architectural composition**-Unity, Mass composition, Contrast, Proportion, Scale, Accentuation and rhythm, Materials for the exterior and Expression, Colour.	Get knowledge on Architectural composition	BB	2		46
5	**Building Rules and Bye-Laws:** Zoning regulations; Regulations regarding layouts or sub-divisions	Get idea on building bye-laws and rules and regulations	BB	2		48
5	**Building regulations :** Rules for special type of buildings; Calculation of plinth, floor and carpet area; Floor space index		LCD	2		50
5	**Building Elements:** Conventional signs, Guidelines for staircase planning,Guidelines for selecting doors and windows,	Get knowledge on conventional signs used in planning and guide lines for doors and windows	LCD	2		52
5	Terms used in the construction of door and window; Specifications for the drawing of door and window	Get idea on terms used in construction of door and windows	LCD	1		53

P. Srilakshmi (P. Srilakshmi)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: :2018-19
Year & semester: :II Year, III Sem.
Branch : CIVIL (A,B & C Sections)
Subject code & name: : **CE206 Engineering Geology**
Name of faculty : Dr.P.Ch.SANJEEVA RAO

Unit Covered	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/ LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	Introduction, Objectives And Out Comes Of The Course	Awareness and out come of the course	BB	1	0	1
1	Branches Of Geology	Learn list of branches of Geology	BB	1	0	2
1	Geological Agents- Exogenous And Endogenous. Aggradation- Degradation- Agradation.	Role of Geological agnts in shaping the earth	BB	1	0	3
1	Physical Weathering- Exfoliation And Spheroidal Weathering.	Learn about the process and impact of weathering	BB	1	0	4
1	Chemical Weathering- Examples	Learn about the process and impact of weathering	BB	1	0	5
1	Weathering- Recognition, Resistance And Engineering Considerations	Learn about the process and impact of weathering	BB	1	0	6
1	River Valley Development, Erosion- Hydraulic Action	Process and impact of Erosion on earth	BB	1	0	7
1	Abration , Attrition And Solution- Erosion By Stream	Process and impact of Erosion on earth	BB	1	0	8
	Adjusted to 204. Reason :	Process and impact of Erosion on earth	BB	1	0	9
1	Erosion By Wind And Glaciers	Process and impact of Erosion on earth	BB	1	0	10
1	Review Of Chapter One. Questions And Answers	1	BB	1	0	11
2	Physical Properties Of Minerals- Habit	Properties of minerals	BB	1	0	12
2	Physical Properties- Color And Streak	Identification of minerals and significance	BB	1	0	13
2	Physical Properties Of Minerals- Luster	Identification of minerals and significance	BB	1	0	14
2	Mineral Properties- Cleavage , Fracture	Identification of minerals and significance	BB	1	0	15
2	Properties Of Minerals :hardness	Identification of minerals and significance	BB	1	0	16
2	Identification Of Minerals - Study Of Minerals As Per Syllabus	Identification of minerals and significance	BB	1	0	17
2	Rock Cycle And Its Importance	Know about the gensis of rocks	BB	1	0	18

2	Introduction To Classification Of Rocks	Classification of rocks	BB	1	0	19
2	Classification Of Sedimentary Rocks	Classification, properties and uses of rocks	BB	1	0	20
2	Forms Of Igneous Rocks	Classification, properties and uses of rocks	BB	1	0	21
2	Primary Structures In Igneous Rocks	Classification, properties and uses of rocks	BB	1	0	22
2	Textures In Igneous Rocks- Uses	Classification, properties and uses of rocks	BB	1	0	23
2	Formation Of Sedimentary Rocks	Classification, properties and uses of rocks	BB	1	0	24
3	Structures And Texture Of Sedimentary Rocks	Classification, properties and uses of rocks	BB	1	0	25
3	Structure And Textures In Metamorphic Rocks. Introduction To Secondary Structures.	Classification, properties and uses of rocks	BB	1	0	26
3	Strike And Dip. Parts Of Fold.	Know about the secondary structures	BB	1	0	27
3	Classification Of Folds	Folds and their importance	BB	1	0	28
3	Origin of structures	Origin of structures and importance	BB	1	0	29
3	Faults And Their Classification	Faults and their role on the structures	BB	1	0	30
3	Joints And Unconformities- Types And Classification	Importance of secondary structures	BB	1	0	31
3	Importance Of Folds And Faults	Importance of secondary structures	BB	1	0	32
4	Introduction To Earthquakes	Causes and effects of earthquakes	BB	1	0	33
4	Earthquakes Causes And Effects.	Causes and effects of earthquakes	BB	1	0	34
4	Engineering Considerations Of Earthquakes	Importance of Earthquakes	BB	1	0	35
4	Causes, Effects And Control Of Landslides	Land slide s causes and controls	BB	1	0	36
5	Electrical Resistivity Method- Principle And Its Applications	Geophysical explaration of sub surface methods	BB	2	0	37
5	Seismic Refraction Method Of Exploration. Geological Consideration In The Selection Of Dam Site.	Geological considerations in Dam construction	BB	1	0	39
5	Effects On Ground. Geological Considerations Of Tunneling	Geological considerations in tunneling	BB	1	0	40
5	Improvements In Properties Of Rock Masses- Grouting And Rock Bolting	Learn about site improvement techniques	BB	1	0	41

(PCH SANJEEVA RAO)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year : 2018-19
Year & semester : II Year, 2nd semester
Branch : Civil Engineering
Subject code & name : **CE 207, Professional Ethics and Human Values**
Name of faculty : P.Srilakshmi, P.Samatha Chowdary, G.Sanijya

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP /LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	Introduction To Syllabus, Ethics, Morals	Able to differentiate morals and ethics	BB	1		1
	Values, Self Confidence, Caring, Sharing	Knowledge about basic human values	BB	1		2
	Valuing Of Time, Civic Virtue, Cooperation	Knowledge about basic human values	BB	1		3
	Courage, Empathy, Commitment	Knowledge about basic human values	BB	1		4
	Honesty, Living Peacefully, Respect For Others	Knowledge about basic human values	BB	1		5
	Integrity, Work Ethics, Service Learning, Spirituality	Knowledge about basic human values	BB	1		6
	Character, Self Respect	Knowledge about basic human values	BB	1		7
	Sharing, Self respect	Knowledge about basic human values	BB	1		8
	Stress Management	Knowledge about basic human values	BB	1		9
2	Senses of engineering ethics, variety of moral issues	Able to know engineering ethics	BB	1		10
	Types Of Inquiry	Knowledge about Inquiry	BB	1		11
	Engineering Ethics And Philosophy	Able to know engineering ethics	BB	1		12
	Moral Dilemmas	Able to form a conclusion in dilemma	BB	1		13

	Moral autonomy	Able to think Independently	BB	1		14
	Kohlberg's Theory, Gilligan's Theory	Able to judge ethically and morally	BB	1		15
	Kohlberg's And Gilligan's Theory	Able to judge ethically and morally	BB	1		16
	Profession, Professional, Professionalism, Criteria For Profession	Know about basic profession	BB	1		17
	Criteria For A Profession	Knowledge about basic criteria for profession	BB	1		18
	Models of Professional Roles	Knowledge about basic criteria for profession	BB	1		19
	Models of Professional Roles	Knowledge about basic criteria for profession	BB	1		20
3	Similarities To The Standard Experiments	Able to know the similarities	BB	1		21
	Engineering As Experimentation - Similarities To Standard Experiments	Able to know the similarities	BB	1		22
	Contrasts With Standard Experiments	Able to know contrasts	BB	1		23
	Contrasts With Standard Experiments	Able to know contrasts	BB	1		24
	Engineers As Responsible Experimenters, A Balanced Out Look On Law	Knowledge about responsibilities of engineers	BB	1		25
	Balanced Outlook On Law, Case Study	Knowledge about various standards	BB	1		26
	The Challenger Case Study	Knowledge About to the safety lessons	BB	1		27
	Problems With Law In Engineering, Challenger Case Study	Awareness about past failures	BB	1		28
	Moral Reasoning And Ethical Theories, Utilitarianism, Duty Ethics	Awareness of various rights and duties	BB	1		29

	Right Ethics, Virtue Ethics	Awareness of various rights and duties	BB	1		30
	Ethical Theories	Awareness of various rights and duties	BB	1		31
4	Assessment Of Safety And Risk	Awareness on safety and risk	BB	1		32
	Risk Benefit Analysis, Personal Risk	Able to evaluate risk	BB	1		33
	Public Risk, Reducing Risk, Voluntary Risk	Able to evaluate risk	BB	1		34
	Case Studies	Knowledge about past failures	BB	1		35
	Collegiality And Loyalty, Respect For Authority	Able to know Obligations of engineers	BB	1		36
	Collective Bargaining	Able to know Obligations of engineers	BB	1		37
	Conflicts Of Interest	Able to know Obligations of engineers	BB	1		38
	Occupational Crime	Able to know Obligations of engineers	BB	1		39
	Confidentiality, Intellectual Property Rights	Knowledge about the importance of protecting the property rights	BB	1		40
5	Human Rights, Professional Rights, Employee Rights, Discrimination	Knowledge about the importance of protecting the property rights	BB	1		41
	Multinational Corporation, Environmental Ethics, Computer Ethics, Weapons Development, Engineers As Managers,	Awareness about environmental laws , Computer ethics	BB	2		43
	Engineers As Expert Witnesses, Advisors, Codes Of Ethics Limitations And Sample Codes	Awareness about professional societies and codes	BB	1		44

P. Sri (P. Srilakshmi)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2018-19
Year & semester: II/IV B.tech second semester
Branch: civil engineering
Subject code & name: **CE208 & SURVEYING - II**
Name of faculty: R.VAISHNAVA KUMAR

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	**Modern Systems in Surveying:** Electronic Distance Measurements - Basic definitions,	To know about the latest Surveying Instruments	BB/LCD	2		2
	distance from measurement of transit time		BB/LCD	1		3
	Infrared EDM instruments Microwave EDM instruments	To know about the latest type of Surveying Instruments	BB/LCD	1		4
	Digital theodolite		BB/LCD	2		6
	Digital Level, Global Positioning System. Total Station	To know how to operate the Surveying Instruments	BB/LCD	1		7
	Computation of Areas: Introduction; Simpson's rule;	Gains enough knowledge about land survey.	BB	1		8
	Boundaries with offsets at irregular intervals;		BB	1		9
	Meridian methods; Coordinate method;		BB	2	1	12
	Planimeter - Area of Zero circle.	To know how to calculate areas on maps	BB	2		14
	Area of cross sections - two level section only.		BB	2		16
2	**Computation of volumes:** Trapezoidal rule, Prismoidal formula.		BB	1		17
	Volume from spot levels, volume from contour plan,	To know how to calculate volumes on maps	BB	2		19
	Capacity of a reservoir		BB	1	1	21
	Trigonometric Leveling: Introduction;	To find out the reduced level of different	BB	1		22

	Plane trigonometric leveling methods - When base of the vertical or inclined object accessible.	structures when base is inaccessible and accessible				
	when base of the object is not accessible;		BB	2	1	25
	Axis signal correction;	To know about the correct reduced levels	BB	2		27
	Difference in elevation by single observation and reciprocal observations.		BB	2	1	30
3	**Tacheometric Surveying:** Advantages of tachometric surveying; Basic systems of tachometric measurements	Gains enough knowledge about tachometric survey	BB	1		31
	Principle of stadia measurements		BB	1		32
	Determination of constants K and C;		BB	1		33
	Inclined sight with staff vertical; Inclined sight with staff normal to the line of sight;	Knows about the elevations and distances	BB	2		35
	External- Focussing Telescope with an Anallactic lens; Internal focussing telescope; uses of Tacheometry;	Knows about the working of instrument	BB	2		37
	Errors in Tacheometric surveying; Accuracy of Tacheometric Surveying.		BB	1		38
4	**Curves Ranging:** Circular curves - Basic definitions; Designation of a curve;	To design and layout curves for a roads and railways.	BB	2		40
	Relationship between radius and degree of curve; Elements of a simple circular curve;	To know how to locate curve for a roads and railways.	BB	1		41
	Location of the tangent points; selection of peg interval;		BB	1		42
	Methods of setting out;		BB	2	1	45
	Problems in setting out curves;		BB	2		47
	Com-pound and Reverse curves.		BB	2		49
5	**Construction Surveying**: Control stations; Horizontal Control - Reference grid; Vertical Control;	To layout or to mark the positions of the proposed structures on the ground.	BB	2		51
	Positioning of a structure; offset pegs;	Know about the instruments used in setting of	BB/LCD	1		52

	Reference pillars and Batter boards; Grade stakes; Boning rods or travelers; Sight rails; Slope rails; Profile boards or batter boards;	the proposed structures on the ground.	BB/LCD	2		54
	controlling side slopes in embankment and cutting; Setting out a foundation;	Know about the proposed structures on the ground.	BB/LCD	1		55
	setting out a culvert; Setting out a sewers and pipe lines;		BB/LCD	1		56
	Setting out of Bridges - Location of centre line, Location of piers.		BB/LCD	1		57

R.J. Kumar
(Rajaishnava Kumar)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2018-19
Year & semester: **II year II semester**
Branch: Civil Engineering
Subject code & name: **Hydraulics and Hydraulic Machines, CE 209**
Name of faculty: Dr. A.Srinivasa Prasad, Mr. K.Leela Krishna&M.Srikanth Kumar

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
I	Classification of flows, types of channels	Analysis and design of open channels for uniform flow	LCD	1		1
	Chezy, Manning's, Kutter's, &Bazin's equations		BB	1	1	3
	Efficient rectangular, trapezoidal and circular channel sections		BB	2	1	6
	Velocity distribution, energy and momentum correction factors, pressure distribution		BB	1		7
	Specific energy and its curve	Analysis and design of open channels for Non-uniform flow	BB	2		9
	Critical flow in a rectangular channel, Critical slope		BB	1	1	11
	Different sloping conditions		BB	1		12
	Channel transitions		LCD	1	1	14
II	Dynamic equation of GVF	Analysis of GVF	LCD	1		15
	Computation of surface profiles		BB	1	1	17
	Back water curve and draw down curve		LCD	1		18
	Examples of GVF		LCD	1		19
	Hydraulic jump	Analysis of RVF	LCD	1		20
	Specific force, relation between conjugate depths		BB	1	1	22
	Types and energy loss in hydraulic jump		BB	1	1	24

III	Dimensional homogeneity	Determination of relation among variables in a process by dimensional analysis and similitude	BB	1		25
	Raleigh's method		BB	1	1	27
	Buckingham's pi theorem		BB	1	1	29
	Geometric, kinematic and dynamic similarity		BB	1		30
	Dimensionless numbers		BB	1		31
	Model laws		BB	1	1	33
	Scale effect and distorted models		BB	1		34
	Action of jets on stationary plates	Determination of force and work done by jet on vanes	LCD	1	1	36
	Action of jets on moving plates		LCD	1	1	38
	Angular momentum principle		BB	1		39
	Torque on roto - dynamic machines		BB	1		40
IV	Classification of turbines	Determination of various efficiencies of turbine	BB	1		41
	Runner profiles		LCD	1		42
	Velocity triangles and work done		BB	1	1	44
	Head and efficiency		BB	1		45
	Draft tube theory		BB	1		46
	Specific speed and unit quantities		BB	1	1	48
	Selection of turbines		BB	1		49
	Operational characteristics		LCD	1		50
V	Manometric head, losses and efficiencies of centrifugal pump	Determination of various efficiencies of centrifugal pump	BB	1		51
	Working principle		BB	1		52
	Velocity triangles and Work done		BB	1	1	54
	Priming, specific speed		BB	1	1	56
	Performance and characteristic curves		LCD	1		57
	Cavitation effects		BB	1		58

(A. Srinivasa Rao)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2018-19
Year & Semester: IInd YEAR, 4th SEMESTER
Branch : Civil Engineering
Subject Code & Name: **CE 210, Structural Analysis-I**
Name of Faculty : **S. V. Satyanarayana**

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
I	Introduction, Deflections, Degree Of Static Indeterminency, Propped Cantilever Subjected To Point Load At Midpoint And Subjected Udl	Analysis of propped cantilever beams, drawing BM diagram and shear force diagram	BB	1		1
	Analysis Of Fixed Beams	Analysis of fixed beams	BB	1		2
	Fixed Beam Subjected To Point Load At Center And Udl	Analysis of fixed beams	BB		1	3
	Fixed Beam Subjected Toudl Half of its span	Analysis of fixed beams	BB		1	4
	Fixed Beam Subjected To Couple	Analysis of fixed beams	BB		1	5
	Fixed beams subjected to uvl , eccentric point load	Analysis of fixed beams	BB		1	6
	Clapeyron's theorem of three moments method	Analysis of continuous beams, and drawing shear force and beinding moment diagrams	BB	1		7
	Continuous beams with different loads	" "	BB		1	8
	Continuous beams with different loads with sinking of supports	" "	BB		1	9
	Continuous beams with over hangs		BB		1	10
	Muller Breaslea' S Principle , Influence Line Diagram For Statically Indeterminate Structures, Propped Cantilever, fixed beam	Drawing of ILD for Ra, Rb & Ma	BB	1	1	12
	Analysis Of Two Hinged Arches,(Two Hinged semicircular Arch Subjected To Concentrated Load) Two Hinged Semi Circular Arch Subjected To Udl, Two Hinged Semi Circular With Uvl, Two Hinged Segmental Arch Subjected To Point Load At Crown, Two Hinged Parabolic Arch Subjected To Point Load At Crown.	Analysis of two hinged arches	BB	1	1	14
II	Developing Slope Deflection Equations	Analysis of continuous beam	BB	1		15

	Analysis Of The Continuous Beam By Slope Deflection Method With Sinking Of Supports	Analysis of continuous beam	BB		1	16
	Analysis Of Portal Frames By Slope Deflection Method.	Analysis of building frames	BB		1	17
III	Stiffness, distribution factor, formulation of moment distribution method	Analysis of indeterminate structures	BB		1	18
	Analysis of continuous beam by moment distribution method.		BB		1	19
	Analysis of portal frames	Non sway analysis	BB		1	20
	Analysis of portal frames	Sway analysis	BB		2	22
	Analysis of Kanie's Method		BB	1		23
	Analysis of continuous beams		BB		1	24
	Analysis of continuous beams with sinking of supports		BB		1	25
	Kanis Method Continuous Beam With Over Hangs		BB		1	26
	Analysis of portal frames by Kanis Method		BB	1	1	28
III	Analysis of Curved beams in plan : semi circular beam in paln is simply supported on three equally spaced supports	Analysis for bending moment and torsion	BB	2		30
	Circular beam supported on 6 equally spaced supports	Analysis for bending moment and torsion	BB	2		32
	Problem for analysis of circular beam supported on 6 equally spaced supports	Drawing BM diagram and torsion diagram.	BB	2		34
	Analysis of redundant frames	Finding forces in redundant frames	BB	2		36
IV	Analysis of building frames for horizontal loads by portal method .	Drawing bending moment diagrams for beams, columns by approximate method.	BB	2		38
	Analysis of building frames for horizontal loads by Cantilever method	Drawing bending moment diagrams for beams, columns by approximate method.	BB	2		40
	Analysis of building frames by substitute method	Finding design moments for gravity loads	BB	2		42

S.V. Satyanarayana

S.V. SATYANARAYANA.

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2018-19
Year & semester: **II year II semester**
Branch: Civil Engineering
Subject code & name: **Environmental Engineering – I, CE 211**
Name of faculty: U. Pallavi, Y. Naga Mahesh

Unit No	Topic of syllabus to be covered	Learning outcomes	Teaching mode:	Hours required		Total hours Cumulative
			BB/OHP/LCD	Theory	Tutorial	
	Introduction to Syllabus		BB	1		1
I	**Introduction to Water Supply Engineering**	Main components in water supply system				
	Need for protected water supplies, Objectives of water supply systems	clear idea on objectives and necessity of potable water	BB	1		2
	Water borne diseases; Role of Environmental Engineers	Water borne diseases; Role of Environmental Engineers	BB	1		3
	Quantity of Water					
	Estimating requirements; Design period;	factors effecting design period	BB	1		4
	Per capita consumption; Factors affecting per capita consumption	Per capita consumption; Factors affecting per capita consumption	BB	1		5
	Fire demand; Fluctuations in demand;	Empirical formulae on fire demand	BB	1		6
	Prediction of population	population forecasting methods	BB	2		8

	Problems	problems on population forecasting	BB	1		9
	Sources of water					
	Classification of sources of water supply;	Surface & sub surface sources	BB	1		10
	Choice of source; Suitability with regard to quality and quantity.	Choice of source; Suitability with regard to quality and quantity.	BB	1		11
II	**Intakes, Transportation and Pumping of Water**					
	Intake structures: Location of intake; River, reservoir and canal intakes,	components of various intake structures	BB	1		12
	Types of conduits; Capacity and design;	Types and Design of conduits	BB	2		14
	Materials for pipes,	Various materials used for pipes	BB	1		15
	Laying and Jointing of pipes; Leakages and testing of pipeline;	Laying and Jointing of pipes; Leakages and testing of pipeline;	BB	1		16
	Classification of pumps; Choice of pumps	Different types of pumps	BB	1		17
	Quality of Water					
	Impurities in water; Routine water analysis – physical tests	Causes, effects & tests regarding physical parameters	BB	1		18
	Testing chemical parameters	Causes, effects & tests regarding chemical parameters	BB	2		20
	bacteriological tests	Causes, effects & tests regarding bacteriological parameters	BB & LCD	2		22
	BIS Standards for drinking water	BIS standards	BB	1		23

	Problems	Problems	BB	1		24
III	**Purification of Water**					
	Methods of purification of water	Methods of purification of water	BB	1		25
	Sequence of treatment units	Sequence of treatment units	BB	1		26
	Plain Sedimentation and Coagulation					
	Theory of sedimentation; Stoke's law;	Factors effecting sedimentation process	BB	1		27
	Sedimentation tanks; Design aspects	components in sedimentation tanks and design considerations	BB	1		28
	Design Problems	Design Problems	BB	1		29
	Principle of coagulation; Chemicals used for coagulation;	Principle of coagulation; Chemicals used for coagulation;	BB	1		30
	Units of coagulation plant; Optimum Dose of Coagulant.	Units of coagulation plant; Jar test for optimum Dose of Coagulant.	BB	1		31
	Filtration of Water					
	Theory of filtration; Filter materials; Slow sand and rapid sand filters;	Filtration mechanisms, various filters	BB	1		32
	Construction operation and design; Slow sand filters verses rapid sand filters;	Construction operation and design; Slow sand filters verses rapid sand filters;	BB/LCD	2		34
	Under drainage system design in rapid sand filters;	Perforated pipe system, pipe & strainer system	BB	2		36
	Troubles in rapid sand filters; Pressure filters.	Troubles in rapid sand filters; Pressure filters.	BB	1		37
IV	**Disinfection of Water**					

	Different methods of disinfection;	minor methods of disinfection	BB	1		38
	Chlorination: Disinfection action;	Chlorination: Disinfection action;	BB	1		39
	Forms of chlorine;	Forms of application of chlorine;	BB	1		40
	Types of chlorination; Testing of chlorine residuals.	Types of chlorination,Tests for residual chlorine concentration	BB	1		41
	Miscellaneous Treatment Methods					
	Water softening: Methods of removing temporary and permanent hardness;	linme soda, zeolite and deminealization processes of water softening	BB	2		43
	Removal of colour, odour and taste from water;	Various methods of Removal of colour, odour and taste from water;	BB	1		44
	Defluoridation, Desalination: Importance, methods.	Defluoridation, Desalination: Importance, methods.	BB	2		46
V	**Distribution System :**					
	General requirements; Classification;	requirements and classification of distribution systems	BB	1		47
	Methods of supply; Available pressure in the distribution system	continuous and intermittent supply, and available pressures	BB	1		48
	Layouts of distribution networks;	Layouts of distribution networks;	BB	1		49
	Distribution reservoirs; Functions; Types;	Types of distribution reservoirs and functions	BB	1		50
	Capacity of balancing tank;	Capacity of balancing tank;	BB	1		51
	Problems on determination of capacity of balancing	Problems	BB	1		52

	tank					
	Analysis of distribution system by Hardy-cross method and Equivalent pipe method.	methods of analysis	BB	1		53
	Problems	Problems	BB	1		54
	Pipe Appurtenances					
	Appurtenances in the distribution system; Service connection, Sluice valves; Check valve; Air valve; Drain valve;	Appurtenances in the distribution system; Service connection, Sluice valves; Check valve; Air valve; Drain valve;	BB/LCD	1		55
	Hydrants; Meters.	Hydrants and meters used in distribution system	BB/LCD	1		56

U. Pallavi
(U. Pallavi)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year:2018-2019
Year & semester:2nd year 2nd semester
Branch:Civil Engineering
Subject code & name: **CE212 – Concrete Technology**
Name of faculty: V. PhaniSankar, K. Ramesh Babu& B. Krishna Chaitanya

Unit No	Topics of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	**Cement:** General, Manufacture of Portland cement by dry process	Knowledge on production of cement and its composition and reactions of cement compounds	BB	2		2
1	Approximate oxide composition limits of OPC, Bogue's compounds.		BB	1		3
1	Hydration of cement, heat of hydration, structure of hydrated cement		BB	1		4
1	**Types of Cements:** Ordinary Portland cement, low alkali cement, Rapid hardening cement, Sulphate resisting cementPortland blast furnace slag cement, Portland pozzolana cement,	Get idea about the various types of cement and their properties	BB	2		6
1	Hydro phobic cement, oil well cement, low heat Portland cement, air entraining cement, white cement		BB	1		7
1	**Testing of cement:** Soundness test, Setting times test,	Get awareness of various tests on cement	LCD	2		9
1	Compressive strength test , Fineness test by air permeability apparatus		LCD	1		
2	**Aggregates :** Classification of aggregates according to size and shape	Knowledge on aggregates and their characteristics	BB	1		10
2	Characteristics of aggregates -shape and texture, cleanliness, toughness, hardness.		BB	1		11
2	**Tests on aggregates:** Test for bulking of fine aggregate, Fineness modulus and Zoning of fine aggregate, Fineness modulus of coarse aggregate.	Know about the various tests on aggregates	LCD	2		12
3.	**Water :** Tolerable concentrations of impurities in mixing water, Use of sea water for mixing concrete	Know about the properties of water used for concrete mixing	BB	1		13

3	**Chemical and Mineral Admixtures :** Functions of admixtures, accelerators, retarders, air entraining admixtures	Knowledge on various types of admixtures and pozzalonic materials	BB	1		14
3	Plasticizers and super plasticizers, water proofers, fly ash		BB	2		16
3	Silica fume, ground granulated blast furnace slag.		BB	1		
3	**Fresh Concrete :** Workability, factors affecting workability	Get knowledge on fresh concrete and its behavior	BB	1		17
3	Segregation and Bleeding in concrete, measurement of workability using slump cone test		BB	2		19
3	Kelly ball test, Vee-Bee test, compaction factor test		LCD	1		20
3	**Hardened Concrete:** Factors affecting compressive strength of concrete,	Get knowledge on hardened concrete and its behavior	BB	1		21
3	Cube compression test, split tensile strength test		BB	1		22
3	Flexural strength of concrete.		BB	1		23
3	Creep and factors effecting creep of concrete		BB	1		24
4	Shrinkage, types of shrinkages and factors effecting shrinkage		BB	1		25
4	**Non-destructive testing :** Rebound hammer test, Ultrasonic pulse velocity test	Gets knowledge on NDT tests	LCD	1		26
4	**Durability of concrete :** factors affecting durability of concrete, sulpahate attack,	Know about the durability of concrete	BB	2		28
5	Corrosion of steel, corrosion control		BB	1		29
5	**Production of Concrete :** Batching of materials, mixing, transportation, placing	Get idea on preparation concrete material	BB	2		31
5	compaction and Finishing of concrete		BB	1		32
5	Curing of concrete and methods of curing.		BB	1		33
5	**Concrete Mix Design:** Basic considerations for concrete mix design, factors influencing the choice of mix proportions	Get knowledge on concrete mix design procedure	BB	2		35
5	Indian standard method of concrete mix design.		BB	1		36

5	Problem on Indian standard method of concrete mix design.		BB	1		37
5	**Special concretes in Construction :** Ferro-cement, self-compacting concrete	Know about various types of special concretes and their properties	BB	1		38
5	fiber reinforced concrete, high strength concrete, High performance concrete		BB	1		39

B Krishnachaitanya

(B. Krishnachaitanya)

M. Rama Rao

HOD, CE

(CE 301)Geotechnical Engineering-I

LESSON PLAN

Academic year: 2018-19
Year & semester: 2018 1st semester
Branch: Civil Engineering
Subject code & name: **CE-301 Geotechnical Engineering**
Name of faculty: Dr. M. Rama Rao, Mr. M. Tulasi Kumar and Mr. D. NeerajVarma

Unit	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/ LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	GTE Introduction	Awareness of soil Mechanics	BB	1		1
1	Soil Definition, soil Formation	Knowledge of soil formation	BB	1		2
1	Soil Deposits In India	Knowledge of soil formation	BB	1		3
1	Phase diagrams, Simple Definitions, Relationship Between Properties	Knowledge on simple definitions of soils	BB	2		5
1	Relation Derivation	Application of Soil properties	BB	1		6
1	Problems On Soil Properties	Application of Soil properties	BB		2	8
1	Index Properties And Types	Knowledge of properties of soils	BB	2		10
1	Specific Gravity By Pycnometer Specific Gravity Bottle And Relative Density	Knowledge of properties of soils	BB	1		11
1	In-situ Density By Core Cutter And Sand Replacement Method	Knowledge of properties of soils	BB	1		12

1	Consistency Limits, other Indices, Thixotropy, Sensitivity And Activity	Knowledge of properties of soils	BB	2		14
2	Introduction Of Soil Classification And Is Method Of Classification	Knowledge of soil classification	BB	1		15
2	ISCS Classification	Knowledge of soil classification	LCD	1		16
2	USCS Classification	Knowledge of soil classification	LCD	1		17
2	Problems On Soil Classification	able to classify type of soils	BB		1	18
2	Stresses In Soils And Conditions Of GWT	knowledge on stress development	BB	1	1	20
2	Types Of Heads And Problems On Effective Stresses	Application of stresses	LCD	1	1	22
2	Permeability Introduction	Knowledge of flow of water in soils	BB	1		23
2	Darcy Law And Limitations And Methods Determination Of Permeability	Application of permeability	BB	1		24
2	Constant And Variable Head Methods Derivation	Application of permeability	BB	1		25
2	Problems On Permeability	Application of permeability	BB	1		26
2	Factors Effecting Permeability And Permeability On Stratified Deposits	Application of permeability	BB	1		27
3	Seepage Forces And Quick Sand Condition, Problems On Seepage Pressure	Application of stresses	LCD	1	1	29
3	Vertical Stress Below Applied Loads Using Boussinesq Theory	knowledge on stress development under various loads	BB	2		31
3	Vertical Stress Under Point Loading Derivation And Problems	Application of stresses due to point load	BB	1	1	33

3	Vertical Stress Under Uniform Circular Loading Derivation And Problems Rectangular Loading Strip Load And Line Load	knowledge on stress development under various loads	BB	1	1	35
3	Westergaards Theory And Its Various Types Of Loading	knowledge on stress development under various loads	BB	1		36
3	Westergaards Equation For Point Load, Circular, Rectangular Loading , Newmarks Influence Chart	Application of stresses due to point load	BB	1		37
4	Compaction Introduction	Knowledge of soil settlement due to expulsion of air	BB	2		39
4	Various Methods Of Compaction And Laboratory Procedure For Compaction	awareness of soil compaction in field	BB	1		40
4	Compressibility Of Soil	Knowledge of soil settlement due to expulsion of air	BB	2		42
4	Compaction In The Field ,compaction Specification And Field Control, methods Of Finding Compaction	understanding different types of compaction techniques	LCD	2		44
4	Compressibility Time Rate Of Consolidation Curve Problems And Settlement Analysis	Knowledge of soil settlement due to expulsion of water from the soil	BB	1	1	46
4	Computation Of Settlement Extrapolation Of Field Consolidation Curve	understanding settlement of soils in consolidation	LCD	1	1	48
4	Determination Of Void Ratio By Change In Void Ratio Method	able to find out void ratio from consolidation test	BB	2		50
4	Determination Of Coefficient Of Consolidation, Secondary Consolidation Demonstration Of Consolidation Test	knowledge on finding consolidation coefficient	BB	2		52
5	Introduction of shear strength	awareness on strength of soils	BB	1		53
5	Stress At A Point Mohr Circle Of Stress, Mohr Theory, Coulombs Equation, Mohr Coulomb Failure Criterion	Knowledge of shear stress	BB	2		55

5	Modified Failure Envelope, Measurement Of Shear Strength Of Soil By laboratory tests	Application of shear stress	LCD	2		57
5	Shear strength of clay and sand, drainage conditions	Application of shear stress	BB	1		58

M Rama Rao.

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2018-19
Year & semester: III Year, I Semester
Branch: Civil Engineering
Subject code & name: **CE 302 Water Resources Engineering – I**
Name of faculty: Sri. K. Leela Krishna & Sri. P.V.S. Maruthi Krishna

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/ LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	**Hydrology**					
	Hydrologic cycle; Precipitation types; Forms of precipitation	Understands the water circulation on earth	BB	1		1
	Rain gauges; Location, types	Able to compute average rain fall by various methods	BB, LCD	1		2
	Estimation of missing rainfall data, Optimum no. of rain gauges, Computation of average rainfall over a basin;		BB	1	1	4
	Abstraction from rainfall; evaporation, factors affecting evaporation, measurement of evaporation	Measure evaporation and infiltration and estimate runoff from a basin	BB	1		5
	Infiltration, factors affecting infiltration, measurement of infiltration, infiltration indices		BB	1		6
	Run off; Factors affecting runoff		BB	1		7
	Computation of run-off	Determine runoff by various methods	BB	1	1	9
	Design flood, Estimation of maximum rate of run-off	Understand methods for maximum flood estimation	BB	1		10
2	**Hydrographs**					
	Hydrograph analysis; Separation of base flow	Understand the importance of hydrograph and learns to construct UH from an isolated storm	BB, LCD	1		11
	Unit hydrograph theory, Assumptions, applications and limitations		BB	1		12

	Construction of UH for an isolated storm.		BB	1	1	14
	Application of UH for the construction of a flood hydrograph resulting from rainfall of unit duration	Able develop flood hydrographs from UH and determine peak flood discharge	BB	1		15
	Application of UH for the construction of a flood hydrograph resulting from two or more periods of rainfall		BB	1	1	17
	Construction of Summation curve	Able to develop UH of various durations from the know UH for the same basin	BB	1		18
	Construction of unit hydrograph of different unit duration from a unit hydrograph of some given unit duration by (i)superposition method and (ii) S-curve method.		BB	1	1	20
3	**Stream Gauging**					
	Necessity; Selection of gauging sites; Discharge measurement- Area-Velocity method	Understands various methods for measurement of discharge of a stream	BB	1		21
	Slope-Area method; Tracer method, Electromagnetic induction method, ultrasonic method		BB, LCD	1		22
	Measurement of depth – Sounding rod, Echo-sounder; Measurement of velocity; Floats – Surface float, Sub–surface float, Velocity rod; Current meter	Understand methods for determination of velocity and depth of stream	BB, LCD	1	1	24
	Measurement of stage – Staff gauge, wire gauge, Automatic stage recorder: bubble gauge recorder; stage-discharge curve	Understands the importance of stage- discharge relation	BB, LCD	1		25
3	**Ground Water**					
	Introduction; Aquifer; Aquiclude; Aquifuge; Specific yield; Specific retention; Divisions of sub–surface water; Water table; Types of aquifers;	Understands types of aquifers and determine discharge from confined and unconfined aquifers	BB	2		27
	Well hydraulics- Steady radial flow to a well– Dupuit's theory for confined and unconfined aquifers;		BB	1	2	30

	Tube wells - Open wells; Yield of an open well–Constant level pumping test and Recuperation test	Able to determine discharge from open well by practical methods	BB	1		31
4	**Introduction to Irrigation**					
	Definition; Necessity; Scope of irrigation science; Benefits of irrigation	Understands necessity of irrigation and types	BB	1		32
	Ill-effects of irrigation; Types of irrigation		BB	1		33
4	**Methods of Irrigation**					
	Methods of applying water to crops; Uncontrolled or wild flooding; Free flooding; Contour laterals; Border strip method; Check flooding; Basin flooding; Zigzag method	Understands various methods of water application for crops and their suitability	BB	1		34
	Furrow method; Contour Farming; Subsurface irrigation		BB	1		35
	Sprinkler irrigation; Drip irrigation		BB. LCD	1		36
4	**Water Requirement of Crops**					
	Functions of irrigation water; Classes and availability of soil water; Saturation capacity	Understands the concept of field capacity and wilting and able to estimate frequency and depth of irrigation required for a given crop	BB	1		37
	Field capacity; Wilting point; Available moisture and readily available moisture; Moisture equivalent		BB	1		38
	Soil – moisture deficiency; Limiting soil moisture conditions; Depth and frequency of irrigation		BB	1	1	40
	Duty and Delta; Base period; Relation between Duty and Delta; Factors affecting duty; Methods of improving duty	Understands the duty and delta relations and able to determine discharge required for each crop	BB	1		41
	Gross command area; Culturable command area; Culturable cultivated and uncultivated area; Kor depth and Kor period		BB	1	1	43
	Consumptive use of water ; Irrigation efficiencies – Water conveyance efficiency, Water application efficiency, Water distribution efficiency and Consumptive use efficiency	Understands the irrigation efficiencies and importance of crop rotation and assessment of irrigation water	BB	1		44

	Determination of irrigation requirements of crops; Crop rotation, Assessment of Irrigation water.		BB	1		45
5	**Irrigation Channels – Silt Theories and Design Procedure**					
	Classification; Canal alignment; Inundation canals; Cross–section of an irrigation channel	Understand silt theories their applications and drawbacks and able to design canals based on silt theories	BB	1		46
	Balancing depth; Borrow pit; Spoil bank; Land width		BB,LCD	1		47
	Silt theories–Kennedy's theory, Kennedy's method of channel design; Drawbacks in Kennedy's theory		BB	1	1	49
	Lacey's regime theory; Lacey's theory applied to channel design; Defects in Lacey's theory; Comparison of Kennedy's and Lacey's theory		BB	1	1	51
5	**Water Logging and Canal Lining**					
	Water logging; Effects of water logging; Causes of water logging; Remedial measures	Understands the remedial measures for water logging and reclamation of saline soils	BB, LCD	1		52
	Saline and alkaline soils and their reclamation; Losses in canal		BB, LCD	1		53
	Lining of irrigation channels – necessity, advantages and disadvantages; Types of lining	Understands the importance and types of lining of canals and able to design lined canals	BB, LCD	1		54
	Design of lined canal		BB	1	1	56

K. Leela Krishna
(K. LEELA KRISHNA)
Asst. prof CE

M. Rama Rao
HOD, CE

CE303 RAILWAY, AIRPORT & HARBOR ENGINEERING

LESSON PLAN

Academic year : 2018-19
Year & semester : III Year, 1st semester
Branch : Civil Engineering
Subject code & name : **CE303 RAILWAY, AIRPORT & HARBOR ENGINEERING**
Name of faculty : P.Samatha Chowdary & G.Sanijya

Unit	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	Introduction, Role of railways in transportation; Comparison of railway and highway transportation;	Know basics of Railway development	LCD	1		1
	Development of railway systems with particular reference to India; Classification of railways.		LCD	1		2
	Permanent way: Gauges in Railway track, Railway track cross – sections; Coning of wheels.	Know parts of a railway track	BB	1		3
	Rails & Rail Joints: Functions of rails; Requirements of rails; Types of rails sections; Standard rail sections;		BB	1		4
	Lengthof rails; Rail failures; Wear on rails.		BB	1		5
	Requirements of an ideal joint; Types of rail joints; Welding of rails.		BB	1		6
	Sleepers-Functions of sleepers; Requirements of sleepers;		BB	1		7
	Classification of Sleepers – Timber sleepers,Metal sleepers & Concrete sleepers; Comparison of different types of sleepers.		BB	1		8
2	Fish Plates - Fish plates, section of fish plates, failure of fish plates.	Know parts of a railway track	BB	1		9
	Geometric Design of Track, Necessity; Gradients & Gradient Compensation; Elements of horizontal alignment; Super elevation;	Design geometry of a track	BB	2		11
	Cant deficiency and Cant excess; Negative Super elevation; Length of TransitionCurve, Length of vertical curve.		BB	2		13
	Points And Crossings- Functions of components of turnout; Crossings	Know about basic control of locomotive	LCD	2		15

3	Ballast-Functions and requirements of ballast; Types of ballast; Renewal of ballast.	Know parts of a railway track	LCD	2		17
	Stations And Yards- Site selection for railway station; Requirements of railway station; Classifications;	Know about basic of station and yard	BB	2		19
	Station yards;		BB	1		20
	Level crossing.		BB	2		22
	Signaling-Objects of signaling; Classification of signals;	Know about basic control of locomotive	BB	2		24
	Controlling- absolute block system.		BB	1		25
	Standards ofinter locking		BB	2		27
4	Introduction-Development of air transportation system with particular reference to India;Aero plane components; Air–craft characteristics.	In sight into components,characteristic of aeroplane	LCD	2		29
	Airport planning and layout-Selection of site	To Know basic amenities of an airport	BB	1		30
	Apron; Hanger;		BB	1		31
	Typical airport layouts		BB	1		32
	Airport marking;		BB	1		33
	Airport lighting;		BB	1		34
	Drainage systems		BB	1		35
	Airport Obstruction- Zoning laws;Classification of obstructions; Imaginary surfaces; Approach zone; Turning zone.	understand various land features to be acquired by airport authority	BB	2		37
	Runway Design-Runway orientation; Basic runway length; Corrections for elevation; Temperature and gradient; Runway geometric design	Understand various corrections required for runway length	BB	2		39
	Specifications for Structural Design of Airport Pavements -Design factors methods for flexible and rigid pavements;	Know various factors that influence design.	BB	1		40
	LCN system of pavement design.	Efficient design of airport pavement and strength of existing pavement	BB	2		42
5	Introduction Types of water transportation; Economics and advantages of water transportation.	Know advantages of water transportation	BB	2		44

	Planning and Design of Port Facilities	Know about size shape accessibility planning of harbour	BB	1		45
	General layout and design considerations;		BB	1		46
	Pier and wharf structures; Fender systems	Know about berthing places and their support for vessels , ships and boats	BB	1		47
	Transitsheds and Apron	Know about storage places in harbour	BB	1		48
	Container ports;		BB	1		49
	Docks;	Know about repair places in harbour	BB	1		50
	Dredging	Know about maintenace places in harbour	BB	1		51
	Light Houses.	Know about navigational aids in harbour	BB	1		52

Samatha.P

P. Samatha chowdary
Asst. Prof, Civil Department

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2018 - 2019
Year & semester: III/IV B.Tech & Ist SEMESTER
Branch: CIVIL Engg
Subject code & name: **CE304 & Design of Concrete Structures - I**
Name of faculty: Sri.R. Surendra Babu, Sri.Bhaskar Singh Bondili & Sri V Phani Shankar

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
UNIT-I	**Introduction**					
	Role of structural engineer	Able to understand the load, codal recommendations for methods of design	LCD	1		1
	Reinforced concrete, Structural elements		LCD	1		2
	Loads on structures		LCD	1		3
	Strength and serviceability		LCD	1		4
	Methods of design , Codes of practice		LCD	1		5
	Design of beams for Flexure (Working Stress Method)					
	Assumptions	Able to design the beam cross sections for flexure.	BB	1		6
	Permissible stresses in concrete and steel		BB	1		7
	Transformed section		BB	2		9
	Analysis and design of beams for flexure of singly reinforced		BB	8		17
	doubly reinforced		BB	3	1	21
	flanged sections.		BB	4	2	27

UNIT-II	**Design for Flexure (Limit State Method)**					
	Assumptions; Limit states; Partial safety factors; Modes of failure; Maximum depth of neutral axis;	Able to design the beam cross sections for flexure.	BB	2		29
	Analysis and design for flexure of singly reinforced		BB	5	2	36
	doubly reinforced and flanged sections.		BB	2	2	40
UNIT-III	**Design of beams for Shear, Bond and Torsion (Limit State Method)**					
	Design for shear ; Design for bond – Development length Torsion – Introduction, Effect of torsion, IS Code provisions.	Able to design the beam cross sections for shear, bond and torsion.	BB	2	2	44
UNIT-IV	**Design of beam for Bond and Development length**					
	Anchorage bond; flexural bond; Design for bond; Check for development length by working stress method and limit state method.	Design of beam for Bond and Development length	BB	3	1	48
	Deflection and Cracking					
	Span/Effective depth ratio; Calculation of Short-term and Long-term deflections; Cracking; Bar spacing controls.	Able to check the cross sections for deflections.	BB	3	3	54
UNIT - V	Simply supported and Cantilever beams (Working stress method)	Able to design the beam cross sections when it is subjected to a transverse loading.	BB		3	57
	Simply supported and Cantilever beams (Limit State method)		BB		3	60
	Dog-legged stair case and one way slab (Limit State method)	Able to design stair case.	BB	2	3	65

P. Sudha Babu
(P. Suvendra Babu)

M. Rama Rao.
HOD, CE

LESSON PLAN

Academic year: 2018-19.
Year & Semester: III B.Tech, I Semester.
Branch: Civil Engineering
Subject Code & Name: CE 305: Design of steel structures – I
Name of faculty: Dr.K.S.Sai Ram, N.V.Sairam Kumar, G.Venkata Krishna.

Unit	Topic of syllabus to be covered	Learning outcomes	Teaching mode BB/LCD	Hours required		Total no. of Hours (Cumulative)
				Lecture	Tutorial	
I	What are steel structures; What a steel structure consists of?: Structural steel;	Introduction to steel structures	Lecture/ BB	2		2
	Products of structural steel.	Introduction to products	Lecture/ BB	1		3
	Codes and specifications;	Introduction to standards codes and specifications	Lecture/ BB	1		4
	Fatigue; Brittle fracture; Corrosion protection of steel structures;	Detailing about fatigue, brittle fracture, corrosion protection of steel structures	Lecture/ BB	2		6
	Design philosophies; Methods of structural analysis	To introduce design philosophies and methods of structural analysis	Lecture/ BB	2		8
	Plate local buckling; Classification of sections	To introduce plate local buckling and classification of sections	Lecture/ BB	2		10
	Structural steel fasteners					
	Introduction; Welding – shield metal arc-welding; Automatic submerged arc-welding;	To introduce welding and methods of welding	Lecture/ BB	2		12
	Types of welds; quality of welds; weld symbols and notations; Specifications for welding	To introduce types of welds, quality of welds and symbols and notations; Specifications of welding	Lecture/ BB	2		14
	Bolting - types of failure	To introduce types of bolting	Lecture/	1		15

		failures	BB			
	Design specifications; High strength bolts.	To introduce design specifications of high strength bolts	Lecture/ BB	3		18
II	**Tension members**					
	Introduction; Neat area; shear lag;	To introduce net area; shear lag;	Lecture/ BB	1		19
	Design of tension members	To introduce the design of tension members	Lecture/ BB	4	1	24
III	**Compression members**					
	Introduction; Euler's buckling theory; Behaviour of real columns	To introduce Euler's buckling theory and behavior of real columns	Lecture/ BB	1		25
	Types of sections; Design of columns	To introduce types of sections and design of columns	Lecture/ BB	2		27
	Validity of design strength calculations	To introduce procedure of design of columns	Lecture/ BB	1		28
	Design of compression members	To introduce design of compression members	Lecture/ BB	3		31
	Design procedure; Built – up compression members	To introduce design procedure of built up compression members	Lecture/ BB	3	1	35
IV	**Beams**					
	Introduction; Flexural behavior of beams which does not undergo lateral buckling;	To introduce knowledge on flexural behavior of beam which does not undergo lateral buckling	Lecture/ BB	2		37
	Flexural behavior of beams which undergo lateral buckling; Shear behavior;	To introduce knowledge on flexural behavior of beams which undergo lateral buckling, shear behaviour	Lecture/ BB	2		39
	Web buckling and crippling	To introduce knowledge on web buckling and crippling	Lecture/ BB	1		40
	Design strength in bending	To introduce the procedure of design strength in bending	Lecture/ BB	2		42

	Design strength in shear	To introduce procedure of design strength in shear	Lecture/ BB	2		44
	Limit state serviceability-Deflection	To introduce limit state serviceability and deflection	Lecture/ BB	1		45
V	**Beam – Columns**					
	Introduction; Analysis of beam – columns;	To introduce analysis of beam columns	Lecture/ BB	1		46
	Modes of failure; Design specifications	To introduce modes of failure and design specifications of beam columns	Lecture/ BB	4	1	51
	Column splices and bases					
	Introduction; Column splices	To introduce design philosophies of column splices	Lecture/ BB	2	1	55
	Column bases	To introduce design philosophies of column bases	Lecture/ BB	2		57

Dr. K. S. Sai Ram
Professor

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2018-19
Year & semester: 3rd year semester-1
Branch: Civil Engineering
Subject code & name: **CE 306: STRUCTURAL ANALYSIS-II**
Name of faculty: Smt. J.UshaKranti, Asst.Professor/ Sri S.V.Satyanarayana/ Sri R.Surendrababu

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
I	Introduction to STRUCTURAL ANALYSIS	Learn the basic concepts like stability of structures, member properties etc. Learn the types of analysis and indeterminacies of structure.	BB	2		2
	Matrix methods of Structural analysis	Discuss on matrix methods	BB	1		3
	Flexibility and stiffness, Flexibility matrix, Relationship between flexibility matrix and stiffness matrix	Knowledge on concepts of Flexibility and stiffness and Relationship between flexibility matrix and stiffness matrix	BB	1		4
	Analysis of continuous beams	Discuss on concept of static indeterminacy of the structure	BB	1		5
		Knowledge on to draw SFD & BMD		1		6
	Analysis of rigid jointed plane frames (Single bay, single storey with vertical legs only) by flexibility method.	Discuss on Analysis of frames by castigliano's theorem	BB	1		7
		Learn the concept of sway analysis of frames	BB	2		9
II	Matrix methods of Structural analysis by Stiffness Method : Stiffness; Stiffness matrix	Discuss on kinematic indeterminacy of structure and basic concepts of stiffness	BB	2		11
	Analysis of continuous beams	Able to develop the stiffness matrix	BB	2		13

	Analysis of rigid jointed plane frames (Single bay, single storey with vertical legs only) by stiffness method	Able to solve the problems and concept of SFD & BMD	BB	2		15
		Knowledge on to Develop a computer program by various software's like STAAD PRO etc.,	BB	2		17
III	Plastic analysis of structures : Introduction, Stress-strain curve, Plastic moment - Plastic section modulus, Shape factor, Load factor, Failure mechanisms	Discuss about Stress-strain curve, knowledge on Plastic moment - Plastic section modulus	BB	2		19
	Methods of analysis - Static method and Mechanism method Analysis of continuous beams and single bay rectangular portal frames	Knowledge on behavior of structures beyond yield load, finding shape factors, length of plastic hinge	BB	2		21
	Analysis of continuous beams	Knowledge on determination of ultimate collapse load	BB	3		24
	Analysis of single bay rectangular portal frames	Able to know about sway and combined mechanisms	BB	3		27
IV	Introduction to Finite Element Method: Different types of elements; Displacement models, Relation between nodal degrees of freedom and generalized coordinates; Convergence requirements	Knowledge on basic concepts in Finite Element Method	BB	3		30
	Compatibility requirement; Geometric invariance; Natural coordinate systems; Shape functions	Able to determine the shape functions for different sections	BB	3		33
	Element strains and stresses	Knowledge on element strains and stresses	BB	2		35
	Element stiffness matrix; Element nodal load vector	Able to develop the stiffness matrix	BB	3		38
	Isoparametric elements – Definition, Two-dimensional isoparametric elements – Jacobian transformation, Numerical integration	Knowledge on evaluation of element stiffness matrices and element load vectors for one and two- dimensional problems of elasticity.	BB	3		41
V	Introduction to Structural Dynamics : Fundamental objective of structural dynamics;	Basic knowledge on earthquake engineering and Basic concepts of structural dynamics and system descritisation methods	BB	2		43

	Types of prescribed loadings ; Essential characteristics of a dynamic problem; Methods of descritisation	Able to know the different loadings acting on the structural systems	BB	3		46
	Lumped, Generalised displacements, Finite element concept; Formulation of equation of motion	Knowledge on develop the equation of motion of damped and undamped systems	BB	2		48
		Basic knowledge on solving the problems	BB	3		51
	Dynamic equilibrium equation using D'Alembert's Principle.	Discuss on to develop the Dynamic equilibrium equation using D'Alembert's Principle.	BB	3		54

J. Ushakranti
(DR. J. USHA KRANTI)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2018-19
Year & semester: 2018 2nd semester
Branch: Civil Engineering
Subject code & name: **CE-307 Geotechnical Engineering**
Name of faculty: Dr. M. Rama Rao, Mr. M. Tulasi Kumar and Mr. D. Neeraj Varma

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP /LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	Soil Exploration-Introduction	Awareness of foundation engineering	BB	1		1
1	Methods of exploration; Methods of Boring	Knowledge on methods of boring	BB	1		2
1	Soil Samples; Soil samplers and Sampling	Knowledge on types of soil samplers	LCD	1		3
1	Number and disposition of trial pits and borings; Depth of exploration; Ground water observations	Knowledge on no of bore holes required	LCD	1		4
1	Plate load test; Penetration tests- SPT, CPT (static and dynamic), Pressure meter tests	knowledge of various type of field test	LCD	1		5
1	Geophysical methods- Electrical resistivity and seismic refraction methods	knowledge of various type of field test	LCD	1		6
1	Bore logs; Site investigation report	able to prepare report on soil exploration	LCD	1		7
2	Earth Pressures & Retaining Walls-Introduction; Effect of wall movement on Earth Pressure	Awareness on earth pressure action on retaining wall	BB	1		8
2	Earth Pressure at rest; Rankine's theory of Earth pressure	knowledge on earth pressure action on retaining wall	BB	2	2	12

2	Coulomb's theory of earth pressure	knowledge on earth pressure action on retaining wall	BB	1		13
2	Culmann's graphical method for active earth pressure	knowledge on earth pressure action on retaining wall	BB	1		14
2	Types of retaining walls, selection of backfill and placement condition, drainage in retaining walls	knowledge of various type of retaining walls	LCD	1		15
2	Design considerations for retaining walls.	Knowledge of design considerations of retaining walls	BB	1		16
2	Stability of Slopes-Introduction	Awareness on slopes, embankment	BB	1		17
2	Infinite slopes and translational slides; Definitions of factor of safety	Knowledge on natural slope stabilization	BB	2	1	20
2	Forms of slip surface; Total stress and Effective stress methods of analysis	Knowledge on types of man-made slope stabilization	BB	1		21
2	$\Phi u=0$ Analysis (Total Stress Analysis)	Knowledge on of man-made slope stabilization	BB	1		22
2	Method of slices; Location of most Critical Circle	Knowledge on slope stabilization for c-φ	BB	1		23
2	Stability of Earth Dam Slopes	Knowledge on of dam slope stabilization	BB	1		24
2	Friction Circle Method; Taylor's Stability Number	evaluating stability of slopes using Taylor's stability number	BB	2	1	27
3	Shallow Foundations-Concept of foundations; Types of foundations and their applicability	awareness on types of foundations	LCD	1		28
3	General requirements of foundations; Location and Depth of foundation.	awareness on location and depth of foundations	LCD	1		29
3	Bearing Capacity of Shallow Foundation-Terminology relating to bearing capacity	understanding definitions	BB	1		30
3	Terzaghi's Bearing Capacity theory;	understand the concept for determining shallow foundation	BB	2		32

3	Skempton's Bearing Capacity Analysis for Clay soils	understand the concept for determining shallow foundation	BB	1		33
3	IS-Code Recommendations for Bearing Capacity; Influence of water table on bearing capacity.	understand the concept for determining shallow foundation	BB	2	1	36
4	Settlement of Shallow foundation - Types; Methods to reduce differential settlements	knowledge in reduce settlements	BB	1	1	38
4	Allowable Bearing Pressure; Immediate settlement	able to calculate the settlement in sand	BB	1		39
4	Allowable Bearing pressure of Granular Soils based on Standard Penetration Test Value	able to calculate the B.C from field test	BB	1		40
4	Well Foundations -Types of wells; Components of well foundation; Shapes of wells	knowledge on well foundation	LCD	1		41
4	Depth of a well foundation, Forces acting on well foundation	knowledge on foundations of well foundation	LCD	1		42
4	Construction and Sinking of wells	understand how to construct well foundation	LCD	1		43
5	Pile Foundations - Introduction Uses of Piles; Types of Piles	awareness on deep foundations	LCD	1		44
5	Cast- in-situ Pile construction; Selection of Pile type; Pile driving;	knowledge of construction of pile foundation	LCD	1		45
5	Pile load carrying capacity in compression - Static Pile Load formula	Able to calculate capacity of pile foundation	BB	1	1	47
5	Load tests-static and cyclic pile load tests	knowledge of conducting pile load test	BB	2		49
5	Dynamic Pile formulae; Correlations with Penetration test data;	Able to calculate capacity of pile foundation	BB	1	1	51

5	Group action of Piles - load carrying capacity and settlement; Negative skin friction.	knowledge on behavior of pile group	BB	1	1	53

M-Rama Rao.

M-Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2018-19
Year & semester: **III year II semester**
Branch: Civil Engineering
Subject code & name: **Water Resources Engineering - II, CE 308**
Name of faculty: Dr. A.Srinivasa Prasad, Mr. P.V.S. Maruthi Krishna& Mr. K.Leela Krishna

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
I	Investigations for reservoir planning, selection of site for reservoir	Determination of storage capacity of reservoir, safe yield from a reservoir and probable life of reservoir	BB	1		1
	Zones of storage in a reservoir		LCD	1		2
	Mass inflow and demand curve		BB	1	1	4
	Calculation of storage capacity and safe yield of reservoir		BB	1		5
	Sediment flow in streams		BB	1		6
	Life of reservoir		BB	1	1	8
	Reservoir sediment control, multipurpose reservoir		BB	1		9
	Flood routing – ISD method & trial and error method		BB	1		10
	Classification of dams	Know about different dams and their selection	LCD	1		11
	Factors governing selection of suitable type of dam		BB	1		12
	Factors governing selection of suitable site for a dam		BB	1		13
II	Forces acting on gravity dam	Analysis and design of Gravity dams	LCD	1		14
	Failures of gravity dam		LCD	1		15
	Stability analysis		BB	1	2	18
	Elementary profile of gravity dam		BB	1		19

	Practical profile of gravity dam		BB	1	1	21
	Limiting height, high and low gravity dam		BB	1		22
	Design of gravity dam		BB	1		23
	Galleries, joints, keys and water seals		LCD	1		24
III	Types of earth dams	Understanding different failures of earth dam and controlling seepage	LCD	1		25
	Failures of earth dam		LCD	1		26
	Safe design of earth dam		BB	1		27
	Section of earth dam		LCD	1		28
	Seepage control measures		LCD	1		29
	Types of spillways	Design of hydraulic jump stilling basins below spillways	LCD	1		30
	Energy dissipation below spillways		LCD	1		31
	Stilling basins		BB	1		32
	Design of hydraulic jump type stilling basins with horizontal and sloping aprons		LCD	1		33
IV	Component parts of a diversion head work	Design of weirs on permeable foundations	LCD	1		34
	Types of weirs, failures of weirs and their remedies		LCD	1		35
	Bligh's creep theory		BB	1	1	37
	Khosla's theory		BB	1	1	39
	Design of weirs on permeable foundations		BB	1		40
	Silt control at head works		BB	1		41
	Types of cross drainage works	Selection of suitable CDW and selection of aqueducts	LCD	1		42
	Selection of suitable CDW		LCD	1		43
	Types of aqueducts and their selection		LCD	1		44

(A-Structure Board)

V	Types of outlets	Understanding different canal regulation works	LCD	1		45
	Types of canal falls and their location		LCD	1		46
	Canal regulators and off-take alignment		LCD	1		47
	Canal escapes		LCD	1		48
	Hydro-power advantages and dis advantages and its estimation	Estimation of hydro power and functions different components of hydro power plant	BB	1	1	50
	Flow duration, power duration and load duration curves		BB	1		51
	Load factor, capacity factor, diversity factor and utilization factor		BB	1	1	53
	Types of hydel schemes		BB	1		54
	Components of hydro power plant		LCD	1		55

(A. Srinivasa Prasad)

M. Rama Rao
HOD, CE

CE309 TRANSPORTATION ENGINEERING – I

LESSON PLAN

Academic year: 2017 - 2018
Year & semester: IV/IV B.Tech & Ist SEMESTER
Branch: CIVIL Engg
Subject code & name: CE309 & TRANSPORTATION ENGINEERING – I
Name of faculty: Sri.G. Sanijya, Sri. D.Neeraj Varma & Sri.Y.Naga Mahesh

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
UNIT-I	**Highway Development and Planning**					
	Brief Introduction;	Able to know historical road developments , knows the importance of planning	BB	1		1
	Necessity of highway planning surveys		BB	1		2
	Preparation of master plan		BB	1		3
	Highway planning in India.		BB	1		4
	Highway alignment		BB	1		5
	Factors controlling alignment;	Able to Engg surveys application	LCD	1		6
	Engineering surveys		LCD	1		7
	Road patterns		LCD	1		8
	Drawing & report.		LCD	1		9
UNIT-II	**Highway Geometric Design**					
	Highway cross section elements;	Able to know various geometric designs of highway	LCD	1		10
	Sight distance;		BB	5		15
	Design of horizontal alignment		BB	2		17
	Design of vertical alignment.		BB	3		20
	Highway materials					
	Sub grade soils	Makes to learn about various standards of materials	BB	1		21
	CBR tests; Stone aggregates;		BB	3		24
	Bitumen materials; Paving mixes.		BB	3		27

UNIT-III	**Design of Highway Pavements**					
	Design factors; safety factors; Design of flexible pavements – IRC method,	Study of design of flexible and rigid pavements and stresses calculation	BB	3		30
	IRC recommendations;		BB	5	2	35
	Design of Rigid pavements - Westergard's stress equation for wheel loads and temperatures stress		BB	4	1	39
	Highway construction and maintenance:					
	Construction of W.B.M , B.T,C.C pavements, maintenance of B.T , C.C	Study on different methods of road construction with varing materials	LCD	6		45
UNIT - IV	**TRAFFIC ENGINEERING :**	A detail study on traffic characteristics				
	Traffic characteristics-Road user, vehicular		LCD	6		51
UNIT - v	Signal design ,types of intersections ,design of Rotary intersection.	Knows signal design and rotary	LCD	4		55

G. Saniya

M. Rama Roo
HOD, CE

LESSON PLAN

RVR & JC/CE 310

Academic year: 2018-19.
Year & Semester: III B.Tech, II Semester.
Branch: Civil Engineering
Subject Code & Name: CE 310: Design of steel structures – II
Name of faculty: Dr.K.S.Sai Ram, N.V.Sairam Kumar, G.Venkata Krishna.

Unit	Topic of syllabus to be covered	Learning outcomes	Teaching mode BB/LCD	Hours required		Total no. of Hours (Cumulative)
				Lecture	Tutorial	
I	**Gantry girder**					
	Introduction; Loads on gantry girder;	Introduction to topic and loads on gantry girder	Lecture/ BB/LCD	1		1
	Web buckling and crippling;	Identifying the principles of analysis	Lecture/ BB/LCD	1		2
	Deflection, check.	To explain about deflection and required chekks for design of gantry girder	Lecture/ BB	1		3
	Design of gantry girder	Undertake design of gantry girder	Lecture/ BB	5	2	
II	**Welded plate girder**					
	Introduction; Behavior of transversely stiffened plate girder panels in shear;	Introduction to welded plate girder and panels	Lecture/ BB/LCD	1		11
	Design methods for transversely stiffened web panels;	To identify design method for transversely stiffened web panels	Lecture/ BB	1		12
	Design of end plates; Other design specifications	To identify design of end panels, design specifications	Lecture/ BB	2		14

		and design of stiffeners				
	Design of stiffeners	To explain the design concepts of stiffeners	Lecture/ BB	2		16
	Design of welded plate girder	To identify design of welded plate girder	Lecture/ BB	2	2	20
III	**Connections**					
	Introduction: Bracket connections using welding/bolting	Introduction to bracket connections using welding/bolting	Lecture/ BB/LCD	2		22
	Simple beam end connections – Web connections using welding/bolting	To introduction to simple beam and connections	Lecture/ BB/LCD	2		24
	Seat – angle connection using welding/ bolting	To introduce and explain seat - angle connection using welding/bolting	Lecture/ BB/LCD	2		26
	Stiffened seat angle connection using welding/ bolting	To introduce and explain about stiffened seat angle connection	Lecture/ BB/LCD	2		28
	End plate connection	To introduce and explain end plate connection	Lecture/ BB/LCD	2		30
	Fin plate connection	To introduce fin plate connection	Lecture/ BB	2		32
	Moment resistant beam end connection	To introduce and explain moment resistant beam end connection	Lecture/ BB/LCD	2		34
	Extended end plate connection	To introduce and explain extended end plate connection	Lecture/ BB/LCD	2		36
	Splicing of beams/ girders using bolts	To introduce and explain splicing of beams and girders using bolts	Lecture/ BB/LCD	2		38
IV	**Light-gauge steel sections**					
	Introduction, types of sections, Design of light gauge sections	To introduce principles of light gauge sections and	Lecture/ BB	1		39

		design concepts				
	Design of axially loaded columns	To introduce and explain axially loaded columns	Lecture/ BB	2		41
	Design of beams which do not buckle laterally	To introduce and explain the principles of beams which do not buckle laterally	Lecture/ BB	2		43
	Composite construction					
	Introduction; Composite beam; Method of construction	To introduce principles of composite beams and method of constructions of composite members	Lecture/ BB/LCD	2		45
	Limit states of collapse; limit states of serviceability – Deflection	To introduce the principles of serviceability and deflection	Lecture/ BB/LCD	3		48
V	**Roof Trusses**					
	Components of a trussed roof; types of trusses; dead, live and wind loads on trussed roof	To introduce and explain components of a trussed roof members and loads on to trussed roofs.	Lecture/ BB/LCD	2		50
	Design of tubular purlins	To introduce and explain the principles of tubular purlins	Lecture/ BB	2		52
	Design of a roof truss using tubes	To introduce and explain the design concepts of roof truss using tube sections	Lecture/ BB	3		55
	Design of connections using welding.	To introduce and explain the design concepts of connections using welding	Lecture/ BB/LCD	5		60

Dr. K. S. Sai Ram
Professor

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: :2017-18
Year & semester: :III Year, VI Sem.
Branch : CIVIL (A & C Sections)
Subject code & name: : CE311, Environmental Engineering-II
Name of faculty : Dr.P.Ch.SANJEEVA RAO

Unit Covered	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	Introduction, Objectives , Out Comes-Sewerages.	To know about the course outcome	BB	2	0	2
1	Systems Of sanitation	To know about the systems of sanitation	BB	2	0	4
1	Partially Separate Sewer, Factors Effecting Dwf.	Learn about systems of sewerages	BB	2	0	6
1	Design Consideration- Forms, Velocities And Numerical Examples	Design issues of sewers	BB	2	0	8
1	Sewers Design, Crimp-burges Charts And Table And Some Numerical Problems.	Design - used formulae and tables	BB	2	0	10
1	Factors Effecting The Storm Water Quantity. Rational Method- Estimation Of - I , Numerical Examaples.	Estimation of storm water quantity	BB	2	0	12
1	Design Of Storm Sewers- Numerical Examples. Introduction To Sewer Construction.	Design of storm water sewers	BB	2	0	14
1	Construction And Testing Of Sewers	Construction of sewers	BB	2	0	16
1	Sewer Maintenance And Sewer Appurtenences	Sewers maintenance	BB	2	0	18
2	Sewer Appurtenances And Sewage Pumping	Use sewer appurtenences	BB	2	0	20

2	Characteristics Of Sewage- Physical, Chemical Etc	Characteristics of sewage and examination	BB	2	0	22
2	Introduction To Biological Characteristics And Guest Lecture By Alumni	Characteristics of sewage and examination	BB	2	0	24
2	Biological Characteristics; Growth Trends Of Bacteria; Decomposition Of Sewage; Nitrogen Cycle	Characteristics of sewage and examination	BB	2	0	26
2	Cycles Of Decomposition. Analysis Of Sewage	Decomposition process of organic matter	BB	2	0	28
3	Ultimate 1st Stage Bod, Chlorides, Chlorine And Estimation Of Fats , Oils And Greases.	Chemical analysis of sewage	BB	2	0	30
3	Preliminary Treatment Of Sewage- Screens, Grit Chamber , Skimming Tank And Sedimentation Tank.	Preliminary treatment methods of sewage	BB	2	0	32
3	Design Of Septic Tank- Problems	Septic tank design	BB	2	0	34
3	Septic Tank Effluents Disposal , Introduction Of Trickling Filters.	Septic tank effluents disposal	BB	2	0	36
3	Design Features Of Standard Rate Trickling Filters	Trickling filter design procedure	BB	2	0	38
3	Trickling Filter Design. Introduction To Activated Sludge Process	Comparision of TF Vs ASP	BB	2	0	40
3	Activated Sludge Process- Comparision With Trickling Filters. Methods Of Aeration.	Activated sludge process design	BB	2	0	42
3	Qxidation Pond Design	Design of Oxidation pond	BB	2	0	44
4	Sewage Disposal- Dilution	Disposal by dilution standads and specifications	BB	2	0	46
4	Disposal By Dilution And Irrigation.	Disposal by dilution standads and specifications	BB	2	0	48

4	Sewage Sickness, Sludge Digestion Process	Sewage sick ness causes and control	BB	2	0	50
5	Design Of Sludge Digester, Sludge Conditioning	Sludge digestion techniques	BB	2	0	52
5	Sludge Drying And Disposal Methods	Sludge disposal methods	BB	2	0	54
5	Principles Governing The Building Drainage.systems Of Plumbing	Design of building drainage and principles governig them	BB	2	0	56

(P.CH. SANJEEVA RAO)

M. RAMA RAO
HOD, CE

LESSON PLAN

Academic year: 2018 - 2019
Year & semester: III/IV B.Tech & IInd SEMESTER
Branch: CIVIL Engg
Subject code & name: **CE312 & Design of Concrete Structures - II**
Name of faculty: Sri.R. Surendra Babu, Sri M L N Krishna Sai & Sri.Bhaskar Singh Bondili

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
UNIT-I	**Continuous Beam and Slabs (Limit State Method)**					
	Design of continuous beam	Students can handle the isolated design of individual elements independently.	BB	1	4	5
	Design of Continuous slabs		BB	1	4	10
UNIT-II	**Two Way Slabs (Limit State Method)**					
	Design and detailing of two way slabs	Students can handle the isolated design of individual elements independently.	BB	2	6	18
	Flat Slabs (Limit State Method)					
	Design and detailing of flat slabs by direct design method.	Students can handle the isolated design of individual elements independently.	BB	2	6	26
UNIT-III	**Columns (Limit State Method)**					
	Assumptions	Students can handle the isolated design of individual elements independently.	LCD	3		29
	Design of axially loaded columns		BB	1	3	33
	Design of rectangular columns (short and Long)		BB	2	2	37
	subjected to axial load and bending moment using Interaction diagrams		BB	2	2	41

	(SP-16 Charts)					
UNIT-IV	**Foundations (Limit State Method)**					
	Design and detailing of rectangular Isolated footing	Students can handle the isolated design of individual elements independently.	BB	3		44
	Combined footing for two columns and		BB	3		47
	pile foundations		BB	4		51
UNIT-V	**Retaining Walls (Limit State Method)**					
	Types of retaining walls, Forces on retaining walls	Students can handle the isolated design of individual elements independently.	BB	1		52
	Stability requirements		BB	1		53
	Design and detailing of cantilever type retaining wall		BB	3		56
	Counterfort retaining wall theory and design procedure only.		BB	2		58

(M.LN. KRISHNA SAI)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year:2018-2019
Year & semester: IV YEAR, I SEMESTER
Branch: Civil Engineering
Subject code & Name: CE 401 BRIDGE ENGINEERING
Name of faculty: Syed Syeed Ahammed

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	Introduction & Investigation For Bridges: Components of a Bridge	Learn about the various investigations to be conducted before constructing a bridge	BB,LCD	2		2
	Classification	Learn about the various investigations to be conducted before constructing a bridge	BB,LCD	1		3
	Standard Specifications	Learn about the various investigations to be conducted before constructing a bridge	BB,LCD	1		4
	Need for Investigation	Learn about the various investigations to be conducted before constructing a bridge	BB	1		5
	Selection of Bridge Site, Preliminary Data to be Collected, Preliminary Drawings	Learn about the various investigations to be conducted before constructing a bridge	BB	2		7
	Determination of Design Discharge,	Learn about the various investigations to be conducted before constructing a bridge	BB	3		10
	Economical Span; Location of Piers and Abutments	Learn about the various investigations to be conducted before constructing a bridge	BB	1		11
	Vertical clearance above HFL; Scour depth	Learn about the various investigations to be conducted before constructing a bridge	BB,LCD	1		12

	Traffic Projection; Choice of Bridge type; Importance of Proper Investigation.	Learn about the various investigations to be conducted before constructing a bridge	BB	1		13
2	Concrete Bridges: Various types of bridges	Know about various types of RC bridges and IRC loadings Able to design slab culvert and T-beam bridge	BB,LCD	1		14
	I. R. C. Specifications for road bridges	Know about various types of RC bridges and IRC loadings Able to design slab culvert and T-beam bridge	BB,LCD	2		16
	Culverts: Design of R. C. slab culvert.	Know about various types of RC bridges and IRC loadings Able to design slab culvert and T-beam bridge	BB	4		20
3	T–Beam Bridge: Pigeaud's method for computation of slab moments;	Able to design slab culvert and T-beam bridge	BB	3		23
	Courbon's method for computation of moments in girders	Able to design slab culvert and T-beam bridge	BB	1		24
	Design of simply supported T – beam bridge	Able to design slab culvert and T-beam bridge	BB	6		30
4	Sub Structure for Bridges: Pier and abutment caps;	Able to design substructure like piers and abutments	BB,LCD	1		31
	Materials for piers and abutments;	Able to design substructure like piers and abutments	BB	1		32
	Design of pier; Design of abutment	Able to design substructure like piers and abutments	BB	3		35
	Backfill behind abutment, Approach slab	Able to design substructure like piers and abutments	BB, LCD	1		36
5	Bearings for Bridges: Importance of bearings	Know various types of bearings and able to design elastomeric bearing	BB, LCD	2		38

	Bearings for slab bridges	Know various types of bearings and able to design elastomeric bearing	BB, LCD	1		39
	Bearings for girder bridges, Expansion bearings; Fixed bearings	Know various types of bearings and able to design elastomeric bearing	BB, LCD	1		40
	Design of elastomeric pad bearing	Know various types of bearings and able to design elastomeric bearing	BB	2		42
	Foundations for Bridges: Scour at abutments and piers;	Know the various types foundations used for bridges and able to design well foundation	BB, LCD	2		44
	Grip length; Types of foundations	Know the various types foundations used for bridges and able to design well foundation	BB, LCD	1		45
	Design of well foundation	Know the various types foundations used for bridges and able to design well foundation	BB	3		48

Sd. Ahmed
(Syed. Syeed Ahammed)

M. Rama Rao
(M. RAMA RAO)
HOD, CE

LESSON PLAN

Academic year: 2019-2020
Year & semester: IV year, 7th sem
Branch: Civil Engineering
Subject code & name: CE 402, Quantity surveying
Name of faculty: M.Srikanth Kumar, & U.Pallavi

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
UNIT-I	**Procedure of Estimating** Methods of estimating, Main items of work Deductions for openings, Degree of accuracy Units of measurement	Knowledge about the items of work in building and methods of estimating.	BB	 2 1 1	-------	 2 3 4
	Methods of Building estimates Individual wall method; center line method Arch masonry calculation Estimation of step	Knowledge about the Methods of Building estimates.	BB	 2 1 1	--------	 6 7 8
	Estimate of Buildings Estimate of residential building. Estimate of a building from line plan	Estimating the quantities required for various items of work in residential building.	BB, LCD	 4 1	---------	 12 13
UNIT-II	**Estimate of RCC works** Standard hooks and cranks Estimate of RCC slab Estimate of RCC beam Estimate of RCC T- beam slab Estimate of RCC column with foundation	Estimating the quantities required for various items of work in R.C.C structures.	BB,LCD	 1 1 1 2 1	--------	 14 15 16 18 19
	Canal Estimate Earthwork in canals-different cases Estimate of earth work in irrigation channels	Estimating the quantities required for various items of work in irrigation canals	BB	 1 3	--------	 20 23

UNIT-III	**Road Estimating** Estimate of earth work Estimate of pitching of slopes Estimate of earth work of road from longitudinal section Estimate of earth work in hill roads	Estimating the quantities required for various items of work in Roads	BB	1 1 2 2	--------	24 25 27 29
	Specifications Purpose and method of writing specifications General specifications Detailed specifications for Brick work; R.C.C; plastering; mosaic flooring; R.R stone masonry	Knowledge about the writing the general and detailed specifications of brick work, R.C.C and plastering etc.	BB,LCD	1 1 2	--------	30 31 33
UNIT-IV	**Analysis of rates** Task or out-turn work; labor and materials required for different works Rates of materials and labor **Preparing analysis of rates for the following items of work** Concrete works, RCC work and Brick work in foundation and super structure Plastering, CC flooring and white washing	Understanding the preparation of analysis of rates for various items of work.	BB,LCD	1 1 2 2	--------	34 35 37 39
	PWD Accounts and procedure of works Organization of engineering department; work charged establishment Contract; tender; tender notice; tender schedule Earnest money; security money; measurement book; administrative approval; technical sanction; plinth area; carpet area Approximate estimate: plinth area estimate; revised estimate; supplementary estimate	Knowledge about the organization of engineering department, contract and tender notice.	BB	1 1 1 1		40 41 42 43
UNIT-V	**Valuation**	Knowledge about the valuation of building.	BB	1 1	--------	44 45

	Cost; Price & value; Methods of valuation; Out goings, Depreciation; Methods for Estimating cost depreciation, Valuation of building.			2		47
	Miscellaneous Topics Gross income; Net income; Scrap value; Salvage value; Obsolescence; Annuity; Capitalized value; Years purchase; Life of structures; Sinking fund Standard rent; Process of fixing standard rent; Mortgage	Knowledge about the fixation of rent for government building	BB	2 3	--------	49 52
	Total number of periods					52

M. Srikanth Kumar
(M. Srikanth Kumar)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year:2019-2020
Year & semester: IV/VIIISEMESTER
Branch: Civil Engineering
Subject code & Name:CE405/C - REMOTE SENSING & GIS
Name of faculty: B.KRISHNA CHAITANYA

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	Syllabus Discussion On Remote Sensing	Awareness on remote sensing	BB/ LCD	1		1
	Remote Sensing Defination,data	Understand the importance of remote sensing	BB/ LCD	1		2
	Distance Of remote sensing, remote sensing Process.	Understand the importance of remote sensing	BB/ LCD	2		4
	Electro Magnetic Spectram,remote Sensing	Understand the importance of electromagnetic spectrum	BB/ LCD	2		6
	Classifications Of Remote Sensing	Understand the importance of remote sensing	BB/ LCD	2		8
	Applications, advantages, ideal Remote Sensing.	Applications of remote & ideal sensing	BB/ LCD	2		10
	Concept Of Swath & Naidr	Swath & Naidr	BB/ LCD	1		11
2	Electro Magnetic Spectram, remote Sensing	Understand the importance of electromagnetic spectrum	BB/ LCD	2		13
	Electro Magnetic	Understand the importance	BB/ LCD	2		15

	Radiation, target To Atmosphere Again.	of detail remote sensing process				
	Scattering, hemispherical Absorption, transmission	Understand the importance of energy	BB/ LCD	1		16
	Reflection &Refraction.	Energy variations with interaction of target	BB/ LCD	1		17
	Spectral Reflectance Curve,	Reflectance curve for different bodies	BB/ LCD	2		19
	Map Model & Spatial Elements	Basics of spatial elements	BB/ LCD	1		20
	Spectral Resolutions	Understand the importance of remote sensing	BB/ LCD	1		21
	Spectral & Temporal Resolutions	Understand the importance of remote sensing	BB/ LCD	1		22
	Radiometric Resolutions	Understand the importance of remote sensing	BB/ LCD	1		23
3	Image Interpretation Process, applications	identification of imageries	BB/ LCD	1		24
	Digital image processing	identification of imageries	BB/ LCD	4		28
	Introduction Gis ,	Understand the importance of GIS	BB/ LCD	1		29
	Gis Over View ,4ms Of Gis .linkage Of Gis,definations & Terminology	Understand the importance of GIS	BB/ LCD	1		30
	Theoretical Framework Of Gis ,terminology Of Gis	Process of Theoretical Framework Of Gis	BB/ LCD	1		31
	Components Of Gis,input,output Of Gis	Gis components	BB/ LCD	1		32

4	Data Inputs, keyboard Entry ,manual Digitising, Scanning &automatic Digitising	Data input methods	BB/ LCD	3		35
	Spatial Data Models ,vector &raster Representation	Spatial Data Models	BB/ LCD	1		36
	Vector ,raster Representation	Vector ,raster Representation	BB/ LCD	2		38
	Raster ,vector Models	Types of models	BB/ LCD	2		40
	Advantages &disadvantages Of Vector ,raster Models	Importance of spatial models	BB/ LCD	1		41
	Building Of Gis Layers	Gis layers	BB/ LCD	1		42
	Data Storages	Storage of spatial data	BB/ LCD	1		43
	Data integration –map overlay	map overlay	BB/ LCD	1		44
5	Applications of GIS	Applications of gis	BB/ LCD	1		45
	Applications of GIS	Applications of gis	BB/ LCD	1		46
	Digital Image Formats ,land Use & Land Cover Of Gis Applications	Applications of gis in land use & cover	BB/ LCD	1		47
	Applications Of Watershed Management	Applications Of Watershed Management	BB/ LCD	1		48
	Applications On reservoir Sedementation,ground Water ,surface Water Mapping	Applications On reservoir Sedementation,ground Water ,surface Water Mapping	BB/ LCD	2		50

(A Krishnachaitanya)

M. Rama Rao
(Dr. M. Rama Rao)
HOD, CE

LESSON PLAN

Academic year: 2019 – 2020 (R16)
Year & semester: IV/IV B.Tech & Ist SEMESTER
Branch: CIVIL ENGINEERING
Subject code & name: CE406(A) & Prestressed Concrete
Name of faculty: Ms J.Usha Kranthi (A), Sri.Bhaskar Singh Bondili (B) & K Ramesh Babu (C)

Unit No.	Topic of syllabus to be covered	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
			Theory	Tutorial	
UNIT-I	**Introduction:**				
	Basic concepts of prestressing; Historical development;	LCD	1		1
	Need for High strength steel and high strength concrete; Advantages of prestressed concrete.	LCD	1		2
	Materials for Prestressed Concrete				
	High strength concrete; High tensile steel	LCD	1		3
	Pretressing Systems				
	Tensioning devices; Hoyer's long line system of retensioning	LCD	1		4
	Post tensioning systems;	LCD	1		5
	detailed study of Freyssinet system, Lee-McCall System and Gifford – Udall system	LCD	2		7
	Analysis of Prestress and Bending Stresses				
	Basic assumptions; Analysis of prestress	BB	2		9
	Resultant vstresses at a section;	BB	2	2	13
	Pressure (Thrust) line and internal resisting couple; Concept of Load balancing	BB	2	2	17
	Stresses in tendons; Cracking moment.	BB	1	1	19
UNIT-II	**Losses of Prestress**				
	Nature of losses of prestress;	BB	1		20
	Loss due to elastic deformation of concrete,	BB	2		22
	shrinkage of concrete, creep of concrete, relaxation of stress in steel, friction and anchorage slip;	BB	4	4	30
	Total losses allowed for in design.	BB	1	2	33

UNIT-III	**Flexural strength of prestressed concrete sections**				
	Types of flexural failure	BB	1		34
	Flexural strength of prestressed concrete sections as per IS1343: 2012	BB	3		37
	Design of sections for flexure as per IS1343: 2012				
	Introduction; Design loads and strengths; Strength and serviceability limit states;	LCD	2		39
	Minimum section modulus; Prestressing force	BB	2	2	43
	Limiting zone for the prestressing force;	BB	1		44
	Design of rectangular and I sections	BB	2	1	47
	limit state of collapse in flexure	BB	2		49
UNIT-IV	**Shear Resistance**				
	Shear and Principal Stresses; Ultimate shear resistance of prestressed concrete members and design of shear reinforcement as per IS1343:2012	BB	2	2	53
	Deflections of Prestressed Concrete Members				
	Importance of control of deflections; Factors influencing deflections; Short term deflections of uncracked members	BB	2	2	57
UNIT - V	**Transfer of Prestress In Pre–Tensioned Members & Flexural Bond Stresses**				
	Transmission of prestressing force by bond; Transmission length; Bond stresses	BB	1	1	59
	Transverse tensile stresses; End zone reinforcement;	BB	2		61
	Flexural bond stresses in pre–tensioned and post–tensioned grouted beams.	BB	1	1	63
	Anchorage Zone Stresses In Post-Tensioned Members				
	Stress distribution in end block	BB	1		64
	Anchorage zone stresses and Anchorage zone Reinforcement as per IS1343: 2012	BB	1		65

J. Ushakranthi
(Dr. J. USHAKRANTI)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year:2019-2020
Year & semester: IV YEAR, II SEMESTER
Branch: Civil Engineering
Subject code & Name: CE 407 CONSTRUCTION TECHNOLOGY AND MANAGEMENT
Name of faculty: Syed Syeed Ahammed

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	Introduction, Significance of Construction Management,	Planning for any project and its duration.	BB, LCD	1		1
	Objectives and functions of construction management.	Planning for any project and its duration.	BB, LCD	2		3
	Planning and Scheduling, Planning techniques	Planning for any project and its duration.	BB, LCD	1		4
	Bar charts;	Planning for any project and its duration.	BB, LCD	2		6
	Limita- tions of Bar Charts; Mile stone charts	Planning for any project and its duration.	BB, LCD	1		7
2	Project Management through Networks: Objectives of network tech-niques	Planning for any project and its duration.	BB, LCD	2		9
	Events; Activities	Planning for any project and its duration.	BB	1		10
	Time estimates;	Planning for any project and its duration.	BB	2		12
	Float and Slack, Critical path, near critical path	Planning for any project and its duration.	BB	2		14
	CPM and PERT and their use in Construction Planning	Planning for any project and its duration.	BB	1		15
	Difference between CPM and PERT	Planning for any project and its duration.	BB	2		17
	Probability of completion time for a project.	Planning for any project and its duration.	BB	2		19

3	Cost Control: Direct cost; indirect cost; Total project cost	Optimization of men, material and project cost.	BB	2		21
	Optimization of cost through networks.	Optimization of men, material and project cost.	BB	3		24
	Resource Management (Manpower): Introduction;	Optimization of men, material and project cost.	BB	1		25
	Resource smoothing;	Optimization of men, material and project cost.	BB, LCD	2		27
	Resource leveling.	Optimization of men, material and project cost.	BB, LCD	2		29
4	Construction Equipment: Different types of construction equipment	Know the importance of machinery and its working conditions	BB, LCD	1		30
	use in Constriction Industry	Know the importance of machinery and its working conditions	BB, LCD	1		31
	Factors affecting selection of Equipments	Know the importance of machinery and its working conditions	BB, LCD	1		32
	Owning and operating the equipment	Know the importance of machinery and its working conditions	BB, LCD	2		34
	Equipment maintenance.	Know the importance of machinery and its working conditions	BB, LCD	1		35
	Quality Control: Importance of quality	Implementation of quality management, safety measures and best utilization of Management Information system.	BB, LCD	2		37
	Elements of quality;	Implementation of quality management, safety measures and best utilization of Management Information system.	BB, LCD	2		39
	Elements of quality;	Implementation of quality management, safety measures and best utilization of Management Information system.	BB, LCD	1		40
	Documentation;	Implementation of quality management, safety measures and best utilization of Management Information system.	BB, LCD	2		42
	Total quality management.	Implementation of quality management, safety measures and best utilization of Management Information system.	BB, LCD	2		44

5	Safety Management: Importance of safety;	Implementation of quality management, safety measures and best utilization of Management Information system.	BB, LCD	2		46
	Approaches to improve safety in construction industry	Implementation of quality management, safety measures and best utilization of Management Information system.	BB, LCD	2		48
	Safety benefits to employers	Implementation of quality management, safety measures and best utilization of Management Information system.	BB, LCD	2		50
	employees and customers	Implementation of quality management, safety measures and best utilization of Management Information system.	BB, LCD	1		51
	Project Economics: Time value of money	Assessing project profitability	BB, LCD	1		52
	discounted cash flow analy-sis	Assessing project profitability	BB, LCD	2		54
	Payback period;	Assessing project profitability	BB, LCD	2		56
	Return on investment	Assessing project profitability	BB, LCD	1		57
	Benefit cost analysis	Assessing project profitability	BB, LCD	1		58
	re-placement analysis	Assessing project profitability	BB, LCD	1		59
	Inflation	Assessing project profitability	BB, LCD	1		60

SD. Ahmed

(Syed. Syeed Ahammed)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2019-2020
Year & semester: Final year, 2nd semester
Branch: Civil Engineering
Subject code & name: CE408/A and EARTHQUAKE RESISTANT DESIGN OF STRUCTURES
Name of faculty: Dr.J.UshaKranti & Dr. B.KesavaRao

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode:	Hours required		Total hours
			BB/OHP/LCD	Theory	Tutorial	Cumulative
1	Introduction Sources Of Vibration Degrees Of Freedom, Types Of Vibrations	Awareness of sources and types of vibrations of the structures.	LCD	2		2
	Equivalent Stiffness Of Springs	Able to relate the different stiffness of the structural elements to equivalent stiffness.	BB	2		4
	Equation Of Motion Of Undamped Single Degree Freedom System Subjected To Free Vibrations	Knowing the behaviour of single storied system	BB	2		6
	Solving Problems		BB		1	7
	Equation Of Motion Of Damped Single Degree Freedom System	Getting the sound knowledge of total system when damping systems are used	BB	2		9
	Solving Problems		BB		2	11
	Damped Sdof Subjected To Harmonic Exiction	Sound knowledge SODF system subjected to periodic loadings	BB	2		13
	Solving Problems		BB		1	14
	Equation Of Motion Under Earthquake Excition	Understanding the concepts of structure when subjected to earthquake loading	BB	1		15
2	Elements Of Earth Quake Engineering	Awareness of history and structure of earth, tectonic plate actions.	LCD	1		16

	Seismic Zoning Of India,Earthquake size - Intensity and magnitude	Able to know In which zone the structure is located or earth quake prone zone	LCD	2		18
	Strong Motion Earth Quakes	One can understand what to Learnfrom past earthquakes and ground characteristics	LCD, BB	2		20
	Response Spectrum	Behaviour of structure when subjected to earthquake	BB	1		21
	Siesmo Resistant Architecture Introduction; Lateral load resisting systems- moment resisting frame, Building with shear wall or bearing wall system, building with dual system;	Sound knowledge about the type of system used in the earthquake prone areas	BB	2		23
	Building configuration-Problems and solutions;	Problems and configurations of the types of buildings	BB	1		24
	Building characteristics - Mode shape and fundamental period, building frequency and ground period, damping,	Sound knowledge about the building characteristics	BB	2		26
	Ductility, seismic weight, hyperstaticity/redundancy, non-structural elements, foundation soil/ liquefaction	Able to estimate the behaviour of the system	BB	2		28
	Foundations; Quality of construction and materials - quality of concrete, construction joints, general detailing requirements.	Awareness of the type and quality of the construction, concrete and detailing of the structure	BB	2		30
3	Equivalent Static Method	Able to calculate the lateral forces on a building subjected to earthquakes	BB	2		32
	Solving Problem By Equivalent Static Method (As per IS:1893(part-I)-2002)		BB		2	34
	Calculation Of Lateral Force By Equivalent Static Method (As per IS:1893(part-I)-2002)	Able to calculate the lateral forces on a building using equivalent static method	BB	1	1	36

	Analysis for different load combinations, Design forces and moments in beam and columns.	Able to estimate the loads on the structure and design forces and moments in structural elements	BB		2	38
4	Design Of Beam	Sound knowledge about reinforcement and fixing dimensions of the members	BB	1	1	40
	Design of column	Sound knowledge about reinforcement and fixing dimensions of the column members subjected to moments and axial forces	BB	1	1	42
	Design Of Footing	Sound knowledge about reinforcement and fixing dimensions of the footings subjected to moments and axial forces	BB	1	2	45
	Detailing of entire frame	Able to give the details of the reinforcement in the beam, column and footing	LCD,BB	1		46
5	Soil Liquefaction and types	Able to get knowledge about the characteristics of soil subjected to earthquakes	LCD,BB	2		48
	Effect of liquefaction on built environment	Awareness of the type of effects on the structures when the soil is liquefied	LCD, BB	2		50
	Evaluation of Liquefaction Suspectability	Knowledge about the estimation of liquefaction	LCD, BB	3		53
	Liquefaction hazard mitigation	Able to decide what are the methods to be taken to overcome the liquefaction	LCD, BB	2		55
	Seismic Slope Stability Introduction	Understand the behaviour of soil beneath a foundation during an earthquake	LCD, BB	1		56
	Psuedostatic method	Understand the behaviour of soil beneath a foundation during an earthquake	LCD, BB	2		58
	Newmark's sliding block method	Understand the behaviour of soil beneath a foundation during an earthquake	LCD, BB	2		60

J Ushakranti
(Dr. J. USHA KRANTI)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2019-20
Year & semester: IV Year VIII semester
Branch: Civil Engineering
Subject code & name: **CE409/C Advanced Environmental Engineering**
Name of faculty: P.V.S. Maruthi Krishna & M. Srikanth Kumar

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP /LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	**Stream Sanitation.**					
	Introduction; Self-purification in streams	Understand the importance of self-purification	BB	1		1
	Factors affecting self-purification; Dissolved Oxygen Balance in streams	Understand the importance of self-purification	BB	1		2
	Zones of Self-purification	Understand the importance of self-purification	BB	1		3
	Streeter-Phelps's Dissolved Oxygen Model	Determine the critical D.O. deficit, critical time and its location d/s the point of discharge	BB	1	2	6
	Impact of pollutants on stream waters and usage of stream water with special reference to flora and fauna	Understand the effects of various pollutants on receiving streams.	LCD	1		7
1	**New Concepts in Biological Waste Treatment**					
	Introduction; Nitrogen removal by nitrification and de-nitrification	Acquires knowledge in new and more advanced biological treatment methods	BB	2		9
	Phosphate removal, Rotating Disc Biological Contactor	Acquires knowledge in new and more advanced biological treatment methods	BB	1		10
	Anaerobic filters; U-Tube aeration systems	Acquires knowledge in new and more advanced biological treatment methods	BB	1		11

2	**Industrial Wastewater Treatment**					
	Introduction to Industrial Wastewater treatment	Understand the characteristics and suggest suitable methods of treatment and disposal of industrial wastewater	BB	1		12
	Sugar Plant: Quantity of liquid waste; Characteristics of liquid waste	Understand the characteristics and suggest suitable methods of treatment and disposal of industrial wastewater	BB/LCD	1		13
	Effects on receiving streams; Methods of its treatment and disposal	Understand the characteristics and suggest suitable methods of treatment and disposal of industrial wastewater	BB/LCD	1		14
	Dairy Industry: Quantity of liquid waste; Characteristics of liquid waste	Understand the characteristics and suggest suitable methods of treatment and disposal of industrial wastewater	BB/LCD	1		15
	Effects on receiving streams; Methods of its treatment and disposal	Understand the characteristics and suggest suitable methods of treatment and disposal of industrial wastewater	BB/LCD	1		16
	Pulp and Paper Industry: Quantity of liquid waste; Characteristics of liquid waste	Understand the characteristics and suggest suitable methods of treatment and disposal of industrial wastewater	BB/LCD	1		17
	Effects on receiving streams; Methods of its treatment and disposal	Understand the characteristics and suggest suitable methods of treatment and disposal of industrial wastewater	BB/LCD	1		18
3	**Sources and Classification of Air Pollution**					
	Introduction and definitions	Understand the sources of air pollution	BB	1		10
	Stationary and mobile sources; Primary and secondary pollutants	Understand the sources of air pollution	BB	1		20
	Natural contaminants; Particulate matter; Aerosols; Gaseous pollutants	Understand the sources of air pollution	BB	1		21
3	**Meteorology and Air Pollution**					
	Atmospheric stability and	Determine the influence of meteorological	BB	2		22

	temperature inversions; Maximum Mixing Depth	parameters on dispersion and propagation of air pollutants				
	Wind direction and speed; Secondary meteorological parameters	Determine the influence of meteorological parameters on dispersion and propagation of air pollutants	BB	1		23
	Plume behaviour	Determine the influence of meteorological parameters on dispersion and propagation of air pollutants	BB	1		24
	Gaussian Dispersion Model	Determine the influence of meteorological parameters on dispersion and propagation of air pollutants	BB/OHP	1	1	26
	Plume rise; Wind rose		BB	1		27
3	**Effects of Air Pollution**					
	Global Effects: Global warming; Ozone depletion; Acid rains	Understand the global and local effects of air pollution	BB/LCD	1		28
	Effects of air pollutants on human health	Understand the global and local effects of air pollution	BB	1		29
	Effects on plants; Economical effects	Understand the global and local effects of air pollution	BB	1		30
4	**Control of Air Pollution**					
	Objectives; Types of collection equipment: Settling chamber & suitability	Suggests a suitable air pollution control device	BB	1		31
	Inertial separators; Cyclones & their suitability	Suggests a suitable air pollution control device	BB	1		32
	Filters & their applications	Suggests a suitable air pollution control device	BB	1		33
	Electrostatic Precipitators & their suitability	Suggests a suitable air pollution control device	BB	1		34
	Scrubbers & their applications	Suggests a suitable air pollution control device	BB	1		35
4	**Automobile Pollution**					
	Introduction & Vehicular Emissions	Acquires knowledge on vehicular emissions	BB	1		36

	Fuel combustion	Acquires knowledge on combustion process	BB	1		37
	Automobile emission control	Suggest suitable measures to control automobile pollution	BB/LCD	2		39
5	**Noise Pollution**					
	Introduction; Levels of noise	Acquire knowledge on noise pollution and noise measurement	BB	1		40
	Noise rating systems; Measurement of noise	Acquire knowledge on noise pollution and noise measurement	BB	1		41
	Sources of noise and their noise levels; Effects of noise	Acquire knowledge on noise pollution sources and effects	BB/LCD	1		42
	Acceptable noise levels; Control of noise	suggest suitable noise control techniques according to the situation	BB/LCD	1		43
5	**Urban Solid Waste Management**					
	Sources; Quantities and characteristics; Classification	Suggest suitable methods for collection, transport, recovery, reuse and treatment of urban solid waste	BB	1		44
	Functional elements, Collection and transportation	Suggest suitable methods for collection, transport, recovery, reuse and treatment of urban solid waste	BB/LCD	1		45
	Treatment methods compositing, incineration, sanitary landfill and pyrolysis	Suggest suitable methods for collection, transport, recovery, reuse and treatment of urban solid waste	BB	2		47
	Recovery and reuse	Understand significance or recovery & reuse	BB	1		48

(PVS MARUTHI KRISHNA)

M-Rama Rao
HOD, CE

LESSON PLAN

Academic year:2019-2020
Year & semester: IV th YEAR, II SEMESTER
Branch: Civil Engineering
Subject code & Name: CE410 REPAIR AND REHABILITATION OF STRUCTURES
Name of faculty: N.Tejaswini

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	Need for repair and rehabilitation of structures, Road map to repair of structures.	Various distress and damages to concrete and masonry structures	BB	2		2
	Degradation of reinforced concrete structures, Major causes and signs of deterioration	Various distress and damages to concrete and masonry structures	BB	2		4
	Durability and permeability aspects of concrete	Various distress and damages to concrete and masonry structures	BB	2		6
	Deterioration of concrete structures	Various distress and damages to concrete and masonry structures	BB	2		8
	Cracking:- types, causes and characteristics.	Various distress and damages to concrete and masonry structures	BB	2		10
2	Preliminary investigation:- Scope and methodology of preliminary investigation,;	The importance of maintenance of structures and evaluation of concrete structures	BB	2		12
	Rapid visual investigation; Output of preliminary investigation:-	The importance of maintenance of structures and evaluation of concrete structures	BB	2		14

	Damage classification based on preliminary investigation, reporting of findings of preliminary investigation	The importance of maintenance of structures and evaluation of concrete structures	BB	2		16
	Detailed investigation:- scope and methodology of detailed investigation	The importance of maintenance of structures and evaluation of concrete structures	BB	2		18
	Non destructive tests for strength estimation of concrete	The importance of maintenance of structures and evaluation of concrete structures	BB	2		20
	Semi-destructive tests for strength evaluation of concrete	The importance of maintenance of structures and evaluation of concrete structures	BB	2		22
	Tests to assess the corrosion potential of concrete	The importance of maintenance of structures and evaluation of concrete structures	BB	2		24
	Chemical tests of concrete	The importance of maintenance of structures and evaluation of concrete structures	BB	2		26
3	Repairmethodology:- Options, performance requirements of repair systems	Assessing various types and properties of repair materials	BB	2		28
	factors of selecting repair methods, causes of damage, extent of damage, selection of repair material and repair methods	Assessing various types and properties of repair materials	BB	2		30
	preparation of the old concrete for repair, application of the repair material and curing method.	Assessing various types and properties of repair materials	BB	2		32

	Cement based repair methods, polymer modified repair materials	Assessing various types and properties of repair materials	BB	2		34
	Resign based products, Micro-concrete, Composites.	Assessing various types and properties of repair materials	BB	2		36
	Repairs using mortars, Dry pack and epoxy bonded dry pack, pre-placed aggregate concrete, Gunite or shortcrete replacement of concrete, grouting, polymer impregnation, resin injection,	Assessing various types and properties of repair materials	BB	2		38
	Routing and sealing, stitching, surface patching, overlays and surface coatings, autogenous healing, gravity filling, drilling and plugging.	Assessing various types and properties of repair materials	BB	2		40
4	Design philosophy of strengthening;-General procedure for strengthening of structures;Strengthening techniques:-section enlargement, composite construction	Assessing damage to structures and various strengthening techniques	BB	2		42
	post tensioning, stress reduction, strengthening by reinforcement; Strengthening of beams:- flexural strengthening of beams	Assessing damage to structures and various strengthening techniques	BB	2		44
	shear strengthening of beams, strengthening of slabs, strengthening of columns, strengthening of footings.	Assessing damage to structures and various strengthening techniques	BB	2		46
5	Introduction, considerations in retrofitting of structures; Source of weakness in RC frame buildings:-;	Various retrofitting techniques used for seismic retrofitting of buildings	BB	2		48

	Classification of retrofitting techniques, Retrofitting strategies for RC buildings,					
	Structure damage due to discontinuous load path, structural damage due to lack of deformation, quality of workmanship and materials	Various retrofitting techniques used for seismic retrofitting of buildings	BB	2		50
	Classification of retrofitting techniques, Retrofitting strategies for RC buildings,	Various retrofitting techniques used for seismic retrofitting of buildings	BB	2		52
	Structural level (global) retrofit methods, Member level (local) retrofit methods.	Various retrofitting techniques used for seismic retrofitting of buildings	BB	2		54

N. Tejaswini
(Nandipati. Tejaswini)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2018-2019
Year & semester: I B.Tech & I Semester
Branch: Civil Engineering
Subject code & name: **CE111 &Mathematics-I**
Name of faculty: Dr.Ch.H.K.Gopal

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
	Introduction to syllabus		BB	2		2
1.	Evolutes and Involutes	Evaluate certain improper integrals apart from some other applications they will have a basic understanding of beta and gamma functions.	BB	3		5
	Evaluation of improper integrals: Integrals without infinite limits of integration	Evaluate certain improper integrals apart from some other applications they will have a basic understanding of beta and gamma functions.	BB	2		7
	Beta function, Gamma function, Relation between beta and gamma functions(without proof)	Evaluate certain improper integrals apart from some other applications they will have a basic understanding of beta and gamma functions.	BB	4		11

	Applications of definite integrals to evaluate surface areas and volumes of revolutions.	Evaluate certain improper integrals apart from some other applications they will have a basic understanding of beta and gamma functions.	BB	4		15
2.	Rolle's theorem(without proof),	Know the fallouts of Rolle's Theorem that is fundamental to application of analysis to Engineering problems.	BB	2		17
	Lagrange's mean value theorem(without proof),	Know the fallouts of Rolle's Theorem that is fundamental to application of analysis to Engineering problems.	BB	2		19
	Taylor's and Maclaurin series	Know the fallouts of Rolle's Theorem that is fundamental to application of analysis to Engineering problems.	BB	2		21
	Sequences, Series	Know the fallouts of Rolle's Theorem that is fundamental to application of analysis to Engineering problems.	BB	2		23
	Series of positive terms, Convergence tests:	Know the fallouts of Rolle's Theorem that is fundamental to application of analysis to Engineering problems.	BB	2		25

	Comparison test(limit form) D'Alembert's ratio test, Raabe's test for convergence.	Know the fallouts of Rolle's Theorem that is fundamental to application of analysis to Engineering problems.	BB	5		30
3.	Fourier series: Half range sine and cosine series, Parseval's formula.	Understand Fourier series and deal with functions of several variables that are essential in most branches of engineering	BB	3		33
	Multivariable Calculus: Limit, continuity and partial derivatives	Understand Fourier series and deal with functions of several variables that are essential in most branches of engineering	BB	3		36
	Total derivative, Maxima, minima and saddle points of two variables, Method of Lagrange multipliers.	Understand Fourier series and deal with functions of several variables that are essential in most branches of engineering	BB	4		40
	Scalar and vector point functions , Gradient, directional derivative divergence and curl, del applied twice to point and product of point functions(without proofs),	Understand Fourier series and deal with functions of several variables that are essential in most branches of engineering	BB	5		45
4.	Rank of a matrix	Do problems on matrices and linear algebra in a comprehensive manner.	BB	2		47

	Normal form	Do problems on matrices and linear algebra in a comprehensive manner.	BB	2		49
	Inverse by Gauss Jordan method	Do problems on matrices and linear algebra in a comprehensive manner.	BB	1		50
	System of linear equations: non homogeneous, Homogeneous systems	Do problems on matrices and linear algebra in a comprehensive manner.	BB	3		53
	Rank-nullity theorem(without proof)	Do problems on matrices and linear algebra in a comprehensive manner.	BB	1		54
	Eigenvalues and eigenvectors	Do problems on matrices and linear algebra in a comprehensive manner.	BB	2		56
	Cayley-Hamilton Theorem	Do problems on matrices and linear algebra in a comprehensive manner.	BB	1		57
	Diagonalization of matrices, reduction of quadratic form to canonical form.	Do problems on matrices and linear algebra in a comprehensive manner.	BB	3		60

(Dr CH. H. S. GOPAL)

LESSON PLAN

Academic year: 2018-2019
Year & semester: I B.Tech & I Semester
Branch: Civil Engineering
Subject code & name: **CE112 & Engineering Physics(Mechanics)**
Name of faculty: Dr. AGK Moorthy(C-Sec.), Dr K.Surendranath (A-Sec.), Dr. P. Bhaskara Rao (B-Sec.)

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
	Introduction to syllabus		BB	1		1
1.	introduction To Vectors	Review of Vectors and Scalars used in mechanics.	BB	2		3
	Representation Of Vector Components And Vectors In A Plane	Knowledge about vector components in Cartesian coordinates	BB	1		4
	Transformation Of Vector Components Under Rotation	Discuss the how vector components change due to rotation of of Cartesian system. Rotation matrix	BB	2		6
	Definition of scalars and vectors from rotation matrix	Deep knowledge about vectors and scalars	BB	1		7
	Forces In Nature	Discuss the fundamental forces in nature	BB	1		8
	Cartesian, Cylindrical And Spherical Coordinates	Awareness of different coordinate systems and conversion from one system to another	BB	2		10
	Newton's Laws. Invariant Of Newton's Laws	Review of Newton laws and discuss how they are invariant under translation, rotation, uniformly moving frames	BB	2		12
	Position, Velocity And Acceleration In Plane Polar Coordinates	Introduction to pane polar coordinates and derive the expression for velocity and acceleration of moving particle in plane polar coordinates.	BB	2		14
	Position, Velocity And Acceleration In Cylindrical & Spherical Polar Coordinates	Derive the parameters	BB	1		15
	Conservative & Non-conservative	Awareness of these forces	BB	1		16

	Forces					
	Central Forces (basic Definition & Examples).	Knowledge on central forces and properties and examples	BB	1		17
	F= - Grad U, Equipotential Surfaces, Angular Momentum, Conservation Of Angular Momentum	Discuss the conservation of angular momentum	BB	1		18
	Centrifugal & Coriolis Forces	Motion of particle in uniformly accelerated frames and obtain the expressions for Centrifugal & Coriolis Forces	BB	1		19
	Foucault pendulum	Provide the idea of rotation earth and discuss the working of Foucault pendulum	BB	1		20
2.	Damped and Forced oscillations: Harmonic Oscillators	Knowledge SHM: formation of diff. Eqn., Solution, Characteristics, Energy In Simple Harmonic Motion, Relation Between Displacement, Velocity & Acceleration, Problems.	BB	2		22
	Damped harmonic oscillators, different damping oscillators- over or heavy, critical and under damping, energy and power dissipations, quality factor	Differentiate Free And Forced Oscillations. Knowledge on damped harmonic oscillators, Differential Equation, General Solution, Over Damped , Critical And Under-damped Conditions. Logarithmic Decrement, Relaxation Time, Q-factor. Problems	BB	5		27
	Forced Oscillators, resonance with some examples	Knowledge on forced oscillations, forced Oscillator : Diff.equation. Solution, Resonance with examples, Amplitude Resonance and Problems	BB	4		31
3.	Planar Rigid Body Mechanics: Rigid Body, Introduction to Rotational Motion and Definitions	Knowledge about translation and rotational motions of bodies.	BB	1		32
	KE Of A Rotating Body, Angular Momentum Of Rigid Body. Rotation About Fixed Axis. Equation Of Motion(rotational Motion)	Formation of expressions for energy, angular momentum of rotating body.	BB	1		33
	Combined Translation And	Derive the different expressions for translation	BB	2		36

	Rotational Motion Of A Rigid Body, Body Rolling Down An Inclined Plane	and rotating bodies.				
	Moment of Inertia Tensor. Properties.	Knowledge on tensors and properties of Inertia tensor.	BB	2		38
	Euler's laws of motion.	Knowledge on Euler Equations.	BB	1		39
	Theorems Of Moment Of Inertia	Statements and proofs	BB	1		40
	Rate Of change of Vector rotating with Angular Velocity.	Knowledge on rate of change of vector	BB	1		41
	Three Dimensional Motion.	Introduction to three dimensional motions.	BB	2		43
4.	Mechanics of solids: Friction, laws of limiting Friction,	Knowledge about friction, laws Of Friction, Angle of Friction, Problems	BB	2		45
	Concepts of elasticity and plasticity, stress and strain at a point, Stress-strain curve: Hooke's law, three moduli of elasticity, Poisson's ratio	Knowledge on elasticity and plasticity, Hookes law, stress and strain at a point. Three Types Of Moduli Of Elasticity, Poisson Ratio.	BB	4		49
	Torsion Pendulum : Determination of Rigidity Modulus of the material of a wire.	Rational SHM , Twisting Couple On A Cylinder, Torsion Pendulum.Torsion Pendulum And Determination Of Rigidity Modulus	BB	3		52
	Bending of beams, uniform and non-uniform bending	Bending Beams, Bending Moment. Non Uniform Bending Uniform Bending. Problems	BB	4		56
	Revision and explanation of model papers	Revision and explanation of model papers	BB	2		58

(Dr. A. G. K. Murthy)

LESSON PLAN

Academic year: 2019-20
Year & Semester : I B.Tech & I Semester
Branch: Civil Engineering
Subject Code & Name: CE 113& English for Communication Skills
Name of the faculty: K. Sudhakar

Unit No.	Topic of the syllabus covered	Learning Outcomes	Teaching mode: BB/OHP/ LCD	Hours required: (Theory)	Hours required: (Tutorial)	Total hours cumulative
1.	One-word substitution.	The use of Vocabulary.	BB	1		1
	Phonetics.	Speech dynamics	BB	1		2
	One-word substitution.	The use of Vocabulary.	BB	1		3
	Phonetics.	Speech dynamics.	BB	1		4
	Phonetics.	Speech dynamics.	BB	1		5
	Speech sounds.	Accuracy in Pronunciation.	BB	1		6
	Speech sounds.	Accuracy in Pronunciation	BB	1		7
2.	E-mail writing.	Effective Communication.	BB	1		8
	E-mail writing.	Effective Communication	BB	1		9
	E-mail writing.	Effective Communication	BB	1		10
	Synonyms, Antonyms & Root words.	The use of Vocabulary	BB	1		11
	Synonyms & Antonyms.	The use of Vocabulary	BB	1		12
	Synonyms & Antonyms.	The use of Vocabulary	BB	1		13
	Letter writing.	Effective Communication	BB	1		14
	Assignment Qs. given.	Discussion.	BB	1		15
	Precis writing.	Effective Communication	BB	1		16
	Letter writing.	Effective Communication	BB	1		17
3.	Tenses.	Application of grammar rules.	BB	1		18
	Tenses.	Application of grammar rules.	BB	1		19
	Articles.	Application of grammar rules.	BB	1		20
	Articles.	Application of grammar rules.	BB	1		21
	Articles.	Application of grammar rules.	BB	1		22
	Subject-Verb Concord.	Application of grammar rules.	BB	1		23
	Subject-Verb Concord.	Application of grammar rules.	BB	1		24

	Subject-Verb Concord.	Application of grammar rules.	BB	1		25
4.	Paragraph writing.	Effective Communication	BB	1		26
	Descriptive & Narrative paragraphs.	Effective Communication	BB	1		27
	Note-Making and Note-Taking.	Effective Communication	BB	1		28
	The Methods of preparing notes.	Effective Communication	BB	1		29
	Assignment qs. given.	Discussion.	BB	1		30
	Note-Making & Note-Taking.	Effective Communication	BB	1		31

(K. SUDHAKAR)

M Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2018-2019
Year & semester: Ist. B. Tech & II Semester
Branch: CE/EC/ME- Engineering
Subject code & name: **CE/EC/ME-121(R-18)**
Name of faculty: Dr. S MASTHAN RAO

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
	Introduction to syllabus		BB	1		1
1.	Basic Definitions; Classification of Differential equations of first order	Solve of differential equations which model physical processes	BB	1		2
	Linear equations	Solve of differential equations which model physical processes	BB	1		3
	Bernoulli's equation	Solve of differential equations which model physical processes	BB	1		4
	Exact equations, equations reducible to exact equations.	Solve of differential equations which model physical processes	BB	3		7
	Differential equations of higher order – Second order linear differential equations with variable coefficients	Solve of differential equations which model physical processes	BB	2		9
	Method of variation of parameters	Solve of differential equations which model physical processes	BB	2		11
	Cauchy's homogeneous linear equation and	Various definitions	BB	1		12
	Legendre's linear equation Symbols	Solve of differential equations which model physical processes	BB	2		14

2.	Multiple Integrals Double integrals (Cartesian and polar),	EvaluteVarious methods of Multiple Integrals, Double integrals in chaining when problems	BB	3		17
	Change of order of integration,	Double Integrals in Change of order of integration	BB	3		20
	Change of variables Cartesian to polar coordinates. .	Knowledge on Change of variables Cartesian to polar coordinates.	BB	3		23
	Area by double integrals,	Knowledge on Area by double integrals	BB	3		26
	Triple integrals (Cartesian),	Knowledge on Triple integrals (Cartesian), integrals	BB	3		28
	Volume by triple integrals	Knowledge on applications of Volume by triple integrals	BB	2		30
3.	Integration of vectors –Line integrals, surface integrals,	understanddifferentiation and integration of functions of a vector functions	BB	2		32
	Green's theorem in the plane (without proof),	Knowledge on problems on Green's theorem	BB	2		34
	Stoke's theorem (without proof), Volume integrals,	Knowledge on problems on Stoke's theorem	BB	2		36
	Gauss divergence theorem(without proof).	Knowledge on problems on Gauss 's theorem	BB	2		38

	Complex variables – Differentiation, .	understanddifferentiation and integration of functions of a complex variable	BB	2		40
	Cauchy Riemann equations (proof),	Knowledge on understanddifferentiation and integration of functions of a complex variable	BB	2		42
	Cartesian and polar-without analytic functions.	Knowledge on understanddifferentiation and integration of analatic functions	BB	2		44
4.	Harmonic functions, finding harmonic conjugate.	Knowledge on Harmonic functions	BB	3		47
	Milne Thomson method	Knowledge on problems on Milne Thomson method	BB	3		50
	Complex integration-Cauchy Integral Theorem (without proof),	Knowledge on Complex integration-Cauchy Integral Theorem	BB	4		54
	Cauchy Integral Formula (without proof).	Knowledge on Cauchy Integral Formula and problems	BB	4		58

(Dr. S. MASTAN RAO)

CE 122 - ENGINEERING CHEMISTRY
(R-18 Regulations)

LESSON PLAN AND DELIVERY

CONTENT	No of periods
UNIT-I: Molecular structure, Intermolecular forces and Energy systems	**15 Hrs.**
Salient Features of Valence Band Theory, Limitations	1
Crystal field theory-salient features,	1
Energy level diagrams-tetrahedral and octahedral complexes,	2
Crystal field stabilization energies, magnetic properties	1
Inter molecular forces- ionic, dipolar, Vander Waal's interaction	1
Hydrogen bonding, critical Phenomena-Andrew's isotherms of CO_2,	2
Derivation of critical constants from Vander Waal's equation.	2
Brief introduction to Electro Chemistry, Electrode potential, electrochemical series, Nernst equation and its applications.	2
Batteries-Primary (Dry cell) and secondary (Lead acid),	1
Lithium battery (Li-MnO_2) advantages, Fuel cell (H_2-O_2 cell).	2
UNIT-II: Water Chemistry and Corrosion	**15 Hrs**
Introduction to Water Chemistry-WHO standards	1
Municipal water treatment-Removal of suspended impurities-Sedimentation,	2
Coagulation and Filtration.	
Disinfection of water by chlorine, Break point chlorination, Dechlorination, Purification by ion-exchange method and	2
reverse osmosis.	2
Corrosion-Introduction, Electrochemical theory of corrosion,	1
Galvanic corrosion, differential aeration corrosion,	2

Factors-temperature, pH, overvoltage. Cathodic protection by sacrificial anodic method and impressed current method. Electroplating (Cu), Electrolessplating (Ni).	2 1 2
UNIT-III: Organic reactions and Polymers	**15 Hrs.**
Types of organic reactions-Substitution (SN^1 and SN^2), Elimination (E1 and E2) Addition-Markownikoff's rule and anti-Markownikoff's rule, Cyclisation (Diel's Alder reaction), Synthesis of aspirin.	2 2 1
Polymers-Functionality, Degree of Polymerization, Tacticity-Addition and condensation polymerization, Relationship between Structure and Properties of polymers (Strength, Crystallinity, Elasticity, Plastic Deformation, Glass transition temperature (T_g)), Factors affecting T_g. Conducting polymers: Introduction, Examples, General applications, Mechanism of conduction in polyacetylene.	1 1 2 2 2
UNIT-IV: Spectroscopic techniques and its applications	**15 Hrs.**
Introduction to UV-VIS Spectroscopy, Derivation of Beer-lamberts Law and Applications and limitations, colorimetric determination of Fe (III) UV-VIS spectroscopy – electronic transitions, shifts-blue and red, Block diagram - brief introduction of components, Applications – purity and differentiation of conjugated and non-conjugated dienes.	2 1 2 1 1
IR Spectroscopy–condition to be IR active, vibrational modes of–AB_2, Block diagram-brief introduction of components, IR spectrum of CO_2 and H_2O molecules, General applications. Fluorescence and its applications in medicine.	2 2 2 2

(Dr. E. Nageswara Rao)

Branch: **Civil Engineering**

Academic Year: **2018-2019**

Subject Code & Name: **CE123 (R18) Programming for Problem Solving**

LESSON PLAN

Year & Semester: B. Tech / I Year II SEM (CE A Section , CE B SECTION & CE C SECTION)

Name of Faculty: Sri. K.Subramanyam /Sri A.Yaswanth kumar / Sri Bh.Krishnamohan

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board (BB) / LCD: PPT	Hours Required Lecture (L) / (T)		(Cumulative Hours)
				L	T	
	Course Objectives and Outcomes					
1	Introduction To Programming	1	BB	1		1
2	Character Set, Identifiers, Keywords, And Data Types	1	BB	1		2
3	Data Types, Constants	1	BB	1		4
4	Operators	1	BB	1		5
5	Conditional Operator And Type Casting	1	BB	1		7
6	Input Output Statements	1	BB	1		9
7	Conditional Statements	1	BB	1		12
8	Control Statements	1	BB	1		13
9	Programs On Iterative Statements	1	BB	1		15
10	Programs On Do-while	1	BB	1		16
11	Programs on Iterative Statements	1	BB	1		17
12	Introduction To Arrays	2	BB	1		19
13	Programs On Arrays	2	BB	1		20
14	Programs On Arrays	2	BB	1		21
15	Programs On Arrays	2	BB	1		22
16	Selection Sort And Linear Search	2	BB	1		24
17	Binary Search And Bubble Sort	2	BB	1		25
18	Character Arrays	2	BB	1		**26**
19	Programs on Strings	2	BB	1		27

(A. Yaswanth Kumar)

Branch: **Civil Engineering** Academic Year: **2018-2019**

Subject Code & Name: **CE123 (R18) Programming for Problem Solving**

20	String Manipulation	2	BB	1		28
21	2d Arrays	2	BB	1		29
22	Matrix Programs	2	BB	1		30
23	Functions	2	BB	1		31
24	Functions	2	BB	1		32
25	Functions	2	BB	1		33
26	Functions	2	BB	1		34
27	String Functions	2	BB	1		35
28	Introduction To Pointers.	2	BB	1		36
29	Pointer Arithmetic And Structures	3	BB	2		37
30	DMA And Recursion.	3	BB	1		38
31	Recursion	3	BB	1		40
32	Recursion	3	BB	1		**41**
33	Structures	3	BB	1		42
34	Programs on Structures	3	BB	1		43
35	Union	4	BB	1		44
36	Programs on unions	4	BB	1		45
37	Storage Classes.	4	BB	1		46
38	Structure Pointers	4	BB	2		48
39	Introduction To Files.	4	BB	1		49
40	File Handling.	4	BB	2		50
41	Command Line Arguments	4	BB	1		51

(A. Yaswanth Kumar)

M. Rama Rao
HOD, CE

LESSON PLAN

CE-124(Basic Mechanical Engineering)(R-18)

M.Vijaya (Mechanical Department)

UNIT- I

TOPIC	NO.OF PERIODS
Introduction: The to Basic mechanical Engineering	1
Function of Belt drive, velocity ratios,	1
slip ,creep in belts	1
length of belt- Open, Crossed belt drive	1
Ratio of tensions in a belt, , maximum power transmitted by belt drive	1
Basic simple problems	1
Advantages of Gear drive over Belt drive, Types of Gears, Spur, Helical, Bevel, Worm and Worm gear	1
Nomenclature of Spur gears	1
Simple and Compound Gear trains	1
Basic simple Problems	1
UNIT-II	
Basic Concepts	1
Equilibrium, Zeroth Law and First Law Of thermodynamics definitions	1
Steady flow processes and applications	1
2nd Law statements and Carnot's cycle	1
concept of entropy	1
Classification of I.C. Engines	1
Working principles of Two Stroke SI and CI engine	1
Working principles of Four stroke SI and CI engine	1
Differences in SI and CI engines and their Governing laws	1
Applications, heat exchangers	1

UNIT-III	
Working of Babcock-Wilcox water tube boiler	1
Working of Cochran Fire tube boiler	1
Differences between Fire tube and Water tube boiler	1
Differences between Impulse and Reaction Steam Turbines	1
Basic modes of heat transfer	1
Types, LMTD	1
UNIT-IV	
Need for refrigeration, types, C.O.P	1
Vapour compression refrigeration	1
Introduction of Air conditioning Systems	1
Need for control of environment	1
summer and winter air conditioning systems	1
Components in air conditioning system	1
Variable refrigerant flow	1
Solar energy; Wind energy	1
Ocean Thermal Energy; GEO-Thermal Energy	1
Solar Power plant, Thermal Power Plant	1

M. Vijaya (M. VIJAYA)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year:2018-2019
Year & semester:I st YEAR, IISEMESTER
Branch: Civil Engineering
Subject code & Name: CE125 ENGINEERING MECHANICS
Name of faculty: N.Tejaswini

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	Concurrent Forces in a Plane : Principles of statics	Apply principles of statics and solve problems involving concurrent forces in a plane	BB	2		2
	Rectangular components of a force	Apply principles of statics and solve problems involving concurrent forces in a plane	BB	2		4
	Resultant and equilibrium of concurrent forces in a plane	Apply principles of statics and solve problems involving concurrent forces in a plane	BB	2		6
	Method of projections.	Apply principles of statics and solve problems involving concurrent forces in a plane	BB	2		8
	Parallel Forces in a Plane : Moment of a force about a point, Couple, Resultant and equilibrium of parallel forces in a plane	solve problems involving parallel forces and general case of forces in a plane	BB	2		10
	Centre of parallel forces and centre of gravity	Locate Centroid of parallel forces	BB	2		12
	Centroids of composite plane figures	Locate Centroid of composite figures	BB	2		14
	Centroids of curves, Numerical problems	Locate Centroid of curves	BB	2		16
2	Resultant and equilibrium of general case of parallel forces in a plane.	Determine the axial forces in the members of determinate truss	BB	2		18
	Statically determinate plane trusses- Method of joints	Determine the axial forces in the members of determinate truss	BB	2		20
	Statically determinate plane trusses - Method of sections	Determine the axial forces in the members of determinate truss	BB	2		22
	Friction: Definition of friction,	Analyze the systems with friction.	BB	2		24

	static friction, dynamics friction, coefficient of friction, angle of friction, angle of repose.					
	Wedge friction, simple friction problems based on sliding of block on horizontal and inclined plane and wedge friction	Analyze the systems with friction.	BB	2		26
	Ladder and rope friction, simple problems on ladder and rope friction.	Analyze the systems with friction.	BB	2		28
3	Force Systems in Space (using vector notation): Position vector, Unit vector, Force vector, Component of a force about an axis, Moment of a force about a point, Moment of a force about an axis,Couple	Determine forces in space using equilibrium equations	BB	2		30
	Resultant and equilibrium of concurrent forces in space, Resultant and equilibrium of parallel forces in space	Determine forces in space using equilibrium equations	BB	2		32
	Centre of parallel forces and centre of gravity	Determine forces in space using equilibrium equations	BB	2		34
	Principle of virtual work: Equilibrium of ideal systems, Stable and Unstable equilibrium.	Calculate unknown forces using virtual work equation	BB	2		36
	Numerical problems on virtual work.	Calculate unknown forces using virtual work equation	BB	2		38
	Numerical problems on virtual work.	Calculate unknown forces using virtual work equation	BB	2		40
4	Moment of inertia of a plane figure with respect to an axis in its Plane, numerical examples	Locate Centroid of composite figures and determine moment of inertia of material bodies, plane figures	BB	2		42
	Moment of Inertia with respect to an axis perpendicular to the plane of	Locate Centroid of composite figures and determine moment of	BB	2		44

	the figure,numerical examples	inertia of material bodies, plane figures				
	Parallel axis theorem, numerical examples	Locate Centroid of composite figures and determine moment of inertia of material bodies, plane figures	BB	2		46
	Moment of inertia of a rigid body , numerical examples	locate centroid of composite figures and determine moment of inertia of rigid bodies	BB	2		48
	Moment of inertia of a lamina; numerical examples	Locate Centroid of composite figures and determine moment of inertia	BB	2		50
	Moments of inertia of three-dimensional bodies, numerical examples	Locate Centroid of composite figures and determine moment of inertia	BB	2		52

N. Tejaswini

(NANDIPATI. TEJASWINI)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2019-2020
Year & semester: II B.Tech & I Semester
Branch: Civil Engineering
Subject code & name: CE211 &Surveying
Name of faculty: P. Srilakshmi

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
	Introduction to syllabus		BB	1		1
1.	**Surveying & Measurements** Basic Definitions; Classification	Awareness of various definitions used in surveying and classification	BB	2		3
	Principles of Surveying; Basic measurements in surveying; Instruments used for different measurements;	Knowledge about various measurements and Instruments	BB	1		4
	Types of errors and sources of errors		BB	1		5
	Methods of distance measurement; Procedures for distance measurement- Ranging, Chaining/taping a line, tapes corrections.	Knowledge for conducting survey	BB	2		7
	Chain Surveying Principle of Chain surveying; Basic definitions; Well-Conditioned & Ill-Conditioned triangles	Various defnitions	BB	1		8
	Selection of stations and survey lines; Offsets	Knowledge of various procedures in chain surveying	BB	2		10
	Compass Surveying Angles and Bearings; Instruments used to measure angles and bearings; Designation of Bearings	Knowledge on directions and bearings	BB	1		11

	Traverse Survey; Types of traverse; Fore and Back Bearings	Applications on how angles computed from bearings	LCD	1		12
	Calculation of Included Angles from Bearings and Bearings from Included Angles		BB	2		14
	Prismatic & Surveyor's Compass;	Knowledge on compass instruments	LCD	2		16
	Magnetic Dip & Declination;		BB	1		17
	Local Attraction and Corrections	Knowledge on compass traversing	BB	2		19
2.	**Simple Leveling** Basic definitions; Curvature and refraction;	Knowledge on leveling	LCD	2		21
	Different methods of leveling; types of level-Auto level; leveling staff		LCD	1		22
	Level field book; Booking and reducing levels;		BB	2		24
	Classification of direct differential leveling methods – Fly leveling, check leveling, profile leveling and cross sectioning, reciprocal leveling and precise leveling	Knowledge on various methods in levelling	LCD	1		25
	Contouring: contour interval; Characteristics of contours: Uses of contour maps.	Knowledge on contouring and various methods of it.	BB	2		27
	Computation of Areas Introduction; Simpson's rule	Gains enough knowledge about land survey.	BB	1		28
	Boundaries with offsets at irregular intervals		BB	1		29
	Coordinate method		BB	2	1	31
	Area of cross sections – level section and two level section	To know how to calculate areas on maps	BB	2		33
	Computation of volumes Trapezoidal rule, Prismoidal formula.	Gains enough knowledge about land survey.	BB	1		34
	Volume from spot levels	To know how to calculate volumes on maps	BB	2		36
	Capacity of a reservoir		BB	1	1	37

3.	**Theodolite Surveying** Types of Theodolites; Vernier Theodolite – Essential parts;	Knowledge on vernier theodolite	LCD	2		39
	Basic definitions; Fundamental lines and relations; Temporary adjustments	Knowledge about operations done using theodolite	BB	2		41
	Field operations – Measurement of horizontal angles (Repetition & Reiteration), vertical angles, direct angles, deflection angles, bearings.	Knowledge about operations done using theodolite	BB	3		44
	Tacheometric Surveying Advantages of tachometric surveying; Basic systems of tachometric measurements	Gains enough knowledge about tachometric survey	BB	1		45
	Principle of stadia measurements		BB	1		46
	Determination of constants K and C		BB	1		47
	Inclined sight with staff vertical; Inclined sight with staff normal to the line of sight	Knows about the elevations and distances	BB	2		49
	Uses of Tacheometry	Knows about the working of instrument	BB	2		51
4.	**Curves Ranging** Circular curves - Basic definitions; Designation of a curve	To design and layout curves for a roads and railways.	BB	2		53
	Relationship between radius and degree of curve; Elements of a simple circular curve	To know how to locate curve for a roads and railways.	BB	1		54
	Location of the tangent points; selection of peg interval		BB	1		55
	Methods of setting out		BB	2	1	57
	Problems in setting out curves		BB	2		59
	Compound and Reverse curves		BB	2		61

	Modern Systems in Surveying Electronic Distance Measurements - Basic definitions	To know about the latest Surveying Instruments	BB/LCD	2		63
	Distance from measurement of transit time		BB/LCD	1		64
	Infrared EDM instruments, Microwave EDM instruments	To know about the latest type of Surveying Instruments	BB/LCD	1		65
	Digital theodolite		BB/LCD	2		67
	Digital Level, Global Positioning System, Total Station	To know how to operate the Surveying Instruments	BB/LCD	1		68

P. Sri Lakshmi (P. Srilakshmi)

M. Rama Rao
HOD, CE

LESSON PLAN

Academic year: 2019-20
Year & Semester: II Year II Semester
Branch: Civil Engineering
Subject code &Name: **CE 212 SOLID MECHANICS -1**
Name of faculty: Dr. B. Kesava Rao

UnitNo.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	**Stress**					
	Introduction; Method of sections; Definition of stress	Understand the importance of method of sections in analysis	BB/ LCD	1		1
	Normal stresses in axially loaded bars	Understand the behaviour of axially loaded bars	BB/ LCD	2	1	4
	Shear stresses; Analysis for normal and shear stresses	Understand the importance of shear stress and solving related problems	BB/ LCD	1	2	7
	Stresses on inclined sections in axially loaded bars	Understand the behaviour of stresses on inclined sections	BB/ LCD	1	1	9
	Allowable stress and factor of safety	Understand the importance of allowable stress and factor of safety in materials	BB/ LCD	1		10
1	**Strain**					
	Introduction; Normal strain	Understand the importance of strain	BB/ LCD	1		11
	Stress-strain diagrams; Hooke's law	Acquires knowledge aboutthe mild steelunder tensile test	BB/ LCD	1		12
	Deformation of axially loaded bars	Understand the strain behaviour in materials	BB/ LCD	1	1	14
	Thermal strain deformation	Determine the influence of thermal strain in materials	BB/ LCD	1	1	16
	Statically indeterminate axially loaded bars	Determine the stress and strain in statically indeterminate axially loaded bars	BB/ LCD	1	1	18
	Shear strain; Hooke's law for shear stress and shear strain	Determine the relationship between shear stress and shear strain	BB/ LCD	1	1	20

1	**Generalized Hooke's law and pressure vessels**					
	Poisson's ratio; Generalized Hooke's law for isotropic materials	Understand the importance of strain in lateral and longitudinal direction for isotropic materials	BB/ LCD	1		21
	Relationship between modulus of elasticity and modulus of rigidity; Dilatation and bulk modulus	Determine the relationship between modulus of elasticity and modulus of rigidity also relation between volumetric strain and bulk modulus	BB/ LCD	1	1	23
	Thin walled pressure vessels-Cylindrical and spherical vessels	Determine the stresses developed in thin walled spherical and cylindrical vessels	BB/ LCD	2	1	26
2	**Internal forces in beams**					
	Introduction; Diagrammatic conventions for supports and loads	Understand the basic sign conventions provided for the calculation of shear force and bending moments	BB/ LCD	1		27
	Calculation of beam reactions	Determine the reactions of a beams using equilibrium equations	BB/ LCD	1		28
	Application of method of sections; shear forces in beams	Determine the shear forces values using the method of sections concept	BB/LCD	1		29
	Bending moment in beams	Determine the bending moment values using the method of sections concept	BB/LCD	1		30
	Shear force and bending moment diagrams; Differential equations of equilibrium for a beam element	Determine the relationship load, shear fore and bending moment also draw shear force and bending moment diagrams	BB/LCD	1	2	33

3	**Normal stresses in beams**					
	Introduction and Basic assumptions	Understand the importance of assumptions made in flexural beams	BB/LCD	1		34
	The elastic flexure formula Application of flexure formula	Determination of flexural parameters for beams and the application of formula	BB/LCD	1	2	37
	Un-symmetric bending — Bending about both principal axes of a beam with symmetric cross section	Determination of flexural parameters for beams and the application of formula	BB/LCD	1	1	39
4	**Shear Stresses in beams**					
	Introduction; Shear flow	Understand the shear flow in beams	BB/LCD	1		40
	Shear stress formula for beams	Understand the derivation of shear stress and Determine the shear stresses in beams	BB/LCD	1	1	42
	Shera stress in beam flanges	Determine the shear stresses in different cross sections	BB/LCD	1	1	44
	Shear center	Understand the importance of shear center	BB/LCD	1		45
4	**Torsion**					
	Introduction; Applications of the method of sections	Understand the behaviour material under torque force	BB/LCD	1		46
	Torsion of circular elastic bars— Basic assumptions	Determine the maximum torque developed in the beam	BB/LCD	1		47
	Torsion formula; Power transmission by circular shafts	Understand the parameters developed in torsion equation and determine the power transmitted by the circular shafts	BB/LCD	1	2	50

B Kesava C

(Dr. B. KESAVA RAO)

M. Rama Rao

HOD, CE

LESSON PLAN

Academic year: 2019-20
Year & semester: **II year I semester (R-18)**
Branch: Civil Engineering
Subject code & name: **Fluid Mechanics, CE 213**
Name of faculty: Dr. A.Srinivasa Prasad, Mr. K.Leela Krishna, Mrs.U.Pallavi

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
I	Dimensions and Units	Understanding properties of fluids	BB	1		1
	Density, specific weight, specific volume & specific gravity		BB	1	1	3
	Viscosity, surface tension, capillarity and vapor pressure		BB	1	1	5
	Variation of static pressure	Determination of hydro static forces	LCD	1		6
	Absolute and gauge pressure		BB	1		7
	Pressure measurement by manometers		BB	1	1	9
	Pressure on plane surfaces and curved surfaces		BB	1	1	11
	Buoyancy	Principle of Buoyancy and its applications	LCD	1		12
	Stability of submerged and floating bodies		BB	1	1	14
	Meta center and metacentric height		BB	1	1	16
II	Classification of flows	Derivation of equation for conservation of mass and its applications	LCD	1		17
	Stream line , streak line , path line and stream tube		BB	1		18
	Equation for acceleration		BB	1	1	20
	Continuity equation		BB	1		21
	Velocity potential and stream		BB	1	1	23

	function					
	Euler's equation of motion	Derivation of basic equation of conservation of energy and momentum and their applications	BB	1		24
	Bernoulli's equation, energy correction factor		BB	1	1	26
	Momentum principle and its application		BB	1	1	28
	Force exerted on pipe bend		LCD	1	1	30
III	Discharge through Venturimeter		BB	1		31
	Discharge through orifice meter		BB	1	1	32
	Flow nozzle, Measurement of velocity by pitot tube		BB	1		33
	Flow through orifice	Determination of discharge through orifices and mouth pieces	LCD	1		34
	Coefficients of orifice		BB	1	1	36
	Flow through large rectangular orifice and submerged orifice		BB	1		37
	Classification of mouth pieces		BB	1		38
	Flow through external and internal mouth pieces		LCD	1		39
	Flow through rectangular, triangular and trapezoidal notches and weirs	Determination of discharge over notches and weirs	LCD	1	1	41
	End contractions, velocity of approach and broad crested weir		BB	1		42
IV	Darcy's equation	Analysis of pipe flow problems	BB	1		43
	Minor losses through pipe flow		LCD	1		44
	Pipes in parallel, series and branched pipes		BB	1		45
	Total energy line and hydraulic gradient line		LCD	1	1	47
	Power transmission through a pipe, siphon and water hammer		BB	1		48

	Reynold's experiment	Analysis of laminar and turbulent flows	LCD	1		49
	Steady laminar flow through a circular pipe		BB	1		50
	Hydro dynamically smooth and rough pipes		LCD	1		51
	Velocity distribution		BB	1		52
	Variation of friction factor with Reynold's number and Moody's chart		BB	1		53

(A. Srinivasa Prasad)

M. Rama Rao.
HOD, CE

LESSON PLAN

Academic year: :2019-20
Year & semester: :II Year, III Sem.
Branch : CIVIL (A,B & C Sections)
Subject code & name: : CE214, Engineering Geology
Name of faculty : Dr.P.Ch.SANJEEVA RAO

Unit Covered	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	Introduction, Objectives And Out Comes Of The Course	Awareness and out come of the course	BB	1	0	1
1	Branches Of Geology	Learn list of branches of Geology	BB	1	0	2
1	Geological Agents- Exogenous And Endogenous. Aggradation-Degradation- Agradation.	Role of Geological agnts in shaping the earth	BB	1	0	3
1	Physical Weathering- Exfoliation And Spheroidal Weathering.	Learn about the process and impact of weathering	BB	1	0	4
1	Chemical Weathering- Examples	Learn about the process and impact of weathering	BB	1	0	5
1	Weathering- Recognition, Resistance And Engineering Considerations	Learn about the process and impact of weathering	BB	1	0	6
1	River Valley Development, Erosion-Hydraulic Action	Process and impact of Erosion on earth	BB	1	0	7
1	Abration , Attrition And Solution-Erosion By Stream	Process and impact of Erosion on earth	BB	1	0	8
	Adjusted to 204. Reason :	Process and impact of Erosion on earth	BB	1	0	9
1	Erosion By Wind And Glaciers	Process and impact of Erosion on earth	BB	1	0	10
1	Review Of Chapter One. Questions And Answers	Comprehension	BB	1	0	11

2	Physical Properties Of Minerals- Habit	Properties of minerals	LCD	1	0	12
2	Physical Properties- Color And Streak	Identification of minerals and significance	LCD	1	0	13
2	Physical Properties Of Minerals- Luster	Identification of minerals and significance	LCD	1	0	14
2	Mineral Properties- Cleavage , Fracture	Identification of minerals and significance	LCD	1	0	15
2	Properties Of Minerals :;hardness	Identification of minerals and significance	LCD	1	0	16
2	Identification Of Minerals - Study Of Minerals As Per Syllabus	Identification of minerals and significance	LCD	1	0	17
2	Rock Cycle And Its Importance	Know about the gensis of rocks	LCD	1	0	18
2	Introduction To Classification Of Rocks	Classification of rocks	BB	1	0	19
2	Classification Of Sedimentary Rocks	Classification, properties and uses of rocks	LCD	1	0	20
2	Forms Of Igneous Rocks	Classification, properties and uses of rocks	LCD	1	0	21
2	Primary Structures In Igneous Rocks	Classification, properties and uses of rocks	LCD	1	0	22
2	Textures In Igneous Rocks- Uses	Classification, properties and uses of rocks	LCD	1	0	23
2	Formation Of Sedimentary Rocks	Classification, properties and uses of rocks	LCD	1	0	24
3	Structures And Texture Of Sedimentary Rocks	Classification, properties and uses of rocks	LCD	1	0	25
3	Structure And Textures In Metamorphic Rocks. Introduction To Secondary Structures.	Classification, properties and uses of rocks	LCD	1	0	26
3	Strike And Dip. Parts Of Fold.	Know about the secondary structures	BB	1	0	27
3	Classification Of Folds	Folds and their importance	LCD	1	0	28
3	Origin of structures	Origin of structures and importance	LCD	1	0	29
3	Faults And Their Classification	Faults and their role on the structures	LCD	1	0	30
3	Joints And Unconformities- Types And Classification	Importance of secondary structures	LCD	1	0	31
3	Importance Of Folds And Faults	Importance of secondary structures	BB	1	0	32
4	Introduction To Earthquakes	Causes and effects of earthquakes	LCD	1	0	33
4	Earthquakes Causes And Effects.	Causes and effects of earthquakes	LCD	1	0	34
4	Engineering Considerations Of	Importance of Earthquakes	BB	1	0	35

	Earthquakes					
4	Causes, Effects And Control Of Landslides	Land slide s causes and controls	BB	1	0	36
4	Electrical Resistivity Method- Principle And Its Applications	Geophysical explaration of sub surface methods	BB	2	0	37
4	Seismic Refraction Method Of Exploration. Geological Consideration In The Selection Of Dam Site.	Geological considerations in Dam construction	BB	1	0	39
4	Effects On Ground, Geological Considerations Of Tunneling	Geological considerations in tunneling	BB	2	0	41
4	Improvements In Properties Of Rock Masses- Grouting And Rock Bolting	Learn about site improvement techniques	BB	2	0	44

P.Ch. Sanjeevarao
(Dr. P.CH. SANJEEVARAO)

M-Rama Rao
HOD, CE

CE215 & BUILDING MATERIALS AND CONSTRUCTION

LESSON PLAN

Academic year: 2019 - 20020
Year & semester: II/IV B.Tech & Ist SEMESTER
Branch: CIVIL Engg
Subject code & name: CE215 & BUILDING MATERIALS AND CONSTRUCTION
Name of faculty: Sri.B.Krishna Chaitanaya, Sri. K.Anjaneyulu & Sri.G.Sanijya

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
UNIT-I	**CLAY BRICKS**					
	Brick clay ,preparation of bricks	Studies various features & specifications about bricks	BB/LCD	4		4
	Types of bricks ,dimensions of bricks		BB/LCD	1		5
	Weight of bricks ,storing of bricks		BB/LCD	2		7
	Bricks substitutes,classification of bricks,tets for bricks.		BB/LCD	3		10
	TIMBER					
	Classification of trees,structure of wood	Studies various features & specifications about TIMBER	BB/LCD	2		12
	Seasoning of timber,conversion of timber ,market forms of timber		BB/LCD	5		17
	Defects of timber,treatment of		BB/LCD	3		20
	Timber,classification of timber		BB/LCD	1		21
	GLASS	Studies various features & specifications about GLASS				
	Manufacturing,		BB/LCD	2		23
	Classification,testing for quality		BB/LCD	3		26
	Uses of glass		BB/LCD	2		28
	PLASTICS					
	Classification of plastics,properties of plastic	Studies various features & specifications about PLASTICS	BB/LCD	2		30
	Fabrication of plastics		BB/LCD	2		31
	Some plastics common in use		BB/LCD	2		33
	Reinforced platics		BB/LCD	1		34

UNIT-II	**PAINTS**					
	Types of paints,composition of paints	Studies various features & specifications about PAINTS	BB/LCD	2		36
	Consideration in chosing paints ,paints commonly used in building		BB/LCD	2		38
	Damp proofing & water proofing & uses		BB/LCD	2		40
UNIT-III	**BRICK MASONARY**					
	Terms used in brick masonary ,	Studies various features & specifications about Brick masonary	BB/LCD	2		42
	Mortar used in brick masonary		BB/LCD	2		44
	Bondings ,methods of brick laying		BB/LCD	2		46
	PLASTERINGS					
	Plastering methods ,specificationswith cement mortar	Studies various features & specifications about plastering	BB/LCD	2		48
	STAIR CASES					
	STAIRS-Terminology used ,types ,recommendations	Studies various features & specifications about staircases	BB/LCD	3		51
	ACOUSTICS					
	Revebration,echo sound isolation,recommendations for different types	Studies various features & specifications about acoustics	BB/LCD	2		53
UNIT - IV	**Building components**	Studies various features & specifications about building components				
	Lintels,arches different types of floors,roofs		BB/LCD	2		55
	Shoring ,underpinning ,scaffolding & formwork					
	Shoring ,types,underpinning,types	Studies various features & specifications about construction materials	BB/LCD	2		57
	Scaffolding ,types,formwork requirmnets		BB/LCD	1		59

B. Krishna Chaitanya

(B. Krishna Chaitanya)

M. Rama Rao
HOD, CE

SE 511 THEORY OF ELASTICITY AND PLASTICITY

LESSON PLAN

Academic Year : **2018-19**
Year & semester : **1st Year & First Semester**
Branch : **M.Tech., Structural Engineering**
Subject code and name : **SE 511 THEORY OF ELASTICITY AND PLASTICITY**
Name of faculty : **M.L.N. Krishna Sai.**

Unit No.	Topic of syllabus to be covered	Teaching Mode: BB/OHP/LCD	Number of hours
1	Introduction, Syllabus Explanation, Text books	BB/LCD	1
1	Components of stress	BB/LCD	2
1	Principal stresses	BB/LCD	2
1	Stress ellipsoid	BB	1
1	Determination of principal stresses; Stress invariants	BB	2
1	Determination of maximum shear stresses; Octahedral shear stress	BB	2
1	strain at a point – Components of strain	BB	1

1	Differential equations of equilibrium	BB	2
1	Conditions of compatibility	BB	2
1	Generalised Hooke's law	BB	1
2	Plane stress ; Plane strain	BB/LCD	2
2	Differential equations of equilibrium; Boundary conditions	BB/LCD	2
2	Compatibility equations	BB/LCD	2
2	Stress function	BB	1
2	Governing differential equation; Solution by polynomials	BB	2
2	End effects – Saint-Venant's Principle	BB	1
2	Bending of a cantilever loaded at the end	BB	1
2	Bending of a beam by uniform load	BB/LCD	1
3	General equations in polar coordinates; Stress distribution symmetrical about an axis	BB/LCD	2
3	Effect of circular holes on stress distribution in plates	BB/LCD	2
3	Concentrated force at a point of a straight boundary	BB	2
3	Concentrated force acting on a beam	BB	2

3	Stresses in a circular disc	BB	2
4	Torsion of straight bars – Saint Venant's theory	BB	1
4	Torsion of Elliptic cross section	BB	2
4	Membrane analogy	BB/LCD	2
4	Torsion of a bar of narrow rectangular cross-section	BB/LCD	2
4	Torsion of rolled profile sections, Torsion of thin tubes	BB/LCD	2
5	Yield criteria – Introduction,	BB	1
5	The Tresca yield criterion, The von Mises yield criterion;	BB	2
5	Plastic potential and Plastic flow	BB	2
5	Levy-Mises equations,	BB/LCD	2
5	Prandtl-Reuss equations	BB/LCD	2
	Total Number of periods		**56**

(MLN. Krishna Sai)

M. Rama Rao
HOD, CE

SE 522 Stability of Steel Structures

LESSON PLAN

NAME OF THE FACULTY: DR. K.S. SAI RAM

Unit No.	Chapter Name	Topic	Number of hours
I	Buckling of columns and frames	Introduction; Euler's column formula	1
		Alternate form of the differential equation for determining critical loads;	4
		The use of beam-column theory in calculating the critical loads;	2
		Buckling of frames	1
		The energy method	1
		Buckling of a bar under distributed axial load	2
		Buckling of bars with sudden change in cross section	2
		Inelastic buckling of bars	1
II	Torsional buckling	Pure torsion of thin-walled bars of open cross section	1
		Non-uniform torsion of thin-walled bars of open cross section	2
		Torsional buckling under axial loading	2
		Combined flexural and torsional buckling.	2
III	Lateral Buckling of Beams	Differential equations for lateral buckling	1
		Lateral buckling of beams in pure bending	2
		Lateral buckling of cantilever beams of narrow rectangular and I sections subjected to concentrated load	2
		Lateral buckling of simply supported beams of narrow rectangular and I sections subjected to concentrated load	2

SE 523 THEORY OF PLATES AND SHELLS

LESSON PLAN

Academic Year : **2018-19**

Year & semester : **1st Year & Second Semester**

Branch : **M.Tech., Structural Engineering**

Subject code and name : **SE 523 THEORY OF PLATES AND SHELLS**

Name of faculty : **M.L.N. Krishna Sai.**

Unit No.	Topic of syllabus to be covered	Teaching Mode: BB/OHP/LCD	Number of hours
I	Introduction, Syllabus explanation, Text books	BB/LCD	1
I	Differential equation for cylindrical bending of plates	BB	3
I	Slope and curvature of slightly bent plates	BB	1
I	Relations between bending moments and curvature in pure bending of plates;	BB	2
I	Particular cases of pure bending	BB	2
I	Strain energy in pure bending of plates	BB	1

1	Limitation on the application of the derived Formulae	BB	1
2	Differential equation for symmetrical bending of laterally loaded circular plates	BB	2
2	Slope and deflection of uniformly loaded circular plates	BB	1
2	Circular plate with clamped edges	BB	2
3	Differential equation of the deflection surface	BB	2
3	Boundary conditions,	BB	1
3	Simply supported rectangular plates under sinusoidal load	BB	1
3	Navier's solution for simply supported rectangular plates;	BB	1
3	Levy's solution for simply supported and uniformly loaded rectangular plates	BB	1
4	Parametric representation of a surface; The first quadratic form;	BB	2
4	Equation to the normal of a surface; The second quadratic form;	BB/LCD	2
4	Principal curvatures, Gauss curvature, and lines of curvature;	BB/LCD	1
4	Surfaces of revolution Some definitions; Classification of shell surfaces	BB/LCD	2
4	Thin shells; Parts of a cylindrical shell, Loads; Notes on the membrane theory	BB	2
4	Equations of equilibrium	BB	2
4	Stresses in simply supported cylindrical shell; Value of K for dead load	BB	2

4	Cylindrical shell with circular directrix	BB	1
4	Some comments on the membrane theory	BB	2
4	The need for a bending theory	BB/LCD	2
4	Stress analysis of cylindrical shells	BB/LCD	2
4	Expressions for strain and change in curvature – Strains in a circular cylindrical shell, Rotation of the tangent , Change in circumferential curvature	BB/LCD	2
5	Stress-strain relations, Moment- curvature relation,	BB	1
5	Membrane displacements due to dead load	BB	2
5	Beam theory of cylindrical shells – Advantages of the beam method, assumption , Range of validity,	BB	2
5	Beam analysis, Arch analysis	BB	2
	Total Number of periods		**51**

(MLN. Krishna Sai)

M. Rama Rao
HOD, CE

LESSON PLAN

RVR & JC/SE 574

Year & Semester: I/II M.Tech, I semester.

Branch: Civil Engineering/M.Tech (Structural Engineering)

Subject Code & Name: SE 574 Fracture Mechanics of Concrete

Name of faculty: N.V.Sairam Kumar.

Unit	Topic of syllabus to be covered	Teaching mode BB/LCD	Total no. of Hours	
			Lecture	Cumulative
I	**Introduction to fracture mechanics of concrete**			
	Structural failure based on material performance;	Lecture/ BB	1	1
	Concepts of linear elastic fracture mechanics;	Lecture/ BB	2	3
	Fracture mechanics of concrete	Lecture/ BB	1	4
II	**Principles of linear elastic fracture mechanics**			
	Airy stress functions for problems in elasticity; Complex stress function	Lecture/ BB	2	6
	Elastic stress and displacement fields at crack tip;	Lecture/ BB	1	7
	Stress intensity factors and crack opening displacements for useful geometries;	Lecture/ BB	2	9
	Superposition of stress intensity factors;		1	10
	Plastic zone at crack tip; Griffith's fracture theory;	Lecture/ BB	1	11

	Strain energy release rate for crack propagation;	Lecture/ BB	1	12
	Relationship between stress intensity factor and strain energy release rate;	Lecture/ BB	1	13
	Design based on linear elastic fracture mechanics	Lecture/ BB	1	14
III	**Principles of non-linear fracture mechanics**			
	Energy principles for crack propagation in non-linear materials;	Lecture/ BB	1	15
	J-integral for non-linear elastic materials;	Lecture/ BB	2	17
	Fracture resistance (R curve);	Lecture/ BB	2	19
	Crack tip opening displacement;	Lecture/ BB	1	20
IV	**Structure and fracture process of concrete**			
	Constituents and microstructure of concrete;	Lecture/ BB	1	21
	Fracture behaviour and strain localization of concrete;	Lecture/ BB	1	22
	Fracture process zone and toughening mechanisms;	Lecture/ BB	2	24
	Experimental determination of fracture zone;	Lecture/ BB	2	26
	Influence of fracture process zone on fracture behaviour of concrete	Lecture/ BB	2	28

V	**Non-linear fracture mechanics for Mode I Quasi-Brittle Fracture**			
	General description of quasi-brittle fracture; Fictitious approach – Energy dissipation for fictitious crack,	Lecture/ BB	1	29
	Fictitious crack model by Bazant and Oh,	Lecture/ BB	2	31
	Determination and influence of σ (w) relationship, Some comments on fictitious crack approach;	Lecture/ BB	2	33
	Effective elastic approach – Energy dissipation for effective-elastic crack, Two- parameter fracture model by Jenq and shah, Size effect model by Bazant and Kazemi	Lecture/ BB	2	35
	Effective crack model by Karihaloo and Nallathambi, Effective crack model by Refai and Swartz,	Lecture/ BB	2	37
	Some comments on effective-elastic crack approach; Comparison between Fictitious and effective-elastic crack approaches;	Lecture/ BB	1	38
	Finite element analysis – Discrete crack approach, Smeared crack approach , Software available	Lecture/ BB	2	40

N.V.S.R.
(Ds. N. Venkata Sai Ram Kumar)

M. RAMA RAO
HOD, CE

LESSON PLAN

RVR & JC/SE 580

Year & Semester: I/II M.Tech, II semester.

Branch: Civil Engineering/M.Tech (Structural Engineering)

Subject Code & Name: SE 580 Earthquake Resistant Design of Structures

Name of faculty: N.V.Sairam Kumar.

Unit	Topic of syllabus to be covered	Teaching mode BB/LCD	Hours required	
			Lecture	Cumulative
I	**Design forces for buildings**			
	Introduction; Equivalent static method;	Lecture/ BB	1	1
	Mode superposition technique;	Lecture/ BB	1	2
	Dynamic inelastic-time history analysis;	Lecture/ BB	2	4
	Advantages and disadvantages of analysis methods;	Lecture/ BB	1	5
	Determination of lateral forces as per IS1893(Part 1) – Equivalent static method,	Lecture/ BB	2	7
	Model analysis using response spectrum	Lecture/ BB	1	8
II	**Ductility considerations in earthquake resistant design of RCC buildings**			
	Introduction; Impact of ductility;	Lecture/ BB	1	9

	Requirements for ductility; Assessment of ductility–	Lecture/ BB	2	11
	Member/element ductility, Structural ductility; Factor affecting ductility;	Lecture/ BB	1	12
	Ductility factors; Ductility considerations as per IS13920	Lecture/ BB	2	14
III	**Analysis of a long two-storey , two-bay RCC building**			
	Determination of lateral forces on an intermediate plane frame	Lecture/ BB	1	15
	Equivalent static method and Model analysis using response spectrum;	Lecture/ BB	2	17
	Analysis of the intermediate frame for various load combinations as per IS1893(Part 1);	Lecture/ BB	2	19
	Identification of design forces and moments in the members;	Lecture/ BB	1	20
IV	**Earthquake resistant design of RCC elements**			
	Design and detailing of typical flexural member, typical column, footing.	Lecture/ BB	2	22
	Detailing of a exterior joint as per IS13920.	Lecture/ BB	2	24
V	**Seismic design of Steel Buildings**			
	Behaviour and design of moment resisting frames – Introduction,	Lecture/ BB	1	25
	Analysis and detailing of special moment framesBeam-to-column panel zones,	Lecture/ BB	2	27
	beam design, Beam-to-column connections;	Lecture/ BB	1	28

	Column design;	Lecture/ BB	1	29
	Behaviour and design of concentrically braced frames – Design philosophy,	Lecture/ BB	2	31
	Hysteretic energy dissipation capacity of braces,	Lecture/ BB	1	32
	Design requirements, Bracing connections design requirements,	Lecture/ BB	2	34
	Columns and beams;	Lecture/ BB	1	35
	Behaviour and design of eccentrically braced frames – Introduction,	Lecture/ BB	1	36
	Basic concept and EBF behaviour, Link behaviour,	Lecture/ BB	2	38
	Capacity design of other structural components; design examples	Lecture/ BB	2	40

N.V.S.S.R
(N. Venkata Sai Ram Kumar)

M. Rama Rao
HOD, CE

(SE 582) Ground Improvement Techniques

LESSON PLAN

Academic year: 2019-20
Year & semester: 2019, 1st semester
Branch: Civil Engineering
Subject code & name: SE- 582 Ground Improvement Techniques
Name of faculty: Dr.M.Rama Rao

Unit No.	Topic of syllabus to be covered	Learning outcomes	Teaching mode: BB/OHP/LCD	Hours required		Total hours cumulative
				Theory	Tutorial	
1	Need for Engineered ground,classification of ground modification techniques	Awareness on importance of ground improvement	LCD	1		1
1	Feasibility of ground modification techniques,Objectives of GIT.	Awareness on importance of ground improvement	LCD	2		3
1	Densification of granular soils: Introduction, vibrations at shallow depth	Awareness of soil densification	BB	1		4
1	densification Of Granular Soils:vibration And Impact At Shallow Depth	Knowledge of densification of soil at shallow depths	LCD	2		6
1	Heavy Tamping And Dynamic Compaction	Knowledge of densification of soil at shallow depths	LCD	2		8
1	Vibrofloatation	able to understand the deep compaction technique in loose sand deposits	LCD	1		9
2	Preloading,sand Drains,sand Wicks,stone Columns	Knowledge of preconsolidation along with vertical drains	LCD	2		11
2	Lime Columns	Knowledge of Lime columns in preconsolidation	BB	1		12

2	Reinforced Earth:introduction	Awareness on reinforced earth	LCD	2		14
2	Reinforced Earth retaining wall components,advantages	Understand the components of reinforced earth walls and its advantages	LCD	2		16
2	Permanency-corrosion Of Steel,principles,design Principles Of Reinforced Earth Retaining Walls.	Understand the concept of reinforced earth walls	LCD	2		18
2	Design Principles Of Reinforced Earth Retaining Walls.	Understand the concept of reinforced earth walls	LCD	2		20
2	Internal Stability Check Up	Able to conduct a stability check for design of RERW walls	LCD	2	2	24
3	Geotextiles:introduction,types And Functions Of Geotextiles	Awareness on use of geosyntheitic materials	LCD	2		26
3	Applications Of Geotextiles:filtration And Drainage,testing OfGeotextiles	Knowledge on uses of geotextiles	LCD	2		28
3	Testing Of Geotextiles: In -plane,cross-plane,radiant,gradient Ratio Permeability Tests,puncture Strength;identification Of Geosynthetic Samples	Knowledge on tests conducted on geotextiles	LCD	2		30
3	Geogrids:introduction,types,applications	Knowledge on uses of geogrids and its applications	LCD	2		32
3	Dewatering:introduction,methods-well Points,deepDrainage,vacuum Dewatering	Awareness on ground improvement through dewatering	LCD	2		34
3	Electroosmosis,pressure Relief,pumps,installation	Knowledge of elector osmosis method	LCD	2		36
3	comparative Studies Of Dewatering Systems	Knowledge of dewatering technique	LCD	2		38
3	Grouting : Types, Kinds Of Grouting Materials	able to gain knowledge on ground improvement through grouting	LCD	2		40

4	Stabilization : Introduction, Objectives, Mechanical Stabilization	Awareness on ground improvement through mechanical stabilization	BB	2		42
4	Cement Stabilization:mechanism,factors Affecting	Able to improve stability of clay through cement stabilization	BB	2		44
4	construction Methods	Able to improve stability of clay through cement stabilization	BB	1		45
4	Lime Stabilization:mechanism,lime-soil Reactions,benefits,evaluation Of Lime Reactivity,construction Procedures	Able to improve stability of clay through lime stabilization, understanding the reactions involved in it	BB	2		47
4	Bituminous Stabilization: Introduction,factors Affecting,construction Procedures.	Able to improve stability of clay through bitumen stabilization	BB	2		49

M. Rama Rao.

M. Rama Rao
HOD, CE

SE 583 Advanced Design of Steel Structures

LESSON PLAN

NAME OF THE FACULTY: DR. K.S. SAI RAM

Unit No.	Chapter Name	Topic	Number of hours
I	Wind loads on buildings	Wind load on pitched roofs	3
		Wind loads on walls of rectangular clad building	1
		Example	2
II	Analysis and design of gable frames	Loads on gable frame	1
		Elastic analysis	2
		Limit state design	4
		Plastic analysis and design	2
III	Low-rise multi-storey buildings	Design of composite beam	2
		Design of column	2
		Design of brace	2
IV	Design of light-gauge steel structures	Introduction ; Types of sections	1
		Behaviour of light-gauge section	1
		Design of compression members	2
		Design of beams	2
		Design of beam-columns	2
V	Design of bridges	Various types of steel bridges	1
		Design of railway plate girder bridge	6
Total number of hours			36

M. Rama Rao
HOD, CE

LESSON PLAN

RVR & JC/SE 586

Year & Semester: I/II M.Tech, II semester.

Branch: Civil Engineering/M.Tech (Structural Engineering)

Subject Code & Name: SE 586 Repair and Rehabilitation of Structures

Name of faculty: N.V.Sairam Kumar.

Unit	Topic of syllabus to be covered	Teaching mode BB/LCD	Hours required	
			Lecture	Cumulative
1	**Durability and deterioration of structures**	Lecture/ BB	1	1
	Physical causes: Introduction, Durability of concrete, Causes of distress in concrete structures, shrinkage in concrete,	Lecture/ BB	1	2
	Freeze and thaw on concrete, weathering on concrete, creep on concrete	Lecture/ BB	1	3
	Abrasion, Erosion and cavitations on concrete, Temperature changes, Construction errors, Accidental loadings, Design errors.	Lecture/ BB	1	4
	Chemical causes: Chemical attack on concrete, Carbonation attack on concrete, Sulfate attack on concrete, Physical and chemical mechanisms,	Lecture/ BB	1	5
	Acid attack on the concrete, Alkali reaction on the concrete, Aggregate reaction and alkali silica reaction, Chloride attack on the concrete.	Lecture/ BB	1	6

	Corrosion: Basic principle of corrosion, Corrosion mechanisms of embedded metal, Corrosion process,	Lecture/ BB	1	7
	Damages due to corrosion, Codal provisions for different exposure conditions,	Lecture/ BB	1	8
	Corrosion protection techniques, Relative symptoms to causes of distress and deterioration.	Lecture/ BB	1	9
II	**Damage assessment**			
	Destructive testing systems: Introduction, Purpose of assessment, Rapid assessment, monitoring, Investigation of damage, observation,	Lecture/ BB	1	10
	Damage assessment procedure, Visual inspection, Testing of hardened concrete.	Lecture/ BB	1	11
	Non – Destructive testing systems: Introduction, NDT methods, Surface hardness method, Ultra pulse velocity method, pulse echo method, radioactive method,	Lecture/ BB	2	13
	Electromagnetic method, Electrical methods, Acoustic emission Techniques, Recent development on NDT instruments.	Lecture/ BB	1	14
	Semi – Destructive testing systems: Penetration techniques, Pullout test & Pull off test, Core sampling and testing, Permeability test,	Lecture/ BB	1	15
	Carbonation pH value test, Chemical Testing of concrete, Diagnostic methods for corrosion damage.	Lecture/ BB	1	16
III	Repair Materials			
	Construction Chemicals: Introduction, Evolution of Portland cement concrete and concrete chemicals, Epoxy, Polymers and Latex, Acrylic Polymer,	Lecture/ BB	1	17

	Polyester Resins, Applications of repair chemicals, Polymer modification on addition of polymer to cement concrete and mortar.	Lecture/ BB	1	18
	Concrete repair chemicals: Bonding coats, Steel corrosion inhibitor paint for steel in reinforced concrete construction, Rust remover paints. Ferro cement, Fibre reinforced concrete, Fibre reinforced polymer, Cementcrete, Geopolymer concrete,	Lecture/ BB	2	20
	Portland pozzolana cement, silica fume concrete, self compacting concrete, Pre-placed aggregate concrete, Shotcrete/ Gunite, High performance concrete.		1	21
	Examples of concrete chemicals for repair: Zentritix KMH (Corrosion protection and bonding coat), Nafufill BB2 (Bonding agent and polymer),	Lecture/ BB	1	22
	Sika latex power (Water resistant bonding agent), Sunepoxy 358 (Epoxy bond coat), New coat (Roof waterproofing coating).	Lecture/ BB	1	23
IV	**Repair and Rehabilitation**			
	Repair of Structural Elements: Repair of RC slabs, Repair of RC beams and columns damaged by steel corrosion,	Lecture/ BB	1	24
	Repair of rising dampness in walls of ground floors in old buildings constructed without DPC, Efflorescence in buildings.	Lecture/ BB	2	26
	Repair of cracks in concrete members: Introduction, Investigations to find cause of cracks, Sealing of cracks by injection and crack filling.	Lecture/ BB	1	27
	Blanketing inactive cracks by using elastic sealants, Repair of crack by stitching, Treatment of active structural cracks.	Lecture/ BB	1	28
	Strengthening Techniques: Introduction, Need for strengthening,	Lecture/	2	30

	Terms of repair, Structural concrete repair. Structural repair techniques for reinforced concrete. Structure concrete strengthening, Jacketing technique, externally bonding technique,	BB		
	externally bonded mild steel plats, strengthening with external reinforcement.	Lecture/ BB	1	31
V	**Seismic Retrofitting of reinforced concrete buildings:**			
	Introduction, Considerations in retrofitting of structures, Source of weakness in RC frame buildings-	Lecture/ BB	1	32
	Structure damage due to discontinuous load path,	Lecture/ BB	1	34
	Structural damage due to lack of deformation, Quality of workmanship and materials,	Lecture/ BB	1	35
	Classification of retrofitting techniques, Retrofitting strategies for RC buildings,	Lecture/ BB	2	37
	Structural level (global) retrofit methods,	Lecture/ BB	2	39
	Member level (local) retrofit methods, Comparative analysis of methods of retrofitting.	Lecture/ BB	1	40

N.V.S.R.
(Dr. N. Venkata Sai Ram Kumar).

M. Rama Rao
HOD, CE

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS-401 DISTRIBUTED SYSTEMS

Lesson Plan

Academic Year	2019 – 20
Year & Semester	IV Year I Semester
Regulation	R-16
Name of Faculty	Dr. M Sreelatha/Sri.P.Venkateswara Rao

Course Objectives:

1. To learn the basic principles and functioning of distributed systems
2. To understand the major technical challenges in distributed systems design and implementation
3. To learn the concepts of communication and naming in distributed systems
4. To understand synchronization, consistency and mobility in distributed systems
5. To know about tolerance, distributed file system and web based paradigms of distributed systems

Course Outcomes:

1. Describe the basic principles of distributed systems.
2. Explain communication models, role of threads and need of code migration in distributed systems.
3. Explain the concepts and implementation of naming system in distributed system.
4. Identify the need for synchronization, consistency models require for distributed systems.
5. Summarize the techniques used for making distributed system fault tolerant.
6. Explain file based and web based paradigms of distributed systems

CO – PO & PSO Mapping Table

	PO1	PO2	PO3	PSO1	PSO3
CO 1	2	2	2	3	2
CO 2	2	3	2	3	2
CO 3	2	3	3	2	
CO 4	2	3	3	3	2
CO 5	2	2	3	3	2
CO 6	2	2	2	3	2

Unit- I

Learning Outcomes

1. Demonstrate knowledge of the basic elements and concepts related to distributed systems. [CO1]
2. Describe the Architecture of Distributed Systems.[CO1]

Topic of syllabus covered	Teaching Mode	Hours Required
Definition of distributed system, Goals	LECTURE	2
Types of distributed systems	LECTURE	1
Architectural Styles, System Architectures	LECTURE	2
Architectures Versus Middleware, Self-Management In Distributed Systems.	LECTURE	3

Unit- II

1. Describe the elements about device and code migration and association problem.[CO2]
2. Differentiate Communication Mechanisms [CO2]

Topic of syllabus covered	Teaching Mode	Hours Required
Threads	LECTURE	2
Virtualization	LECTURE	2
Clients, Servers	LECTURE	2
Code Migration, Fundamentals	LECTURE	2
Remote Procedure Call, Message-Oriented Communication	LECTURE	2
Stream-Oriented Communication	LECTURE	2
Multicast Communication	LECTURE	2

Unit- III

Learning Outcomes

1. Explain the algorithms for solving the problems associated with time. [CO3]
2. Solving the problems associated with naming. [CO3]

Topic of syllabus covered	Teaching Mode	Hours Required
Names, Identifiers, And Addresses	LECTURE	2
Flat Naming, Structured Naming	LECTURE	2
Attribute-Based Naming	LECTURE	3
Clock Synchronization	LECTURE	2
Logical Clocks, Mutual Exclusion	LECTURE	1
Global Positioning Of Nodes, Election Algorithms	LECTURE	2

Unit- IV

Learning Outcomes

1. Demonstrate Consistency models and Algorithms.[CO4]
2. Use communication, recovery and fault tolerance methods in distributed systems. [CO4]

Topic of syllabus covered	Teaching Mode	Hours Required
Introduction, Data-Centric Consistency Models	LECTURE	2
Client-Centric Consistency Models,	LECTURE	3
Replica Management, Consistency Protocols	LECTURE	2
Introduction To Fault Tolerance	LECTURE	1
Process Resilience, Reliable Client-Server Communication	LECTURE	2
Reliable Group Communication, Distributed Commit, Recovery	LECTURE	2

Unit- V

Learning Outcomes

1. Demonstrate the problems associated with Objected bases Distributed Systems.[CO5]
2. Demonstrate the problems associated in Distributed File Systems.[CO5]

Topic of syllabus covered	Teaching Mode	Hours Required
Architecture, Processes, Communication,	LECTURE	2
Naming, Synchronization, Consistency and Replication	LECTURE	3
Fault Tolerance.	LECTURE	1
Architecture, Processes,	LECTURE	1
Communication, Naming	LECTURE	2
Synchronization, Consistency and Replication, Fault Tolerance	LECTURE	2

Signature of the HOD 07/06/19

Signatures of the Teachers

1.

2.

Date:07/06/2019

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
CS- 402 (R -16) J2EE & WEBSERVICES
Lesson Plan – Y16 Batch

Academic Year	2019 - 20
Year & Semester	IV Year First Semester
Regulation	R-16
Name of Faculty	Dr.A.Srinagesh /Sri.N.Hanumantha Rao/Sri.Ch.Ratna Babu

Course Objectives:

1. To learn J2EE Multi-Tier architecture and Server side Scripting with JSP.
2. To understand JSP Tag life – cycle and XML Parsers.
3. To know the Enterprise Java beans life cycles and Java Mail.
4. To use Java RMI, and JIDL with CORBA.
5. To understand Web services and its related technologies.

Course Outcomes :

CO1. Design multi-Tier Architecture and implement web applications using JSP.

CO2. Create Custom - JSP Tag Applications and Back-end XML Data Applications.

CO3. Implement the enterprise applications using EJB Components.

CO4. Design and implement distributed RPCs using middleware components with java mail API

CO5. Publish and consume the web services using SOAP,WSDL and UDDI

CO - PO Mapping Table

	PO1	PO2	PO3	PO4	PO5	PO12
CO 1	2	2	3	3	2	2
CO 2	2	2	3	3	2	2
CO 3	2	2	3	2	3	1
CO 4	2	3	3	2	3	2
CO 5	2	2		2	3	3

Unit- I:

Learning Outcomes:

1. To Understand the J2EE Introduction. **[CO 1]**
2. To describe Multi-Tier Architecture tiers and its components. **[CO 1]**
3. To implement the Server-side applications using JSP Technology. **[CO 1]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Chapter 1 : Multi-Tier Architecture			
Description of Multi-Tier Architecture	Power Point Presentation	1	-
J2EE Clients Classification	Lecture	1	-
Different Tiers and its Components	Lecture	2	-
Chapter 2 : Java Server Pages			
JSP Life Cycle	Power Point Presentation	1	-
JSP Scripting Elements	Power Point Presentation	2	-
JSP Directives	Lecture	2	-
JSP implicit Objects	Lecture	2	1
JSP Actions and implement Java Bean	Lecture	2	-
JSP Cookies and Session objects	Lecture	2	-
	Total Periods:	**15**	

Unit- II :

Learning Outcomes:

1. To Create JSP Custom tags using Tag Extensions. **[CO 2]**
2. To Understand the Java XML Technology. **[CO 2]**
3. To implement the SAX and DOM parser. **[CO 2]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Chapter 3 : JSP Tag Extensions			
JSP Tag API & its Life Cycle Methods	Power Point Presentation	1	1
Types of Custom tags with syntax	Lecture	1	-
Steps To Create JSP Custom Tag	Lecture	1	-
XML Elements of JSP tag library	Lecture	1	-
Chapter 4 : Java and XML			
Basic concepts of Well-formed & Valid - XML	Lecture	1	-
Generating an XML document	Lecture	1	-
Java XML Parsers types	Lecture	1	-
parsing XML - DOM Parser & Implementation	Demonstration	2	1
parsing XML - SAX Parser & Implementation	Demonstration	2	1
Comparisons of the DOM and SAX Parser	Lecture	1	-
	Total Periods:	**15**	

Unit- III:

Learning Outcomes:

1. To implement the enterprise applications using EJB Components. **[CO 3]**
2. To implement the client MUA using Java Mail API. **[CO 3]**
3. To Implement the Java Mail Operations such as Send, Read, Delete E-Mails. **[CO 3]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Chapter 5 : Enterprise JavaBeans			
Types and EJB Overview	Lecture	1	-
Life Cycle of Stateless Session Bean & Implementation	Lecture	2	1
Life Cycle of Stateful Session Bean & Implementation	Demonstration	2	1
Life Cycle of MDB & Its methods	Power Point Presentation	1	-
Life Cycle of Entity Bean & Its methods	Lecture	1	-
Chapter 6: Java Mail API			
Java Mail AP Architecture	Power Point Presentation	1	-
Java Mail Protocols	Lecture	1	-
Java Mail API Packages	Lecture	1	-
Java mail MUA operations:Send,Read,Delete	Lecture	2	1
	Total Periods:	**15**	

Unit- III:

Learning Outcomes:

1. To Implement the Distributed Remote method Invocation Applications using RMI. **[CO 4]**
2. To Use JIDL Technology for creation Namespace service in CORBA. **[CO 4]**
3. To Implement the Distributed Remote method Invocation Applications using CORBA. **[CO 4]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Chapter 7: Java Remote Method Invocation			
RMI Architecture	Lecture	1	-
How To create Stubs and Skelton Using JRMI	Power Point Presentation	2	-
Java RMI API	Lecture	1	-
Steps to design Distributed RMI Application using JRMI	Lecture	2	1
Chapter 8: Java Interface Definition Language and CORBA			
Introduction To CORBA	Lecture	1	-
CORBA Architecture	Power Point Presentation	1	-
JIDL Description	Lecture	1	-
JIDL Mapping with Java	Lecture	2	-
Steps to design Distributed CORBA Application using JIDL	Lecture	2	1
	Total Periods:	**15**	

Unit- V:

Learning Outcomes:

1. To Learn basic web services types and architecture **[CO 5]**
2. To publish or describe the web service using WSDL. **[CO 5]**
3. To manage the web service using UDDI. **[CO 5]**
4. To consume the web service using SOAP. **[CO 5]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Chapter 9: WEBSERVICES			
Introduction to Web services	Lecture	1	-
Types of Web serves Overview	Lecture	1	-
Web service architecture	Power Point Presentation	1	-
To publish and Consume Web services	Demonstration	1	-
Chapter 10: WSDL			
Introduction to WSDL	Lecture	1	-
WSDL Basic Architecture	Lecture	1	-
WSDL Elements	Lecture	1	-
Chapter 11: SOAP			
Introduction to SOAP	Lecture	1	-
SOAP Skeleton structure	Power Point Presentation	1	-
SOAP Request Elements	Lecture	1	-
SOAP Response Elements	Lecture	1	-
Chapter 12: UDDI			
Introduction to UDDI	Lecture	1	
UDDI Architecture	Lecture	1	
IAPI Elements(IAPI)	Lecture	1	
Publisher API Elements(PAPI)	Lecture	1	
	Total Periods:	**15**	

Signatures of the Teachers

1.

2.

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Signature of the HOD

Date: 04/06/2019.

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS-406 (B) .NET TECHNOLOGIES

CS-406

Lesson Plan

Academic Year	2019 - 20
Year & Semester	IV Year I Semester
Regulation	R-16
Name of Faculty	M.Vasavi

Course Objectives:

1. To learn the C# language and the .NET Framework.
2. To know working of Microsoft Visual Studio Development Environment.
3. To use windows Forms applications with rich, highly responsive user interfaces.
4. To develop web applications and Services using ASP.NET.
5. To know the use of Language Integrated Query (LINQ).

Course Outcomes:

1. Explain the basic concepts of C# programming.
2. Apply advanced concepts of C# programming for developing console applications.
3. Develop windows, web applications and web services.
4. Develop database driven applications using XML and LINQ.
5. Deploy windows, web applications and web services.

CO- PO's and PSO's Mapping Table

	PO1	PO2	PO3	PO4	PO5	PO12	PSO1	PSO2	PSO3
CO1	2				3		3	3	2
CO2	2	3	3	2	3	2	3	3	3
CO3	2	3	3	3	3	2	3	3	3
CO4	2	3	3	3	3	2	3	3	3
CO5	2	2	2	2	3	2	2	2	3

Unit- I

Learning Outcomes:

1. Create Console Applications using C# Concepts. [CO1]
2. Analyze the debugging and Error handling concepts in VS2010. [CO1]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introducing C#	Lecture	1	
Understanding .NET	Lecture	1	
Overview of C#, Literals, Variables,	Lecture	1	
Data Types, Operators, Expressions,	Lecture	1	
Flow Control :Branching, Looping, Methods, Arrays	Lecture	1	
Strings	Demonstration	1	
Structures	Lecture	1	
Enumerations.	Lecture	1	
Review of Examples	Demonstration	1	
Variables and Expressions	Lecture	2	
More About Variables	Lecture	1	
Functions in C#	Lecture	2	
Examples in C3	Tutorial		1
Total No. of Hours		**15**	

Unit- II

Learning Outcomes:

1. Demonstrate the knowledge on Advance OOPS concepts. [CO2]
2. Comprehend the C# Language Enhancements. [CO2]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Debugging	Lecture	1	
Error Handling	Lecture	1	
Introduction to Object-Oriented Programming,	Lecture	0.5	
Defining Classes	Lecture	0.5	
Defining Class Members	Lecture	0.5	
Classes, Objects Examples	Lecture	0.5	
Examples on Classes	Demonstration	1	
Inheritance	Lecture	1	
Polymorphism	Lecture	1	
Interfaces	Lecture	1	
Operator Overloading,	Lecture	1	
Delegates	Lecture	1	
Events	Lecture	1	
Errors and Exceptions	Lecture	1	

Examples	Demonstration	1	
Introduction to Collections	Lecture	0.5	
Introduction to Comparisons	Lecture	0.5	
Introduction to Conversions	Lecture	1	
Total No. of Hours		**15**	

Unit- III

Learning Outcomes:

1. Develop Windows forms applications in VS2010 [CO3]
2. Deploy window form applications [CO5]

Topic of syllabus covered	**Teaching Mode**	**Hours Required**	
		L	**T**
Introduction to Generics	Lecture	1	
Examples on Generics	Demonstration	1	
Additional OOP Techniques	Lecture	1	
Examples on C# Language Enhancements	Lecture	1	
Basic Windows Programming	Lecture	1	
Building Windows Applications	Lecture	1	
Console application to windows Forms	Lecture	1	
Windows Forms versus web Forms	Lecture	1	
Basic Window form controls	Lecture	2	
Create simple window form application	Lecture	1	
Advanced window form controls	Lecture	2	
Deploying window form applications.	Lecture	2	
Total No. of Hours		**15**	

Unit- IV

Learning Outcomes:

1. Create ASP.NET applications using databases [CO3]
2. Create Web services [CO5]
3. Deploy web Applications [CO5]

Topic of syllabus covered	**Teaching Mode**	**Hours Required**	
		L	**T**
Basic Introduction about ASP.Net	Lecture	1	
ASP.NET Web Programming	Lecture	1	
Basic server controls	Lecture	2	
Validation controls	Lecture	1	
Navigation controls	Lecture	1	
Login controls	Lecture	1	

Reading and writing data into database	Lecture	2	
Web Services	Lecture	2	
Deploying Web Applications	Lecture	1	
Web Application Example	Demonstration	2	
SDI and MDI	Lecture	1	
Total No. of Hours		**15**	

Unit- V

Learning Outcomes:

1. Apply the XML concepts to create a database application [CO4]
2. Develop Simple application in VS2010 using LINQ [CO4]

Topic of syllabus covered	**Teaching Mode**	**Hours Required**	
		L	**T**
Introduction about File System	Lecture	2	
Different classes available in system.IO namespace	Lecture	2	
Introduction to LINQ	Lecture	2	
Applying LINQ	Lecture	3	
Programming Web Applications	Lecture	2	
Web Forms with Data Access	Lecture	2	
XML Example	Lecture	2	
Total No. of Hours		**15**	

Signatures of the Teachers

1. M.Vasavi

Signature of the HOD

Date: 06/06/2019

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS408- Internet of Things (IoT)

Lesson Plan

Academic Year	2019 - 20
Year & Semester	IV B.Tech- 8th Semester
Regulation	R-16
Name of Faculty	Dr.A.Srinagesh

Unit- I

Learning Outcomes:

1. Explore the fundamental Concepts of IoT
2. Understand the application areas of IOT.

Topic of syllabus covered	Teaching Mode	Hours Required
IoT Introduction	Lecture	1
IoT Architecture	Lecture	1
IoT Definition and Characteristics of IoT	Lecture	1
Physical Design of IoT	Lecture	1
Logical Design of IoT	Lecture	2
IoT Protocols	Lecture	1
IoT Deployment Levels 1-2	Lecture	1
IoT Deployment Levels 3-4	Lecture	1
IoT Deployment Levels 5-6	Lecture	1
Overview on Deployment	Lecture	2
Total		12

Unit- II

Learning Outcomes:

1. Describe the concepts and Applications of IOT
2. Realize the revolution of internet in Mobile Devices, Cloud & Sensor Networks.

Topic of syllabus covered	Teaching Mode	Hours Required
Domain Specific IOTs: Applications	Lecture	1
Applications in IOT	Lecture	1
Home Automation Case study	Lecture	1

Smart Cities Technologies-Examples	Lecture	1
Environment Applications-Case study	Lecture	1
Energy Applications- IOT Real world Example	Lecture	1
Retail Example-Case Study	Lecture	1
Applications: Logistics	Lecture	1
Applications: Agriculture	Lecture	1
Applications: Industry,	Lecture	1
Applications: Health & Life Style.	Lecture	2
Total	Lecture	12

Unit- III

Learning Outcomes:

1. Understand building blocks of Internet of Things and characteristics
2. Differentiate between the communication and Networking Technologies used in IOT

Topic of syllabus covered	Teaching Mode	Hours Required
IoT and M2M-Introduction	Lecture	1
IoT Networking Concepts	Lecture	2
M2M Architecture-Examples	lecture	2
SDN -Introduction	Lecture	2
IoT Networking Architectures-examples	Lecture	2
NFV –Introduction	Lecture	2
Difference Between SDN And NFV	Lecture	1
Total		12

Unit- IV

Learning Outcomes:

1. Have real time experience with Raspberry Pi kit to interface various devices.
2. Adapt and install Linux operating System to configure IoT device
3. Implement basic Programs in Python.

Topic of syllabus covered	Teaching Mode	Hours Required
Developing Internet of Things: Introduction,.Installation And Linux Commands In Raspberry Pi	Lecture	1
IOT Design Methodology.	Lecture	1
Installing Python Environment	Demonstration	1
Python Data Types	Lecture	1
Python Data Structures	Lecture	1

Logical Design using Python: Control Flow Statements-Examples	Lecture	1
Functions, Modules, Packages-Examples	Lecture	1
File Handling operations-Examples	Lecture	1
Date/Time Operations--Examples	Lecture	1
Classes, Python Packages--Examples	Lecture	1
Examples In Python-Lists	Lecture	1
Raspberry Pi OS Installation Examples On Raspberry Pi Using Python	Lecture	1
Total		12

Unit- V

Learning Outcomes:

1. Demonstration Python examples on raspberry Pi.
2. Learn Programming techniques for IOT Devices.

Topic of syllabus covered	Teaching Mode	Hours Required
Raspberry Pi Examples	Lecture	1
Raspberry Programs In Python		1
Objects and Modules, Even More	Lecture	1
Modules, Launching and Other Programs from Python	Lecture	2
Troubleshooting Errors	Lecture	1
Endpoints: Interfaces, and Programming & IOT Devices.		2
Basic I/O - Using Inputs and Outputs	Lecture	1
Programming I/O with Python	Lecture	1
Installing and Testing GPIO in Python	Lecture	1
Blinking an LED, Reading a Button.	Lecture	1
Total		12

1. Dr. A.Srinagesh
2. Sri E.Ramesh
3. Sri P.Siva Prasad

Signatures of the Faculty

Signature of the HOD

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING
CS 409(B) – DIGITAL IMAGE PROCESSING (Elective – V)
Lesson Plan

Academic Year	2019 - 20
Year & Semester	IV Year II Semester
Regulation	R-16
Name of Faculty	N.Hanumantha Rao

Course Objectives:

1. To understand the basics of digital image processing.
2. To know image enhancement techniques in spatial and frequency domains.
3. To understand the concepts of Image restoration.
4. To learn about mechanisms for advanced image analysis.

Course Outcomes:

1. Get familiarize with fundamentals of digital image processing.
2. Able to apply techniques of smoothening, sharpening, and filtering in spatial and frequency domain.
3. Can use restoration techniques.
4. Able to develop image compression techniques using standard algorithms to meet design specifications.
5. Can apply Morphological processing and Image segmentation techniques for practical applications.

CO-PO & PSO Mapping Table:

	PO1	PO2	PO3	PO4	PSO1	PSO3
CO1	3				3	2
CO2	2	3			2	
CO3	2	3	2	2	3	2
CO4	3	2	2	2	3	3
CO5		2	2		3	2

Unit- I

Learning Outcomes

1. Describing Elements of a Digital. [CO1]
2. Differentiating types of Images. [CO1]
3. Get familiarize with fundamental steps and basic components of Digital image processing. [CO1]

Topic of syllabus covered	Teaching Mode	Hours Required
Introduction: Digital Image processing operations	Lecture	2
Fundamental Steps, Block diagram	Lecture , Demonstration	1
Digital Image Fundamentals: Obtaining digital image	Lecture	1
Components of image processing system	Lecture, Demonstration	1
Elements of visual perception	Lecture, Demonstration	2
Image sensing & acquisition	Lecture	2
Sampling & Quantization	Lecture, Demonstration	1
Relation b/n pixels	Lecture, Demonstration	2

Unit- II

Learning Outcomes

1. Able to apply techniques of smoothening, sharpening, and filtering in spatial and frequency domain. [CO2]
2. Describe various image transform techniques. [CO2]

Topic of syllabus covered	Teaching Mode	Hours Required
Intensity Transformations and Spatial Filtering:Some Basic Gray Level Transformation	Lecture	2
Histogram Processing,	Lecture, Demonstration	2
Enhancement using Arithmetic/Logic Operations	Lecture	1
Basics of Spatial Filtering,	Lecture	2
Smoothing spatial Filters,	Lecture, Demonstration	1

Sharpening spatial Filters.	Lecture, Demonstration	2
Filtering in the Frequency Domain:Introduction to the Fourier Transform and the Frequency Domain,	Lecture	2
Smoothing frequency-domain Filters, Homomorphic Filtering	Lecture	2

Unit- III

Learning Outcomes

1. Able to differentiate Image restoration techniques. [CO3]
2. Applying different restoration techniques. [CO3]

Topic of syllabus covered	Teaching Mode	Hours Required
Image Restoration : Model of Image Restoration Process	Lecture, Demonstration	2
Noise Models	Lecture	2
Restoration in presence of noise	Lecture	2
Linear, Position-Invariant Degradations	Lecture	2
Periodic Noise Reduction by Frequency Domain filtering	Lecture, Demonstration	1
Constrained Least Squares Filtering.	Lecture	1
Linear, Position-Invariant Degradations	Lecture	2
Inverse Filtering, Minimum Mean Square Error (Wiener) Filtering	Lecture	1
Constrained Least Squares Filtering.	Lecture	2

Unit- IV

Learning Outcomes

1. Able to develop image compression techniques using standard algorithms to meet design specifications. [CO4]
2. Capable to differentiate Lossy and Lossless Compression algorithms. [CO4]
3. Describing different types of redundancies. [CO4]

Topic of syllabus covered	Teaching Mode	Hours Required
Image Compression : Coding Redundancy, Spatial and Temporal Redundancy,	Lecture , Demonstration	2
Image Compression Models	Lecture, Demonstration	2

Error-free Compression	Lecture	2
Lossy Compression	Lecture	2
Image Compression Standards.	Lecture, Demonstration	2

Unit- V

Learning Outcomes

1. Can apply Morphological processing and Image segmentation techniques for practical applications. [CO5]
2. Able to apply segmentation algorithms. [CO5]

Topic of syllabus covered	Teaching Mode	Hours Required
Morphological Processing Dilation and Erosion	Lecture, Demonstration	2
The Hit-or-Miss Transformation	Lecture, Demonstration	2
Some basic Morphological Algorithms	Lecture	2
Extension to Gray-Scale Images.	Lecture	2
Segmentation: Detection of Discontinuities	Lecture, Demonstration	1
Edge Linking and Boundary Detection	Lecture, Demonstration	2
Thresholding	Lecture	1
Region-Based Segmentation.	Lecture, Demonstration	2

Signatures of the Teachers

Signature of the HOD

1.

Date: 25/11/19

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 410(A) – Elective VI – MACHINE LEARNING

Lesson Plan

Academic Year: 2019 – 20

Year & Semester: IV Year II Semester

Regulation: R -16

Name of the Faculty: Dr M V P Chandra Sekhara Rao/ Dr N Venkateswara Rao

Course Objectives:

1. To understand the basic concepts of learning and decision trees.
2. To know about the neural networks algorithms.
3. To learn the Bayesian techniques.
4. To understand the instant based learning.
5. To learn the analytical learning and reinforced learning.

Course Outcomes:

1. Choose the learning techniques with this basic knowledge.
2. Apply effectively neural networks algorithms for appropriate applications.
3. Apply Bayesian techniques and derive effectively learning rules.
4. Choose and differentiate reinforcement and analytical learning techniques.

CO – PO – PSO Mapping Table

	PO1	PO2	PO4	PSO1	PSO3
CO 1	2		2	3	2
CO 2	2			2	
CO 3		2		2	
CO 4		2		2	
CO 5		2	2	2	2
CO 6	2		2	2	2

Unit- I

Learning Outcomes

1. Explain various machine learning techniques. CO1
2. Discuss various concept learning techniques. CO1

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Overview Of Machine Learning	Lecture	1	
Different types of machine learning techniques	Lecture	1	
Designing a learning system	Lecture	1	
Concept Learning - General To Specific Ordering	Leture		
Concept Learning Task	Lecture, Interaction	1	
Concept Learning	Lecture	1	
Maximally Specific Hypothesis	Lecture, Demonstration	1	
Find-S Algorithm	Lecture, Demonstration	1	
Version Spaces	Lecture	1	
Candidate Elimination Algorithm	Lecture, Interaction	1	
Remarks On Version Spaces	Lecture	1	
Inductive Bias In Concept Learning	Lecture	1	

Unit- II

Learning Outcomes

1. Explain decision tree representation for supervised learning. CO1
2. Construction of decision tree for given data. CO1

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Decision Tree (DT) Learning	Lecture	1	
Decision Tree representation	Lecture	2	
Appropriate problems for DT learning	Lecture, Interaction	1	
Decision Tree learning algorithm	Lecture, Demonstration	2	
Hypothesis Space Search In Decision Tree	Lecture, Demonstration	1	
Inductive Bias In Decision Tree	Lecture	2	
Issues in Decision Tree learning	Lecture, Interaction	1	

Unit- III

Learning Outcomes

1. Represent the perceptron and back-propagation networks. CO2
2. Discuss the applications of Neural networks. CO2

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Neural Networks (NN)	Lecture	1	
Neural Network Representations	Lecture, Discussion	1	
Appropriate problems for NN	Lecture	1	
Perceptron Networks	Lecture, Discussion	2	
Multi-layer Neural Networks	Lecture, Interaction	1	
Back Propagation Algorithm	Lecture, Interaction	2	
Remarks on Back Propagation Algorithm	Lecture	1	
Face recognition example	Lecture, Demonstration	2	
Advanced topics in NN	Lecture, Demonstration	1	

Unit- IV

Learning Outcomes

1. Discuss the evaluation of hypothesis. CO3
2. Explain various Bayesian learning methods. CO3

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Evaluating Hypothesis	Lecture	1	
Estimating Hypothesis Accuracy	Lecture	1	
Basics of sampling theory	Lecture	1	
Deriving confidence intervals	Lecture, Interaction	1	
Difference in error of two hypothesis	Lecture, Interaction	1	
Comparing Learning Algorithms	Lecture, Demonstration	1	
Bayesian Learning	Lecture, Demonstration	2	
Maximum Likelihood Hypothesis	Lecture, Demonstration	2	
Gibbs algorithm	Lecture	1	
EM algorithm	Lecture	1	

Unit- V

Learning Outcomes

1. Discuss various computational learning theories. CO4
2. Demonstrate instance based learning (IBL) . CO4

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Computational Learning Theory	Lecture	1	
Sample Complexity For Finite Hypothesis Space	Lecture	1	
Sample Complexity For Infinite Hypothesis Space	Lecture	2	
Mistake Bound Model Of Learning	Lecture, Interaction	2	
Instance Based Learning - K-NN Algorithm	Lecture	1	
Radial Basis Functions	Lecture, Interaction	1	
Case Based Reasoning	Lecture	1	
Remarks On Lazy And Eager Learning	Lecture, Discussion	2	

Signatures of the Teachers

1.

2.

Signature of the HOD

Date: 05/06/2019.

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 105 – Problem Solving with C

Lesson Plan

Academic Year	2017 - 18
Year & Semester	I Year I Semester
Regulation	R-16
Name of Faculty	E.Ramesh /K.Aravinda /B.Prasanthi

Course Objectives:

- To know the basic problem solving process using Flow Charts and algorithms.
- To understand the basic concepts of control structures in C.
- To learn concepts of arrays, functions, pointers and Dynamic memory allocation in C.
- To use the concepts of structures, unions, files and command line arguments in C.

Course Outcomes:

- Develop algorithms and flow charts for simple problems.
- Use suitable control structures for developing code in C.
- Design modular programs using the concepts of functions and arrays.
- Design well-structured programs using the concepts of structures and pointers.
- Develop code for complex applications using file handling features.

CO-PO Mapping:

	PO1	PO2	PO3	PO4	PO12
CO1	3	3			3
CO2		3	3	3	
CO3		3	3	3	3
CO4		3	3	3	3
CO5		3	2	3	2

CO-PSO Mapping

	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	2	3	3
CO5	2	2	3

Unit- I

Learning Outcomes:

1. Discuss the basic fundamentals of programming, algorithms and programming hardware technologies.
2. Discuss about the number systems which are very useful for arithmetic operations.

Topic of syllabus covered	Teaching Mode	Hours Required		Course Outcomes
		L	T	
Computer Fundamentals: Computer & it's Components, Hardware / Software	Lecture	1		**CO1**
Programming languages, Algorithm, Characteristics of algorithm,	Lecture & Presentation	1		**CO1**
Flowchart, Symbols are used in flowchart	Lecture & Presentation	1		**CO1**
History of C, structure of C program, C language features.	Lecture & Presentation	1		**CO1**
C Tokens: Character set, Identifiers, Keywords constants.	Lecture & Demonstration	1		**CO1**
Data types, type qualifiers, Declaration and Initialization of variables.	Lecture & Demonstration	1		**CO1**
Operators & Expressions: C operators and expressions.	Lecture & Demonstration	1	1	**CO1**
Type-conversion methods, Operators Precedence and Associativity.	Lecture & Demonstration	1		**CO1**
Input/ Output functions and other library functions.	Lecture & Demonstration	1		**CO1**
Programming Exercises	Lecture, Presentation & Demonstration	2		**CO1**
	Total :	**12**		

Unit- II

Learning Outcomes

1. To implement the programs using the conditional statements.
2. To implement the programs using the iterative statements and arrays.

Topic of syllabus covered	Teaching Mode	Hours Required		Course Outcomes
		L	T	
Conditional Statements: if-else, else-if.	Lecture & Presentation	1		CO2
Switch and goto statements.	Lecture & Presentation	1		CO2
Control Statements: Looping- while, Do-while loop	Lecture & Presentation	2	1	CO2
for loop	Lecture & Presentation	1		CO2
break and continue	Lecture & Presentation	1		CO2
Programming Exercises	Lecture, Presentation & Demonstration	4	1	CO2
	Total :	**12**		

Unit- III
Learning Outcomes

1. Discuss about the code reusability with the help of user defined functions.
2. To implement the user defined function calls, and parameter passing mechanisms using functions.

Topic of syllabus covered	Teaching Mode	Hours Required		Course Outcomes
		L	T	
Arrays: One – dimensional numeric and character arrays.	Lecture & Presentation	1		CO3
Two-dimensional numeric and character arrays.	Lecture & Presentation	1		CO3
Functions: Function Definition, Function prototype	Lecture & Presentation	1		CO3
Types of User Defined Functions, Function calling mechanisms.	Lecture & Presentation	1		CO3

Built-in string handling and character handling functions.	Lecture & Demonstration	1		**CO3**
recursion	Lecture & Demonstration	1		**CO3**
Storage Classes	Lecture & Demonstration	1		**CO3**
Multi-file compilation, Function with Arrays.	Lecture & Presentation	1		**CO3**
Programming Exercises	Lecture, Presentation & Demonstration	3	1	**CO2 & CO3**
	Total :	**12**		

Unit- IV

Learning Outcomes

1. To learn and discuss the concepts of pointers and dynamic memory allocation.
2. To learn and discuss the concepts of structures and unions in C.

Topic of syllabus covered	**Teaching Mode**	**Hours Required**		**Course Outcomes**
		L	**T**	
Pointers: Pointer, Accessing a variable through pointer.	Lecture & Demonstration	1		**CO4**
Pointer Arithmetic, pointer and Arrays.	Lecture & Demonstration	1		**CO4**
Dynamic memory allocation	Lecture & Demonstration	1		**CO4**
Pointer to pointer, Array of pointers.	Lecture & Demonstration	1		**CO4**
Structures: Structures, Nested structures	Lecture	1		**CO4**
Array of structures, Pointer to structures.	Lecture & Demonstration	1		**CO4**
Passing structures to functions	Lecture & Demonstration	1		**CO4**
Self-referential structure, Unions.	Lecture	1		**CO4**
Programming Exercises	Lecture, Presentation & Demonstration	3	1	**CO2,CO3 & CO4**
	Total :	**12**		

Unit- V

Learning Outcomes

1. To learn and discuss the concepts files and command line arguments in C.
2. To learn and discuss the pre-processor directives in C.

Topic of syllabus covered	Teaching Mode	Hours Required		Course Outcomes
		L	T	
Files: defining and opening a file, closing a file	Lecture & Presentation	1		**CO5**
Input/output operations on files using file handling functions	Lecture & Presentation	2		**CO5**
Random access to files.	Lecture & Presentation	1		**CO5**
Command line arguments	Lecture & Presentation	2	1	**CO5**
C-pre-processor directives	Lecture & Demonstration	1		**CO5**
Programming Exercises	Lecture, Presentation & Demonstration	3	1	**CO3,CO4 & CO5**
	Total :	**12**		

Signatures of the Teachers

1.
2. K. Aravinda
3. B. Prasanthi

Signature of the HOD

Date: 18-08-2017

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING
CS 111 – Object Oriented Programming
Lesson Plan

Academic Year	2017 – 18
Year & Semester	I Year II Semester
Regulation	R-16
Name of Faculty	Sri. E. Ramesh / Ms. Ch. Vijaya Madhavi Lakshmi / Smt. K. Aravinda

Course Objectives:

1. To know Object Oriented Programming features of C++.
2. To understand the concepts of encapsulation and compile time polymorphism.
3. To learn the concepts inheritance and Runtime polymorphism.
4. To use the concepts of templates and exception handling.
5. To understand the disk access through C++ I/O and other advanced concepts.

Course Outcomes:

1. Differentiate POP and OOP and then use C++ fundamentals and various function modifiers to create and manipulate classes and objects.
2. Make use of the concept of inheritance and its types and efficiently develop reusable and extensible programs.
3. Analyze and differentiate compile time polymorphism and runtime polymorphism.
4. Apply the concept of templates for generic programming.
5. Use exception handling mechanism for developing error free codes.
6. Understand and apply C++ streams, Name Spaces and STL.

CO-PO & PSO Mapping Table:

	PO1	PO2	PO3	PSO1	PSO2	PSO3
CO1	2			3	2	2
CO2		2	2	2	3	2
CO3		2		2	3	
CO4		2	3	2	3	3
CO5		2	2	2	3	2
CO6		2		2	3	3

Unit- I

Learning Outcomes

1. Differentiate Procedure Oriented Programming and Object Oriented Programming. [CO1]
2. Creation and manipulation of classes and objects. [CO1]

Topic of syllabus covered	Teaching Mode	Hours Required
An Overview of C++: The Origins of C++, What is Object Oriented Programming, some C++ fundamentals.	Lecture	1
Old-Style Vs Modern C++, Introducing C++ Classes, Function Overloading.	Lecture	1
Operator Overloading, Inheritance, Constructors and Destructors, The C++ Keywords, The General Form of a C++ Program.	Lecture	2
Classes and Objects: Classes, Structures and Classes, Unions and Classes are Related.	Lecture	1
Friend Functions, Friend Classes	Lecture	1
Inline Functions, Parameterized Constructors.	Lecture	1
Static Class Members, When Constructors and Destructors are Executed.	Lecture	2
Scope Resolution Operator, Nested Classes, Local Classes.	Lecture	1
Passing and Returning Objects, Object Assignment.	Lecture	2
Arrays, Pointers, References and the Dynamic Allocation: Arrays of Objects	Lecture	1
Pointers, References	Lecture	1
Dynamic Allocation Operators and the Placement Forms of new and delete.	Lecture	1

Unit- II

Learning Outcomes

1. Use C++ fundamentals and various function modifiers [CO 1]
2. Apply arithmetic operators on classes using Operator overloading. [CO 1]

Topic of syllabus covered	Teaching Mode	Hours Required
Function Overloading, Copy Constructors and Default Arguments: Function Overloading, Overloading Constructor Functions.	Lecture	2
Copy Constructors.	Lecture	2
Finding the Address of an Overloaded Function, Overload Anachronism.	Lecture	2

Default Arguments, Function Overloading and Ambiguity.	Lecture	1
Operator Overloading: Creating Member Operator Function.	Lecture	2
Overloading Using a Friend Function	Lecture	2
Overloading new delete	Lecture	2
Overloading Special Operators & Comma Operator.	Lecture	2

Unit- III

Learning Outcomes

1. Implement various types of inheritance and develop reusable and extensible programs efficiently. [CO 2]
2. Differentiate compile time polymorphism and runtime polymorphism. [CO 3]

Topic of syllabus covered	Teaching Mode	Hours Required
Inheritance: Base-Class Access Control, Inheritance.	Lecture	2
Inheritance and protected members.	Lecture	2
Inheriting Multiple Base Classes	Lecture	1
Constructors, Destructors and Inheritance	Lecture	2
Granting Access	Lecture	1
Virtual Base Classes.	Lecture	1
Virtual Functions & Polymorphism: Virtual Functions	Lecture	2
The Virtual Attribute is inherited, Virtual Functions are Hierarchical	Lecture	1
Pure Virtual Functions	Lecture	2
Using Virtual Functions, Early Vs Late Binding.	Lecture	1

Unit- IV

Learning Outcomes

1. Apply the concept of template functions and classes for generic programming. [CO 4]
2. Use exception handling mechanism for developing error free codes. [CO 5]

Topic of syllabus covered	Teaching Mode	Hours Required
Templates: Generic Functions, Applying Generic Functions	Lecture	2
Generic Classes	Lecture	1

Typename and export Keywords, Power of Templates.	Lecture	1
Exception Handling: Fundamentals	Lecture	2
Derived-Class Exceptions	Lecture	2
Options, Terminate() and unexpected()	Lecture	1
uncaught_exception(), exception and bad_exception Classes	Lecture	1
Applying Exception Handling.	Lecture	1
The C++ I/O System Basics: Old Vs. Modern C++ I/O, Stream Classes, Formatted I/O	Lecture	2
Overloading << and >>, Creating Manipulators.	Lecture	2

Unit- V

Learning Outcomes

1. Apply C++ streams and Casting operators. [CO 6]
2. Use of Name Spaces and Standard Template Library. [CO 6]

Topic of syllabus covered	Teaching Mode	Hours Required
C++ File I/O: File Classes, Opening and Closing a File	Lecture	1
Text Files, Unformatted Binary I/O, get(), Getline() functions	Lecture	2
Detecting EOF Random Access.	Lecture	1
Runtime Type ID and the Casting Operators: RTTI	Lecture	2
Casting Operators, Dynamic_cast, Reinterpret_cast.	Lecture	2
Namespaces, Conversion Functions and other Advanced Topics: Namespaces, The std Namespace.	Lecture	1
Creating Conversion Functions, const Member Functions and mutable	Lecture	1
Volatile Member Functions, Explicit Constructors, asm Keyword, Linkage Specification	Lecture	1
Array-Based I/O, Dynamic Arrays	Lecture	1
Binary I/O with Array-Based Streams, Differences between C and C++.	Lecture	2
Introducing Standard Template Library: An Overview of STL.	Lecture	1

Signatures of the Teachers

Signature of the HOD

1.

2. C.V.M. Lakshmi

3. K. Aravinda

Date:

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 204 – Data Structures

Lesson Plan

Academic Year	2018 - 19
Year & Semester	II Year I Semester
Regulation	R-16
Name of Faculty	Mr. M Srikanth/ Dr. Ch Aparna /Mr. M Naveen

Course Objectives:

1. To understand different time complexity notations and to find the time and space complexities of algorithms.
2. To understand different linear data structures, their operations and applications.
3. To learn searching, hashing and sorting techniques and to estimate their time complexities.
4. To understand the basic concepts of nonlinear data structures like trees and graphs.

Course Outcomes:

1. Describe the time and space complexities of different algorithms.
2. Illustrate operations like searching, insertion, deletion etc., on various data structures.
3. Analyse different sorting and searching techniques based on time complexities.
4. Explain the operations of advanced data structures such as balanced search trees, hash tables, priority queues.
5. Choose appropriate data structure while solving a problem.

CO – PO & PSO Mapping Table:

	PO1	PO2	PO3	PO4	PSO1	PSO2	PSO3
CO1	2	2			3		2
CO2	2	2	2	2	2	3	
CO3		2			3	3	2
CO4	2	2	2	2	3	3	2
CO5		2	2	2	3	2	

Unit- I

Learning Outcomes

1. To analyse and compare algorithms for efficiency using asymptotic notations. [CO1]
2. Implement operations of List ADT. [CO2]
3. Develop solutions to problems using lists. [CO2]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Algorithm Analysis: Mathematical Background, Model	Lecture	1	
What to Analyse	Lecture	1	
Running Time Calculations.	Blended Learning	1	1
Lists: Abstract Data Types, The List ADT	Demonstration	2	
Singly Linked List ADT	Demonstration	1	
Doubly Linked List ADT	Demonstration	2	
Circular Linked List ADT	Demonstration	1	
Polynomial ADT	Blended Learning	1	1

Unit- II

Learning Outcomes

1. Implement Stack ADT. [CO2]
2. Implement the applications of Stack. [CO2]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Stacks: Stack ADT implementations using arrays	Lecture	2	
Stack ADT implementations using Linked Lists	Lecture	2	
Stack applications: Infix to Postfix expression conversions	Blended Learning	2	1
Evaluation of Postfix expressions	Blended Learning	2	1
Delimiter Matching	Demonstration	2	

Unit- III

Learning Outcomes

1. Implement Queue ADT. [CO2]
2. To analyse and implement the different Searching techniques. [CO3]
3. Implement Hashing functions. [CO5]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Queues: The Queue ADT implementations using Arrays	Lecture	1	

The Queue ADT implementations using Linked Lists	Flipped Classroom	1	
The Circular Queue ADT	Collaboration	2	
Searching: Linear searching	Demonstration	1	
Binary searching	Blended Learning	1	1
Hashing-Hash functions	Lecture	1	
separate chaining	Demonstration	2	
Open Addressing	Demonstration	2	

Unit- IV

Learning Outcomes

1. Implement Search tree ADT. [CO4]
2. To analyse and implement the Heap. [CO4]
3. Implement AVL Trees. [CO4]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Trees: Preliminaries	Lecture	1	
Binary Trees	Lecture	1	
Expression trees	Demonstration	1	
Binary tree traversals	Flipped Classroom	1	
The search tree ADT-Binary search trees	Demonstration	1	
Implementation of Binary search tree	Demonstration	1	
Construction of B-Trees	Blended Learning	1	1
Trees: Heap-building Heap	Lecture	1	
Heap Sorting	Demonstration	1	
AVL trees-single Rotations	Demonstration	1	
AVL trees-Double Rotations	Demonstration	1	

Unit- V

Learning Outcomes

1. To analyse the different Sorting techniques. [CO3]
2. Implement different Sorting techniques. [CO3]
3. Implement the Graph traversal techniques. [CO5]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Internal Sorting: Preliminaries	Lecture	1	
Bubble sort	Demonstration	1	
Selection sort	Demonstration	1	
Insertion sort	Demonstration	1	

Shell sort	Demonstration	1	
Merge sort	Demonstration	1	
Quick sort	Blended Learning	1	1
Comparison of searching and sorting in terms of time complexities	Flipped Classroom	1	
Graphs: Definitions	Lecture	1	
Graph representations	Lecture	1	
Graph traversals	Demonstration	1	

Signatures of the Teachers

1.

2.

3.

Signature of the HOD

Date: 11-06-2018

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 205 – Computer Organization

Lesson Plan

Academic Year 2018 - 19

Year & Semester II Year I Semester

Regulation R-16

Name of Faculty Ms.K.Aravinda, Ms.B.Manasa, Dr.Ch.Aparna

Course Objectives:

1. To learn basic organization of computer system.
2. To understand the design of control unit and I/O organization.
3. To learn the concepts of ALU and pipelining.
4. To acquire the knowledge of memory organization.

Course Outcomes:

1. Explain hardware components and instruction set of a computer system.
2. Demonstrate assembly language programs and instruction execution.
3. Explain the design of control unit and various data transfer schemes.
4. Explain the design of ALU and pipelining operations.
5. Discuss the concepts of memory organization.

Unit- I

Learning Outcomes

1. Discuss the functionality of basic hardware components of a computer. – CO1
2. Explain the instruction set of a computer system. – CO1
3. Describe the addressing modes of instructions. – CO1

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Computer types	Discussion	0.5	
Functional unit	Discussion	0.5	
Basic operational concepts	Lecture	1	
Bus structures	Lecture	1	
Software	Lecture	1	
Performance	Lecture	1	
multiprocessors and multi computers	Lecture	0.5	
Numbers, Arithmetic operations and characters	Lecture& Discussion	1.5	

Memory Locations and addresses	Lecture	0.5	
Memory operations	Lecture	0.5	
Instructions and instruction sequencing	Lecture	1	
Addressing modes with example	Lecture	1	

Unit- II

Learning Outcomes

1. Write assembly language programs to demonstrate input output operations of a computer – CO2
2. Demonstrate instruction execution. – CO2

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Basic Input and Output operations	Lecture	1	
Stacks and Queues	Lecture	1	
Subroutines	Lecture	1	
Additional instructions	Lecture	0.5	
Encoding of machine instructions	Lecture	0.5	
Some fundamental concepts: register transfer, fetching a word from memory, Storing a word in memory	Lecture	2	
Execution of a complete instruction	Lecture	1.5	
Multiple bus organization	Lecture	1.5	

Unit- III

Learning Outcomes

1. Explain the design of control unit – CO3
2. Discuss various data transfer schemes. – CO3

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Hard wired control	Lecture	2	
Micro programmed control: Micro-instructions, Microprogram sequencing, Wide-branch addressing, Microinstruction with next-address field, Prefetching microinstructions, emulation	Lecture	3	
Accessing I/O Devices	Lecture	1	

Interrupts	Lecture	1	
Direct Memory Access	Lecture	1	
Buses	Lecture	1	

Unit- IV

Learning Outcomes

1. Explain the design of ALU in a computer system. – CO4
2. Describe pipelining of instruction execution. – CO4

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Addition and subtraction of signed numbers	Lecture	1	
Multiplication of positive integers	Lecture	1	
Signed-operand multiplication: Booth algorithm	Lecture	1	
Integer division	Lecture	1	
Floating –point numbers and operations	Lecture	1	
Basic Concepts	Lecture	1	
Data Hazards	Lecture	1	
Instruction Hazards	Lecture	1	
Influence on Instruction Sets	Lecture	0.5	
Data path and Control Considerations	Lecture	0.5	
Superscalar Operation	Lecture	1	
performance Considerations	Lecture	1	

Unit- V

Learning Outcomes

1. Discuss the features of various types of computer memory. – CO5
2. Explain the working of primary and secondary memory. – CO5

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Basic concepts of memory unit	Lecture	1	

Semi-conductor RAM memories	Lecture	2	
Read only memories	Lecture	1	
speed, size and cost	Discussion	1	
Cache memories	Lecture	2	
Performance considerations	Discussion	1	
Virtual memories	Lecture	2	
Secondary storage	Lecture	1	

Total number of Periods 50

Signatures of the Teachers
1. K. Aravinda
2. B. Manoj
3.

Signature of the HOD

Date: 7/6/18

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 206 – Discrete Mathematical Structures

Lesson Plan

Academic Year	2018 - 19
Year & Semester	II Year II Semester
Regulation	R-16
Name of Faculty	B.VARA PRASADA RAO, M.SRIKANTH, Ch. RATHNA BABU

Course Objectives:

1. To know the notations used in the discrete mathematics associated with computer science and engineering.
2. To learn the rudiments of elementary mathematical reasoning (elementary proofs; proofs by induction).
3. To learn logic and Boolean algebra from a mathematical perspective, but relating it to computer engineering applications.
4. To understand basic set-theoretical notions: relations, functions, graphs, equivalence relations, and orderings. 5. To relate these notions to applications in CSE.

Course Outcomes:

1. Understand set theory notation and fundamentals of first order predicate logic.
2. Understand and use counting and combinatory techniques.
3. Understand and solve recurrence relations.
4. Understand Lattice theory concepts.
5. Solve graph theory problems.

Unit- I

Learning Outcomes

1. Familiarize logical notation and determine if the argument is or is not valid. [CO1]
2. Learn the basic principles of sets and operations in sets, set equalities. [CO1]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Sets, Relations and Functions, Fundamentals of Logic	Lecture	4	
Exercises 1.2.5 to 1.2.10, 1.3.1 to 1.3.5, 1.5.1 to 1.5.3 of Prescribed Text book.	Tutorial		1
Logical Inferences	Lecture	3	
Exercises 1.6.1 (1 to 5)	Tutorial		1
First order Logic & methods of proof, Rules of inference for Quantified Propositions	Lecture	3	
Exercises 1.7.2 (a to i), 1.8.1(a to j)	Tutorial		1
Mathematical Induction	Lecture	2	
Exercises 1.10.1, 1.10.3 to 1.10.9, 2.1.1 to 2.1.5	Tutorial		1

Unit- II

Learning Outcomes

1. Ability to solve Problems based on counting principles. [CO2]
2. Analyze a problem to apply combinations. [CO2]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Basics of Counting , Combinations and Permutations	Lecture	5	
Enumeration of Permutations and Combinations	Lecture	4	
Permutations and Combinations With Repetitions, enumerating	Lecture	3	
Exercises 2.2.1 to 2.2.4 Exercises 2.3.1 to 2.3.10, 2.4.11	Tutorial		1
Permutations with Constrained Repetitions	Lecture	1	

Unit- III

Learning Outcomes

1. Ability to solve recurrence relations. [CO3]
2. Identify the practical application of Recurrence relations [CO3]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Recurrence Relations, Generating Functions of sequences	Lecture	3	
Calculating Coefficients of Generating Functions,	Lecture	5	
Exercises 2.4.12, 2.4.15, 2.5.2, 2.5.10 Exercises 3.1.1, 3.1.3, 3.2.6	Tutorial		1
Solving Recurrence Relations	Lecture	4	
Exercises 3.3.1, 3.4.1, 4.2.1 (a to f)	Tutorial		1
Characteristic roots, In-homogeneous equations	Lecture	4	

Unit- IV

Learning Outcomes

1. Illustrate how to form partitions based on Equivalence relations. [CO4]
2. Learn relationship between graphs and relations. [CO4]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Relations and digraphs	Lecture	1	
Special properties of binary relations	Lecture	2	
Equivalence relations	Lecture	3	
Operations on relations	Lecture	2	
Exercises 4.2.2 (a to d), Exercises 4.3.30(a , b)	Tutorial		1

Unit- V

Learning Outcomes

1. Illustrate by example the basic terminology of graph theory, and some of the Properties and special cases of each. [CO5]
2. Analyse the properties of lattice theory and Boolean algebra. [CO5]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Ordering Relations, Lattices and Enumerations	Lecture	2	
Paths and Closures, Topological Sorting, Graphs: Basic Concepts	Lecture	4	
Exercises 4.4.10(a to g), 4.4.11(a to f) Exercises 4.6.1 (a to d), 4.7.1.1, 4.7.1.2	Tutorial		1
Isomorphism and Sub Graphs, Planar graphs and Euler's Formula	Lecture	4	
Multi Graphs, Euler Circuits, Hamilton Graphs	Lecture	2	
Exercises 5.2.2 (a to d), 5.7.4(a to c) Exercises 5.9.3 (a, b), 5.9.15(a to d)	Tutorial		1
Chromatic Numbers, Four Color Problem	Lecture	3	
Exercises 5.11.2 (a to c), 5.12.3	Tutorial		1

Signatures of the Teachers

1.
2. M. Srikanth
3. Ch. Rabindra

Signature of the HOD

Date: 20/11/18

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 209 – THEORY OF COMPUTATION

Lesson plan for academic year 2018-19

Academic Year	2018 - 19
Year & Semester	II Year II Semester
Regulation	R-16
Name of Faculty	Mr D. Praveen Kumar/ Mr K. Siva Kumar/Mr E. Ramesh

Course Objectives:

1. To understand concepts of Finite automata theory and its applications.
2. To discuss finite Automata with ϵ- Transitions, Regular expressions, and Regular languages.
3. To know the properties of Regular languages and Context-free grammars.
4. To understand push-down automata, Context-free languages and its properties.
5. To learn Turing machines and Undecidability.

Course Outcomes:

1. Design finite state machines.
2. Design ϵ-NFA, conversion between Finite automata and Regular expressions.
3. Apply pumping lemma for Regular languages, construct parse trees for CFG and ambiguous grammars.
4. Construct push-down automata and apply pumping lemma for CFL.
5. Design Turing Machines and analyze Undecidability.

CO-PO & PSO Mapping Table:

	PO1	PO2	PO3	PO4	PO10	PSO1	PSO2	PSO3
CO1	3					3		2
CO2	2	3	2	3	2	3		
CO3	2	3	3	3	2	3	2	2
CO4	2	2	3		2	3	3	2
CO5		2	2		2	3	2	2

Unit- I

Learning Outcomes

1. Familiarize with basic TOC concepts. [CO 1]
2. Develop DFA, NFA and Epsilon-NFA. [CO 1]
3. Develop MOORE and MELAY machines. [CO 1]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Finite Automata.	Lecture	1	
The central concepts of Automata theory - Alphabets, Strings, Languages.	Lecture, Demonstration	1	
An Informal picture of finite automata	Demonstration	1	
Deterministic Finite Automata: Definition of DFA, How a DFA Process strings.	Lecture	1	
Simpler Notations for DFA, Extending the transition function to strings. The extended transition function	Demonstration	1	
The language of DFA & Construction of DFA	Demonstration	1	
Non deterministic finite automata, Definition of NFA, The language of NFA.	Demonstration	2	1
Equivalence between NFA and DFA.	Demonstration	1	1
Equivalence of NFA and DFA problems	Demonstration	1	1
Equivalence theorem	Demonstration	1	
FA with $\in$ transitions	Demonstration	1	
Use of $\in$ - transition, notation for an $\in$ - NFA, Epsilon closures,	Demonstration	1	
extended transitions and languages	Demonstration	1	
Equivalence between NFA with $\in$ &NFA without $\in$	Demonstration	1	
Eliminating the epsilon transitions	Demonstration	1	1
applications Finite automata	Demonstration	1	
Moore machine	Demonstration	1	
Melay Machine	Demonstration	1	
Equivalence between moore and melay machines	Demonstration	1	

Unit- II

Learning Outcomes

1. Implement regular expressions for the given languages. [CO 2]
2. Design equivalence between FA and RE. [CO 2]
3. Apply minimization algorithms for FA. [CO 2]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Regular Expression, The operators of Regular expressions.	Lecture	1	
Building the regular expression, precedence of Regular expression.	Lecture	1	1
Algebraic laws of regular expressions.	Lecture	1	
Properties of Regular Languages	Demonstration	1	
Pumping lemma for regular languages	Demonstration	1	1
Applications of the pumping lemma	Demonstration	1	
Closure Properties of Regular Languages (Union, concatenation, Kleene closure)	Demonstration	1	
Closure Properties of Regular Languages (Compliment, Substitution, Homomorphism etc.)	Demonstration	1	
From DFA to regular expression	Demonstration	1	
Converting Regular expressions to automata.	Demonstration	1	
Applications of Regular expressions.	Demonstration	1	
Minimization of DFA – MY HILL Nerode theorem	Demonstration	1	1
Minimization of DFA – Marking Algorithm	Demonstration	1	1

Unit- III

Learning Outcomes

1. Develop context free grammars and PDA. [CO 3]
2. Apply simplification algorithms on CFG. [CO 3]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Grammars	Demonstration	1	
Context- Free grammars and languages	Demonstration	1	
Derivations- Left most derivation and Right most derivation	Demonstration	1	
Construction of Parse trees	Demonstration	1	1
Parsing – Top down and Bottom up parsing	Demonstration	1	1
Ambiguous grammars	Lecture	1	
Exercises problems	Lecture	1	
Definition of the Pushdown automata	Demonstration	1	
Construction of PDA from languages, Accepting by final states, Acceptance by empty stack.	Demonstration	1	
Construction of PDA from grammars	Demonstration	1	
Equivalences of PDA's and CFG's	Demonstration	1	1
Simplification of CFG	Demonstration	1	1

Unit- IV

Learning Outcomes

1. Implement CNF and GNF. [CO 4]
2. Apply Pummping lemma theorem for regular languages. [CO 4]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Normal forms – Chomsky Normal form (CNF)	Lecture	1	1
Normal forms – Greibach Normal form (GNF)	Demonstration	1	1
Application of Context free grammars	Demonstration	1	
The pumping lemma for context free languages.	Demonstration	1	1
Applications of pumping lemma for CFL's	Demonstration	1	
Closure properties for context free languages (Union, Concatenation, Kleene closure)	Demonstration	1	
Closure properties for context free languages (Intersection, Compliment, Homomorphism, and Inverse Homomorphism)	Demonstration	1	

Unit- V

Learning Outcomes

1. Develop TM for REL's. [CO 5]
2. Familiarize the concept of undecidability. [CO 5]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Turing Machines	Lecture	1	
Construction of TM for languages	Demonstration	1	1
Construction of TM for computable functions	Demonstration	1	1
Programming techniques for Turing machines.	Demonstration	1	
Transition diagrams for Turing machines, The language of a Turing machine, The Turing machine and halting.	Demonstration	1	
Extension to basic Turing machines Multi tape Turing machines,Equivalence of One tape and multiple TM's.	Demonstration	1	
Undecidability, a language that is not recursively enumerable.	Demonstration	1	
An undecidable problem that is RE.	Demonstration	1	
Undecidability problems about TM, Post's Correspondence problem	Demonstration	1	

Signatures of the Teachers

1. D Praveen Kumar
2. 22/11
3.

Signature of the HOD

Date: 22/11/2018

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 210 – Database Management Systems

Lesson Plan

Academic Year 2018 - 19

Year & Semester II Year II Semester

Regulation R-16

Name of Faculty K. Aravinda/ M. Naveen /Ch. Vijaya Madhavi Lakshmi

Course Objectives:

1. To understand the fundamental concepts of database system.
2. To learn conceptual data modelling and relational data model.
3. To know about advanced formal relational Languages and SQL.
4. To understand database design and Implementation.
5. To learn various modules in Database management system.

Course Outcomes:

1. Familiarize with fundamental concepts of database and various database architectures.
2. Design relations for Relational databases using conceptual data modelling.
3. Implement formal relational operations in relational algebra and SQL.
4. Identify the normalization process for relational databases.
5. Use mechanisms for the development of multi user database applications.

CO-PO & PSO Mapping Table:

	PO1	PO2	PO3	PO4	PO10	PO12	PSO1	PSO2	PSO3
CO1		3		3	2	3	2	1	1
CO2		3		3	3	2		3	2
CO3	3	2	3	3		3		3	2
CO4		3	2	2	3	3		3	2
CO5	3	3	3	3	3	3	2	3	3

Unit- I

Learning Outcomes

1. Familiarize with fundamental concepts of database. CO1
2. Familiarize with various database architectures. CO1

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Databases: Introduction-An Example	Lecture	1	
Characteristics of the Database Approach	Lecture	1	

Actors on the Scene- Workers behind the Scene	Lecture	1	
Advantages of Using the DBMS Approach	Lecture	1	
A Brief History of Database Applications.	Lecture	1	
Overview of Database Languages and Architecture: Data Models, Schemas, and Instances	Lecture	1	
Three-Schema Architecture and Data Independence	Lecture	1	
Database Languages and Interfaces	Lecture	1	
The Database System Environment	Lecture	1	
Centralized and Client/Server Architectures for DBMSs	Lecture	2	
Classification of Database Management Systems	Lecture	1	

Unit- II

Learning Outcomes

1. Familiarize the Design issues of ER Diagrams. CO2
2. Design relations for Relational databases using conceptual data modelling. CO2

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Conceptual Data Modelling Using Entities and Relationships: Using High-Level Conceptual Data Models for Database Design	Lecture	1	
A Sample Database Application	Lecture	1	
Entity Types, Entity Sets, Attributes, and Keys	Lecture	1	
Relationship Types, Relationship Sets	Lecture	1	
Roles, and Structural Constraints, Weak Entity Types	Lecture	1	
Refining the ER Design for the COMPANY Database	Demonstration	1	
ER Diagrams, Naming Conventions, and Design Issues	Demonstration	1	
ER Diagrams	Demonstration		1
The Basic Relational Model: Relational Model Concepts	Lecture	1	
Relational Model Constraints and Relational Database Schemas	Lecture	1	
Update Operations, Transactions, and Dealing with Constraint Violations	Lecture	1	
Relational Database Design Using ER-to-Relational Mapping	Lecture	1	

Unit- III

Learning Outcomes

1. To analyse formal relational operations in relational algebra. CO3
2. To analyse and implement SQL commands. CO3

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Formal Relational Languages: Unary Relational Algebra Operations	Demonstration	1	
Relational Algebra Operations from Set Theory	Demonstration	1	
Binary Relational Operations: JOIN and DIVISION	Demonstration	1	
Additional Relational Operations	Demonstration	1	
The Tuple Relational Calculus	Lecture	1	
The Domain Relational Calculus	Lecture	1	
SQL: SQL Data Definition and Data Types - Specifying Constraints in SQL	Demonstration	1	
Basic Retrieval Queries in SQL- INSERT, DELETE, and UPDATE Statements in SQL	Demonstration	1	1
More Complex SQL Retrieval Queries	Demonstration	1	
Views (Virtual Tables) in SQL	Demonstration	1	
Schema Change Statements in SQL	Demonstration	1	

Unit- IV

Learning Outcomes

1. Familiarize the concept of normalization and different normal forms. CO4
2. Identify the normalization process for relational databases. CO4

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Database Design Theory: Informal Design Guidelines for Relation Schemas	Lecture	1	
Functional Dependencies - Normal Forms Based on Primary Keys: 1NF, 2NF	Demonstration	1	
3NF	Demonstration	1	
Boyce-Codd Normal Form	Demonstration	1	1
Multi valued Dependency and Fourth Normal Form	Demonstration	1	
Join Dependencies and Fifth Normal Form	Demonstration	1	
Normalization Algorithms: Inference rules, Equivalence	Demonstration	1	
Closure set and minimal cover in Functional	Demonstration	1	

Dependencies			
Properties of Relational Decompositions	Demonstration	1	
Algorithms for Relational Database Schema Design	Demonstration	1	
About Nulls, Dangling Tuples and Alternative Relational Designs	Lecture	1	

Unit- V

Learning Outcomes

1. Familiarize with database transaction processing. CO5
2. Familiarize with Concurrency control techniques in database. CO5
3. Familiarize with database recovery protocols. CO5

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Foundations of Database Transaction Processing: Introduction to Transaction Processing	Lecture	1	
Transaction and System Concepts	Lecture	1	
Desirable Properties of Transactions	Lecture	1	
Characterizing Schedules Based on Recoverability and Serializability	Lecture	1	
Introduction to Protocols for Concurrency Control in Databases: Two-Phase Locking Techniques for Concurrency Control	Demonstration	1	
Concurrency Control Based on Timestamp Ordering	Lecture	1	
Multi version Concurrency Control Techniques	Lecture	1	
Validation (Optimistic) Concurrency Control Techniques.	Lecture	1	
Introduction to Database Recovery Protocols: Recovery Concepts	Lecture	1	
Recovery Techniques Based on Deferred Update	Lecture	1	
Recovery Techniques Based on Immediate Update	Lecture	1	
Shadow Paging	Lecture	1	

Signatures of the Teachers

1. K. Asa[illegible]
2. M. N[illegible]
3. [illegible]

Signature of the HOD

Date: 23-11-2018

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

CS 211 – Java Programming

Lesson Plan

Academic Year	2018 - 19
Year & Semester	II Year II Semester
Regulation	R-16
Name of Faculty	K. Siva Kumar/ Dr.B. Vara Prasad /A. Rami Reddy

Course Objectives:

1. To understand the basic concepts and fundamentals of platform independent object oriented language.
2. To develop skills in writing programs using exception handling techniques and multithreading.
3. To understand streams and efficient user interface design techniques.
4. To gain in-depth understanding of java database connectivity and Networking.

Course Outcomes:

1. Apply the syntax and semantics of java programming language and basic concepts of OOP.
2. Develop reusable programs using the concepts of inheritance, polymorphism, interfaces and packages.
3. Apply the concepts of Multithreading and Exception handling to develop efficient and error free codes.
4. Demonstrate how the java program communicates with the console and disk files using the concept of streams.
5. Design event driven GUI and web related applications which mimic the real word scenarios.
6. Develop Interactive programs related to data base connectivity and client server communications.

CO-PO's and PSO's Mapping Table

	PO1	PO2	PO3	PSO1	PSO2	PSO3
CO1	3			3	2	
CO2		2	2	2	3	2
CO3		2	2	2	3	3
CO4		2	2	2	3	2
CO5		2	2	2	3	3
CO6		2	2	3	3	3

Unit- I

Learning Outcomes

1. To learn data types, variables and array concepts.
2. To understand classes and objects
3. To learn methods of class

Topic of syllabus covered	Teaching Mode	Hours Required
The History and Evolution of Java, an Overview of Java	Lecture	1
The primitive types, variables, type conversion and casting,	Demonstration	2
Automatic Type Promotion in Expressions	Lecture	1
Arrays, Operators, Control statements,	Lecture	3
Class fundamentals, Declaring the objects, Assigning Object Reference Variables..	Demonstration	2
Introducing Methods, Constructors, The this keyword	Lecturer	2
Garbage Collection, the finalize() Method	Demonstration	1
Overloading Methods, Using objects as Parameters	Lecture	1
Returning Objects, Introducing Access control	Lecture	1
Understanding static and final keywords.	Lecture	1
Nested and Inner Classes	Lecture	1

Unit- II

Learning Outcomes

1. To understand the concept of inheritance
2. To learn the user defined packages and interfaces
3. To describe the classes of strings

Topic of syllabus covered	Teaching Mode	Hours Required
Inheritance Basics, Using super, Creating multilevel Hierarchy	Lecture	2
When Constructors are executed, Method Overriding.	Demonstration	1
Dynamic Method Dispatch, Using Abstract Classes	Lecture	2
using final with Inheritance, The Object class	Lecture	1

Packages, Access Protection, Importing Packages	Demonstration	2
Interfaces, Default Interface Methods, Use static Methods in an Interface.	Lecturer	1
String class, StringBuffer class, StringBuilder Class.	Demonstration	2

Unit- III

Learning Outcomes

1. To understand the exception handling
2. To demonstrate the thread concept
3. To learn stream concept

Topic of syllabus covered	Teaching Mode	Hours Required
Fundamentals, Exception types, Uncaught Exceptions, Using try and catch	Lecture	1
Multiple catch Clauses, Nested try Statements, throw, throws, finally.	Demonstration	2
Java's Built-in Exceptions, Creating Your Own Exception Subclasses.	Lecture	1
The Java Threaded Model, The Main Thread, Creating a Thread.	Lecture	2
Creating Multiple Threads, Using isAlive() and join(),	Demonstration	1
Synchronization and Inter thread Communication	Lecturer	2
Suspending, Resuming, Stopping Threads, Obtaining A Thread's State	Demonstration	1
Streams, Byte streams, Character streams, Reading Console Input, Writing Console Output	Lecturer	2
The PrintWriter Class, Reading and Writing Files.	Demonstration	1

Unit- IV

Learning Outcomes

1. To demonstrate the applet and event handling
2. To learn AWT controls

Topic of syllabus covered	Teaching Mode	Hours Required
Applet Basics, Applet Architecture, An Applet Skeleton, Simple Applet Display Methods	Lecture	1
Requesting Repainting, The HTML APPLET Tag, Passing Parameters to Applets.	Demonstration	2
Two Event Handling Mechanisms, The Delegation Event Model	Lecture	1
Event Classes, The KeyEvent Class, Sources of Events, Event Listener Interfaces.	Lecture	2
Using The Delegation Event Model.	Demonstration	1
Adapter Classes Inner Classes.	Lecturer	2
Working with Windows, Graphics and Text,	Demonstration	1
Using AWT Controls	Lecture	2
Layout Managers	Demonstration	1
Menus.	Lecture	1

Unit- V

Learning Outcomes

1. To understand the swing concept
2. To demonstrate JDBC connectivity and network programming

Topic of syllabus covered	Teaching Mode	Hours Required
Introducing Swing, Exploring Swing –Jlabel and ImageIcon, JTextField,	Lecture	1
JTabbedPane, JScrollPane JList, JComboBox.	Demonstration	2
Trees and JTable.	Lecture	1
JDBC connectivity, types of Jdbc Drivers	Lecture	2
connecting to the database, JDBC Statements, JDBC Exceptions	Demonstration	1
Manipulations on the database.	Lecturer	2

Networking Basics, The Networking Classes and Interfaces	Demonstration	1
InetAddress	Lecturer	2
TCP/IP Client sockets	Lecture	1
URL, URL connection	Demonstration	1
TCP/IP sockets Server Sockets	Lecture	2
Datagrams	Lecture	1

Signatures of the Teachers

1.

2.[K.SIVA KUMAR] K.Siva Kumar

3.

Signature of the HOD

Date:23-11-2018

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 212 – Operating Systems

Lesson Plan

Academic Year	2018 – 19
Year & Semester	II Year II Semester
Regulation	R-16
Name of Faculty	Dr.M.V.P. Chandra Sekhara Rao, Dr. R. Lakshmi Tulasi, Dr. Ch. Sudha Sree

Course Objectives:

1. To learn the basics of computer system and operating system overview.
2. To understand the concepts of process and thread management.
3. To know about the concept of process Synchronization and various Deadlock handling techniques.
4. To understand various Memory management techniques
5. To know the concepts of File management and Secondary storage Management.

Course Outcomes:

1. Familiarize with different types of operating systems and services.
2. Familiarize with process management, multithreading.
3. Familiarize with process Synchronization and dead lock handling mechanisms.
4. Familiarize with different memory management mechanisms.
5. Familiarize with Secondary storage management and file management of operating systems.

Unit- I

Learning Outcomes

1. Acquire the knowledge on structure and services of operating system. [CO1]
2. Describe the various features of process, process scheduling and communication. [CO2]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
What Operating Systems Do, Operating-System Structure	Lecture	1	
Operating-System Operations, Process Management	Lecture	1	
Memory Management, Storage Management, Protection and Security	Lecture	1	
Kernel Data Structures	Lecture	1	
Operating-System Services, User and Operating-System Interface	Lecture	1	
System Calls, Types of System Calls	Lecture	2	
Operating-System Structure	Lecture	1	
Process Concept	Lecture	1	
Process Scheduling	Lecture	1	
Operations on Processes	Lecture	1	
Inter Process Communication	Lecture	1	

Unit- II

Learning Outcomes

1. Demonstrate the knowledge on the concept of multithreading. [CO2]
2. Ability to analyze the scheduling algorithms for process management. [CO2]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Overview of Multithreading, Multicore Programming	Lecture	1	
Multithreading Models, Implicit Threading	Lecture	1	
Threading Issues	Lecture	1	
Basic Concepts, Scheduling Criteria	Lecture	1	
Scheduling Algorithms	Lecture	7	
Thread Scheduling	Lecture	1	
Multiple-Processor Scheduling	Lecture	1	
Real-Time CPU Scheduling	Lecture	1	

Unit- III

Learning Outcomes

1. Identify the solutions to critical-section problems. [CO3]
2. Ability to demonstrate the various deadlock handling methods. [CO3]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Background, The Critical-Section Problem	Lecture	1	
Peterson 'solution, Synchronization Hardware	Lecture	1	
Mutex Locks, Semaphores	Lecture	1	
Classic Problems of Synchronization	Lecture	2	
Monitors	Lecture	2	
System Model, Deadlock Characterization, Methods for Handling Deadlocks	Lecture	1	
Deadlock Prevention, Deadlock Avoidance	Lecture	3	
Deadlock Detection, Recovery from Deadlock	Lecture	1	

Unit- IV

Learning Outcomes

1. Ability to illustrate the various memory management techniques such as swapping, paging, segmentation. [CO4]
2. Learn the page replacement algorithms. [CO4]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Background, Swapping	PPT	2	
Contiguous Memory Allocation	PPT	1	
Segmentation,	PPT	1	
Paging	PPT	1	
Structure of Page Table	PPT	1	
Background, Demand Paging	PPT	1	
Page Replacement	Lecture	4	
allocation of frames	PPT	1	
Thrashing	PPT	2	

Unit- V

Learning Outcomes

1. Ability to explain the concept of file management. [CO5]
2. Learn the secondary management methods. [CO5]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
File Concept, Access Methods,	PPT	1	
Directory and Disk Structure	PPT	1	
File-System Mounting, File sharing, Protection	PPT	2	
File-System Structure	PPT	1	
File-System Implementation, Directory Implementation	PPT	1	
Allocation Methods, and Free-Space Management	PPT	2	
Overview of Mass-Storage Structure, Disk Structure	PPT	1	
Disk Scheduling	Lecture	2	
RAID Structure	PPT	1	

Signatures of the Teachers

1.

2.

3.

Signature of the HOD

Date: 25-11-2018

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 301 – Computer Networks

Lesson Plan

Academic Year	2018 - 19
Year & Semester	III Year I Semester
Regulation	R-16
Name of Faculty	Dr. M.V.P. Chandra sekhara Rao / Dr. R. Lakshmi Tulasi / Mr. A. Rami Reddy

LECTURE PLAN FOR THE ACADEMIC YEAR 2018- 2019

Course Objectives:

1. To learn the key concepts of computer networks.
2. To gain knowledge about layered architecture of ISO OSI network reference model and it's functionalities.
3. To understand the principles, key protocols & design issues of TCP/IP reference model.
4. To identify requirements to design a computer network.

Course Outcomes:

1. Distinguish network architectures of ISO OSI and TCP/IP reference models.
2. Discuss the design issues of the layers of the reference models.
3. Know various media & switching techniques used for data transmission.
4. Acquire knowledge of access control, flow control, error control & congestion control techniques used in different layers.
5. Obtain knowledge of various routing protocols.
6. Understand the design and functionality of protocols used for internetworking.
7. Demonstrate knowledge of applications DNS & E-mail.

CO-PO Mapping Table:

	PO1	PO2	PO3
CO 1	2	2	
CO 2	2	2	2
CO 3	2		
CO 4		2	2
CO 5		2	2
CO 6		2	2

CO-PSO Mapping Table:

	PSO1	PSO2	PSO3
CO 1	3		
CO 2	2	2	
CO 3	2		2
CO4	2		
CO5	2		
CO 6	2		3

Unit- I

Learning Outcomes

1. Explain the fundamental concepts OSI and TCP/IP reference models **[CO1]**
2. Discuss the properties of various guided transmission media **[CO3]**
3. Distinguish circuit switching and packet switching. **[CO3]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Chapter1: Introduction Uses of Computer Networks	Lecture	1	
Network Hardware	Lecture	1	
Network Software	Lecture	1	
Reference Models.	Lecture	2	
Chapter 2: Physical Layer			
The Theoretical Basis for Data Communication	Lecture	1	
Guided Transmission Media	Lecture	1	
Digital Subscriber Lines	Lecture	1	
Switching	Lecture	1	

Unit- II

Learning Outcomes

1. **Discuss the various design issues of data Link layer [CO4]**
2. Compare various multiple access protocols for channel allocation problem(CO4)
3. Discuss various Ethernet standards of IEEE802 (CO3)

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Chapter 3: Data Link Layer			
Data Link Layer Design Issues	Lecture	1	
Framing	Lecture, Demonstration	1	
Error Detection and Correction	Lecture, Demonstration	2	
Elementary Data Link Protocols	Lecture, Collaboration	1	
Sliding Window Protocols	Lecture	1	
Chapter4 : The Medium Access Control Sub-layer			
Multiple Access Protocols-ALOHA	Lecture	1	
Carrier Sense Multiple Access Protocols	Lecture	1	
Collision-Free Protocols	Lecture	1	
Limited-Contention Protocols	Lecture	1	
Ethernet	Lecture	2	
Data Link Layer Switching.	Lecture	1	

Unit- III

Learning Outcomes

1. Explain various design issues of network layer (CO2)
2. Analyze various static and dynamic routing algorithms to be used for routing packets (CO5)
3. Compare various congestion control algorithms(CO4)

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Chapter 5: The Network Layer: Network Layer Design Issues	Lecture	1	
Routing Algorithms-Optimality Principle, Shortest Path Algorithm	Lecture, Demonstration	1	
Flooding	Lecture, Demonstration	1	
Distance Vector Routing	Lecture, Demonstration	1	
Link State Routing	Lecture	1	

Hierarchical Routing.	Lecture, Demonstration	1	
Broadcast Routing, Multicast Routing	Lecture, Demonstration	1	
Congestion control algorithms	Lecture	2	
Quality of Service-Application Requirements	Lecture	1	
Traffic Shaping	Lecture	1	
Packet Scheduling	Lecture	1	
Admission Control	Lecture	1	

Unit- IV

Learning Outcomes

1. Understand the design and functionality of protocols used for internetworking (CO6)
2. Compare IPV4.0, IPV6.0 and internet control protocols (CO5)
3. Discuss elements of transport service primitives. (CO4)
4. Explain the congestion control mechanism in transport layer. (CO4)

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Internetworking	Lecture	1	
The Network Layer in the Internet-The IP version 4.0 protocol	Lecture	1	
IP Addresses	Lecture, Flipped Class Room	1	
IP Version 6.0, Internet Control Protocols	Lecture	1	
Label Switching and MPLS	Lecture	1	
Chapter 6: The Transport Service-Services Provided to the Upper Layers	Lecture	1	
Transport Service Primitives	Lecture	1	
Elements of Transport Protocols-Addressing	Lecture	1	
Connection establishment, Connection Release	Lecture	1	
Error Control and Flow Control	Lecture	1	

Congestion Control –Desirable Bandwidth Allocation	Lecture, Demonstration	1	
Regulating the Sending Rate	Lecture	1	

Unit- V

Learning Outcomes

1. Compare various transport layer protocols. (CO6)
2. Discuss the domain name space and electronic mail.(CO7)

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
The Internet Transport Protocols: Introduction to UDP	Lecture	1	
Remote procedure call	Lecture	1	
Real-Time transport protocols	Lecture	1	
Introduction to TCP	Lecture	1	
The TCP Service Model	Lecture	1	
The TCP Protocol, The TCP Segment Header	Lecture	1	
TCP Connection Establishment, TCP Connection Release.	Lecture	1	
Chapter 7: Application Layer-DNS- The Domain Name System	Lecture	2	
Electronic mail	Lecture, Collaboration	1	

Signatures of the Teachers
1.
2.
3. A. Rami Reddy

Signature of the HOD

Date:

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 302 – Web Technologies

Lesson Plan

Academic Year	2018 - 19
Year & Semester	III Year I Semester
Regulation	R-16
Name of Faculty	B.Prasanthi/ N.Hanumantha Rao / Ch.Srinivasa Rao

Unit- I

Learning Outcomes

1. Create static web pages using XHTML, CSS, and JavaScript.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to HTML5,Headings, Linking and Images	Lecture	1	
Special Characters and Horizontal Rules, Lists, Tables and Forms.	Demonstration	1	
Internal Linking and meta Elements	Collaboration		1
New HTML5 Form input types, Input and Data List elements and outocomplete Attribute	Flipped Classroom	1	
Page Structure Elements	Demonstration	1	
Introduction to CSS	Demonstration	1	
CSS types – Inline, Embedded and External style sheets	Flipped Classroom		1
Positioning Elements	Demonstration	1	
Elements Dimensions, Box Model and Text Flow, Media Types and Media Queries	Demonstration	1	
Drop Down Menu and User Style Sheets	Demonstration	1	
Text Shadows ,Rounded corners, Color , Box Shadows	Collaboration		1
Linear Gradients, Radial Gradients	Demonstration	1	
Multiple Background Images, Image borders, Selectors	Demonstration	1	
Transitions and Transformations	Demonstration	1	
Downloading Web fonts, Flexible Box Layout Module, Multicolumn Layout and Media Queries	Demonstration & Collaboration		1

Unit- II

Learning Outcomes

1. Design dynamic WebPages using client side scripting.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Java Script , Obtaining User Inputs	Lecture & Demonstration	1	
Memory Concepts , Arithmetic and Equality and Relational operators	Lecture & Demonstration	1	
Control Statements-1 Introduction, if and if...else selection statements, While Repetition statements	Flipped Classroom		1
Counter ,Sentinel and Nested controlled statements	Lecture & Demonstration	1	
Operators – Assignment , Increment and Decrement operators	Lecture & Demonstration	1	
Control statements-2 Introduction, for Repetition statements with examples	Lecture & Demonstration	1	
switch statement with examples, do...while statement with examples	Lecture & Demonstration	1	
break and continue statement with examples, Logical Operators	Lecture & Demonstration	1	
Introduction to functions using java script	Lecture & Demonstration	1	
Random Number generation and Game of chance examples using java script	Lecture & Demonstration	1	
Scope rules, Global functions , Recursion Vs Iteration	Lecture & Demonstration		1
Arrays in java script introduction, Declaring and allocating arrays with examples	Lecture & Demonstration	1	
Random image generating using arrays, reference and reference parameters, Passing Arrays to functions, sorting , searching with arrays, Multidimensional arrays	Lecture & Demonstration	1	
Introduction to objects in java script, Math object, String object	Lecture & Demonstration	1	
Date object, Boolean object, Number Object and Document Object	Lecture & Demonstration	1	

Unit- V

Learning Outcomes

1. Design Rich Internet Applications with AJAX.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Servlet Life Cycle	Lecture & Demonstration	1	
http servlet with examples	Lecture & Demonstration	1	
Generic servlet with examples	Lecture & Demonstration	1	
Servlet Parameters	Flipped Classroom		2
Handling http Request and Response	Lecture & Demonstration	2	
Cookies	Lecture & Demonstration	1	
Session Tracking Mechanism	Lecture & Demonstration	1	
Ajax Introduction	Lecture & Demonstration		2
RIAs with Ajax	Lecture & Demonstration	1	
History of Ajax	Lecture & Demonstration	1	
Raw Ajax example using XMLHttpRequest object	Lecture & Demonstration	2	

Signatures of the Teachers

1.

2. R. Prasanthi

3. Ch. Srinivasa Rao.

Signature of the HOD

Date: 05/06/2018.

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 303 – Design and Analysis of Algorithms

Lesson Plan

Academic Year	2018 - 19
Year & Semester	III Year I Semester
Regulation	R-16
Name of Faculty	Dr B.VaraPrasad Rao, Ch.Ratna Babu, M.Naveen.

Course Objectives:

1. To use methods for designing efficient algorithms using various data structures.
2. To understand the performance analysis of algorithms.
3. To know the application of mathematical tools in computing to solve fundamental problems.
4. To learn the concepts of classification of algorithms.

Course Outcomes:

1. Compute time and space complexity of algorithms.
2. Deduce the recurrence relations that describe the time complexity of recursively-defined algorithms, and solve recurrence relations.
3. Design algorithms using divide and conquer, greedy, and dynamic programming strategies and recite algorithms that employ these strategies.
4. Design algorithms using backtracking and branch and bound strategies and recite algorithms that employ these strategies.
5. Know the fundamental concepts of classification of algorithms.

Unit- I

Learning Outcomes

1. To learn various notations used for analysis of algorithms and Discuss complexities of algorithms.
2. Investigate Basic Technique of Designing Algorithms using Divide and Conquer approach.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction: Algorithm and various areas of algorithms	Lecture	1	
Algorithm specification	Lecture	1	
Performance analysis	Lecture	1	
Divide and Conquer- The general method.	Lecture	1	

Running time calculation of Divide and Conquer technique	Lecture	1	
Finding maximum and Minimum	Lecture	1	
Merge sort	Lecture	1	
Solving Example on Merge Sort and Quick Sort	Tutorial		1
Quick sort	Lecture	1	
Strassen's matrix multiplication.	Lecture	1	
Finding Time complexity and solving problem for Strassen Matrix Multiplication.	Tutorial		1

Unit- II

Learning Outcomes

1. Familiarize the Design issues of Greedy Method for solving problems.
2. Solving various problems using Greedy Method and proving its corectness.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
The Greedy Method: The general method	Lecture	1	
Knapsack Problem	Lecture	1	
Knapsack Algorithm and its Complexity	Lecture	1	
Tree vertex splitting	Lecture	1	
TVS Algorithm and its Complexity	Lecture	1	
Job sequencing with deadlines	Lecture	1	
JSD Algorithm and its Complexity	Lecture	1	
Kruskal's Algorithm	Lecture	1	
Finding Disjoint sets	Lecture	1	
Prim's Algorithm	Lecture	1	
Problems on Prims Algortihm	Lecture	1	
Single source shortest paths	Lecture	1	

Unit- III

Learning Outcomes

1. Understand the use of Dynamic programming approach for designing algorithms.
2. Solve various complex problems using Dynamic Programming technique.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T

Dynamic Programming: The General method, ,.	Lecture	1	
Multi-stage graph:Forward Approach	Lecture	1	
Multi-stage graph:BackwardApproach	Lecture		
All pairs shortest path	Lecture	1	
Solving APSP problems	Tutorial		1
Singlesource shortest path	Lecture	1	
Solving Single source Shortest path problems	Tutorial		1
Optimal Binary search trees	Lecture	1	
Finding OBST for given Identifiers	Tutorial		1
String Editing	Lecture	1	
Problems on String Editing	Tutorial		1
0/1 Knapsack	Lecture	1	
Reliability design	Lecture	1	
Solving Problems on Reliability Design	Tutorial		1
The traveling salesman problem.	Lecture	1	
Solving Problems on TSP.	Tutorial		1

Unit- IV

Learning Outcomes

1. Relate the graphs with real world problems and traversing graphs.
2. Learn the important technique of solving various problems with Backtracking Approach.

Topic of syllabus covered	**Teaching Mode**	**Hours Required**	
		L	**T**
Traversal techniques for graphs	Lecture	1	
Examples on BFS and DFS	Tutotial		1
Finding Connected components of Graph	Lecture	1	
Articulation points and Biconnected components	Lecture	1	
Backtracking:General Method	Lecture	1	
State Space Search tree	Lecture	1	
N-Queens Problem	Lecture	1	
Graph coloring	Lecture	1	
Hamiltonian cycle	Lecture	1	
Solving 0/1 Knapsack Problem using Backtracking	Lecture	1	

Unit- V

Learning Outcomes

1. Able to Differentiate deterministic and non deterministic algorithms
2. Categorize algorithms as NP-Hard, NP-complete

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Branch and Bound: The general method	Lecture	1	
0/1 Knapsack problem	Lecture	1	
Traveling salesperson.	Lecture	1	
Solving TSP Problems	Tutorial		1
NP-Hard Problems	Lecture	1	
NP-Complete Problems	Lecture	1	
Satisfiabilty problem	Lecture	1	
Discussion on Cooks Theorem	Lecture	1	

Signatures of the Teachers

1.

2.

3.

Signature of the HOD

Date:

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS-304 UNIX PROGRAMMING

Lesson Plan

Academic Year	2018 - 19
Year & Semester	III Year I Semester
Regulation	R-16
Name of Faculty	Smt.K Venkata Ramana/ Ch Vijaya Madhavi Lakshmi /B Manasa

Course Objectives:

1. To understand UNIX Architecture and its key features.
2. To study different UNIX commands and AWK programming.
3. To study functions of UNIX shells and the concepts of Bourn shell programming.
4. To learn file and process management system calls and signal handling mechanism in UNIX.
5. To understand IPC mechanisms like pipes, sockets, shared memory, and semaphores and UNIX internals.

Course Outcomes:

1. Describe shell commands and utilities.
2. Write shell scripts for solving problems.
3. Use system calls for system programming.
4. Manipulate the file system using system calls.
5. Describe communication between processes.

CO – PO and PSO Mapping Table

	PO1	PO2	PO3	PO4	PSO1	PSO2
CO 1	2	2	2		2	3
CO 2		2	2		2	3
CO 3		2	2	2	3	3
CO 4		2	2	2	2	3
CO 5				2	3	3

Unit- I

Learning Outcomes

1. Explain the Features, History and basic commands of UNIX CO1
2. Demonstrate the basic set of utilities and their applications. CO1

Topic of syllabus covered	Teaching Mode	Hours Required
Unix architecture, Features	LECTURE	1
Vi editor	DEMONSTRATION	1
pwd, mkdir,cd,rmdir	LECTURE	1
ls ,mv,cp,rm	LECTURE	2
cat, more, pg , head, tail, sort	LECTURE	2
grep, egrep, fgrep, cut, paste	LECTURE	2
chgrp, chmod, chown, find	LECTURE	1
ln, unlink,nl,tee,uniq	LECTURE	2
Join,diff,cmp,tr	LECTURE	1
sed	LECTURE	3
awk programs, accessing individual fields, Begin and end, operators, variables, control structures	LECTURE	3
extended regular expressions, condition Ranges, field separators, Build – in functions	DEMONSTRATION	2

Unit- II

Learning Outcomes

1. Demonstrate the use of the UNIX Shell for Command Processing CO2
2. Implement the Basic Bourne Shell Scripts CO2

Topic of syllabus covered	Teaching Mode	Hours Required
Introduction, shell functionality	LECTURE	1
Built – in commands, meta characters, input/output redirection,	LECTURE	1
filename substitution, pipes, command substitution, sequences, grouping commands	LECTURE	1
Background processing, scripts, subshells, shell variables, Quoting	DEMONSTRATION	1
Bourne Shell: Working with variables, Arithmetic,	LECTURE	1

conditional expressions		
control structures	LECTURE	2
positional parameters ,passing command line arguments, shell programs	LECTURE	2
functions, and arrays	DEMONSTRATION	2

Unit- III

Learning Outcomes

1. Implement operations on file system using system calls. CO3
2. Describe the system calls associated with process management and signals. CO3

Topic of syllabus covered	Teaching Mode	Hours Required
Introduction to system calls and file management, Regular file management system calls	LECTURE	1
open( ), read( ), write( ), lseek( ), Close()	LECTURE	1
unlink( ),stat( ), getdents( ).	LECTURE	1
chown( ) and fchown( ), chmod( ) and fchmod()	LECTURE	1
dup( ) and dup2( ), fcntl()	LECTURE	1
ioctl( ), link( ), mknod( ), sync( ), truncate( ) and ftruncate( ).	LECTURE	1
Inroduction, Creating a new process – fork( ),orphan processes	DEMONSTRATION	1
terminating a process – exit( ), zombie processes, waiting for a child – wait( ),	LECTURE	1
Differentiating a process – exec( )	LECTURE	1
changing directories – chdir( ), changing priorities- nice( ),	LECTURE	1
Accessing user and Group ID's.	LECTURE	1
Introduction, A list of signals, terminal signals, Requesting an Alarm signal – alarm( )	LECTURE	1
handling signals – signal( ), protecting critical code and	LECTURE	1

chaining interrupt handlers		
Sending signals – kill ( ), Death of children, suspending and Resuming processes, process Group's and control terminals.	LECTURE	2

Unit- IV

Learning Outcomes

1. Demonstrate Inter Process Communication. CO4
2. Apply the concepts of IPC for synchronization. CO4

Topic of syllabus covered	Teaching Mode	Hours Required
Pipes	LECTURE	2
Sockets	LECTURE	2
Shared memory	DEMONSTRATION	2
Semaphores	LECTURE	2

Unit- V

Learning Outcomes

1. Demonstrate the process and memory management in UNIX. CO5
2. Interpret the kernel sub systems functions. CO5

Topic of syllabus covered	Teaching Mode	Hours Required
Kernel Basics	LECTURE	1
File System	LECTURE	1
Process Management	LECTURE	2
Memory Management	DEMONSTRATION	3
Input/Output	LECTURE	2

M. S...

Signatures of the Teachers
1. K. Venkata Ramana
2. B. Manasa
3. C.V.M. Rao

Signature of the HOD

Date:08/06/2018

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 305 – Compiler Design

Lesson Plan

Academic Year	2018 - 19
Year & Semester	III Year I Semester
Regulation	R-16
Name of Faculty	Dr.N.Venkateswara Rao/ K.Siva Kumar / P.Rama Krishna

Course Objectives:

1. To understand different phases of compiler and lexical analyzer.
2. To study about parsing techniques and syntax direct translation schemes.
3. To know about run-Time storage allocations strategies and Symbol Table implementation.
4. To understand different intermediate code forms and code generation.

Course Outcomes:

1. Able to familiarize with phases of compiler and Lexical analysis.
2. Implement different Parsers.
3. Create symbol tables and specify various intermediate code forms for compiler construction.
4. Design code generator through optimized intermediate code forms.
5. Specify the various code optimization methods and runtime allocation strategies.

Unit- I

Learning Outcomes

1. To describe the design of a compiler including its phases and components. [CO 1]
2. To make the lexical analysis of program.[CO 1]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Compiling:	Flipped Class room	1	
Compilers - Analysis of the source program	Lecture & Demonstration	1	
Phases of a compiler	Lecture & Demonstration		1
Cousins of the compiler	Lecture & Demonstration	1	
Grouping of Phases	Lecture & Demonstration	1	
Compiler construction tools	Lecture & Demonstration	1	
Lexical Analysis: Role of Lexical Analyzer	Lecture & Demonstration	1	

Input Buffering	Lecture & Demonstration	1	
Specification of Tokens	Lecture & Demonstration	1	
Recognition of tokens	Lecture & Demonstration	1	
a language for specifying lexical analyzers	Lecture & Demonstration	1	
Design of a lexical analyzer generator	Lecture & Demonstration		1
Total No of Classes :		12	

Unit- II

Learning Outcomes

1. Write a scanner, parser, and semantic analyser without the aid of automatic generators. [CO 2]
2. To describe the role of the compiler in ensuring the security, privacy and integrity of data. [CO 2]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Syntax Analysis:	Flipped Class room	1	
Role of the parser	Lecture & Demonstration	1	
Top Down parsing	Lecture & Demonstration		1
Recursive Descent Parsing	Lecture & Demonstration	1	
Predictive Parsing	Lecture & Demonstration	1	
LL(1) Parser	Lecture & Demonstration	1	
Shift Reduce Parsing	Lecture & Demonstration	1	
Operator Precedent Parsing	Lecture & Demonstration	1	
Bottom-up parsing	Lecture & Demonstration		1
LR Parsers	Lecture & Demonstration	1	
SLR Parser	Lecture & Demonstration	1	
Canonical LR Parser	Lecture & Demonstration	1	
LALR Parser	Lecture & Demonstration	1	
Yacc Tool	Lecture & Demonstration	1	
Total No of Classes:		14	

Unit- III

Learning Outcomes

1. Describe the techniques for intermediate code representation. [CO 3]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Symbol Tables:	Flipped Classroom	1	
Symbol table entries	Lecture & Demonstration	1	
Data structures for symbol tables implementation	Lecture & Demonstration		1
representing scope information	Lecture & Demonstration	1	
Syntax Directed Translation:	Lecture & Demonstration	1	
Syntax Directed definition	Lecture & Demonstration	1	
Construction of syntax trees.	Lecture & Demonstration		1
Intermediate Code Generation:	Lecture & Demonstration	1	
Intermediate languages	Lecture & Demonstration	1	
SDT scheme for Datatypes	Lecture & Demonstration	1	
SDT scheme for Assignment Statements	Lecture & Demonstration	1	
SDT scheme for Case Statements.	Lecture & Demonstration	1	
Total No of Classes		12	

Unit- IV

Learning Outcomes

1. Design the structures and support required for compiling advanced language features.[CO 4]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Back patching:	Lecture & Demonstration	1	
SDT scheme for Boolean Expressions	Lecture & Demonstration	1	
SDT scheme for Flow of control constructs	Lecture & Demonstration		1
SDT scheme for Procedure calls.	Lecture & Demonstration	1	
Code Generation:	Lecture & Demonstration	1	
Issues in the design of code generator	Lecture & Demonstration	1	
The target machine	Lecture & Demonstration	1	
Runtime Storage management	Lecture & Demonstration	1	
Basic Blocks and Flow Graphs	Flipped Classroom	1	

Next-use Information	Lecture & Demonstration	1	
A simple Code generator	Lecture & Demonstration	1	
DAG representation of Basic Blocks.	Flipped Classroom		1
Total No of Classes		12	

Unit- V

Learning Outcomes

1. Describe the techniques for optimization code representation. [CO 4] [CO 5]
2. Turn fully processed source code for a novel language into machine code for a novel computer. [CO 5]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Code Optimization:	Lecture & Demonstration	1	
Introduction	Lecture & Demonstration	1	
Principal Sources of Optimization	Lecture & Demonstration	1	
Optimization of basic Blocks	Lecture & Demonstration		1
Introduction to Global Data Flow Analysis	Flipped Classroom	1	
Peephole Optimization.	Lecture & Demonstration	1	
Run Time Environments:	Lecture & Demonstration	1	
Source Language issues	Lecture & Demonstration	1	
Storage Organization	Lecture & Demonstration	1	
Storage Allocation strategies	Lecture & Demonstration	1	
Static allocation scheme	Lecture & Demonstration	1	
Stack allocation scheme, Heap allocation scheme	Lecture & Demonstration	1	
Access to non-local names	Lecture & Demonstration	1	
Parameter Passing methods	Lecture & Demonstration		1
Total No of Classes		14	

Signatures of the Teachers

1. N. Vinay

2. K. Srikumar

3. P. Revathi

Signature of the HOD

Date: 08-06-2018

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 306 – Software Engineering

Lesson Plan

Academic Year	2018 - 19
Year & Semester	III Year I Semester
Regulation	R-16
Name of Faculty	R.MABUBASHA /P.RAMA KRISHNA /N.ZAREENA

Course Objectives:

1. To understand different software processes or process models.
2. To understand and document software requirements for a client.
3. To design in the principled choice of software architectures and its components.
4. To understand good code practices.
5. To understand various qulity assurence techniques, including unit testing, functional testing and automated analysis tools.

Course Outcomes:

1. Recognize the importance of software engineering processes and process models.
2. Identify Software Requirements Specification (SRS) needed to build a working software component.
3. Design a Software model and Architecture for a given problem.
4. Distinguish various testing strategies and Software quality.
5. Develop software components as per the requirements of various stakeholders for a software project.

CO - PO Mapping Table

	PO 1	PO 2	PO3	P10
CO 1	2	2		
CO 2	2	3	2	3
CO 3	2	2	3	2
CO 4	3	2	3	
CO 5	2	2	2	

CO - PSO Mapping Table

	PSO 1	PSO 2	PSO 3
CO 1	3		2
CO 2	3		2
CO 3	3	2	2
CO 4	3	3	2
CO 5	3	3	2

Unit- I

Learning Outcomes

1. Identify the role of the software in today's world across a few significant domains related to day to day life. [co1]
2. Discuss different software models. [co1]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Software Engineering, The nature Software.	Lecture	1	
The Software Process, Software Engineering Prac Software Myths.	Lecture	1	
A Generic process model, Process Assessment an Improvement.	Collaboration	1	
Prescriptive Process Models.	Flipped Classroom		1
Specialized Process models.	Demonstration	1	
The Unified Process, Personal and Team Process	Demonstration	1	
What Is Agility? What Is an Agile Process?, Extrer Programming(XP)	Lecture	2	
What Is Agility? Other Agile process models	Lecture	3	
A Tool Set for the Agile Process.	Flipped Classroom		1

Unit- II

Learning Outcomes

1. Classify the requirement into functional and non-functional requirements. [co2]

2. Ability to apply Analysis Model. [co2]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Modeling.	Lecture	1	
Software Engineering Knowledge, Core Principles, that guide each framework activity.	Lecture	1	
Introduction to Requirements Engineering	Lecture	1	
Requirements Engineering, Establishing the Grou Eliciting requirements	Lecture		1
Introduction Usecase diagrams, Developing Use C	Lecture	2	
Understanding Requirements: Building the rec Model, Negotiating Requirements, Validating Requ	Lecture	1	
Requirements Modeling: Scenarios, Informa Analysis Classes	Demonstration	1	
Requirement Analysis, Scenario-based Model Models That Supplement the Use Case	Lecture	2	
Data Modeling Concepts	Lecture	1	
Class Based Modeling.	Flipped Classroom		1

Unit- III

Learning Outcomes

1. An ability to apply design principles and design models of software systems of varying complexity. [co3]
2. Understand different software architectural styles and Process frame work. [co3]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Flow Based Modeling.	Lecture	1	
Behavior Based Modeling	Lecture	2	
Requirements Modeling for WebApps.	Lecture	2	
Introduction to Design Concepts.	Lecture	1	

Design within the Context of Software Engineerin Design Process, Design Concepts, The Design Mod	Lecture	1	
Introduction to Architectural Design	Lecture	1	
Architectural Styles.	Demonstration		2
Assessing Alternative Architectural Designs	Lecture	1	
Architecture Mapping Using Data Flow.	Lecture	1	

Unit- IV

Learning Outcomes

1. An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs. [co4]
2. Evaluate systems in terms of general quality attributes and possible trade-offs presented within the given problem. [co5]

Topic of syllabus covered	**Teaching Mode**	**Hours Required**	
		L	**T**
Introduction toComponent-Level Design	Lecture	1	
Designing Class-Based Components, Conducting Component-Level Design	Lecture	1	
Component-level Design for WebApps, Designing Traditional Components	Lecture	1	
Component Based Development	Lecture	2	
What is Quality? Software Quality, the Software Quality Dilemma, Achieving Software Quality.	Lecture	2	
A Strategic Approach to Software Testing, Strategic Issues, Test Strategies for Conventional Software	Demonstration		2
Test Strategies for Object-Oriented Software	Lecture	1	
Test Strategies for WebApps Validation Testing	Lecture	1	
System Testing, The Art of Debugging	Lecture	1	

Unit- V

Learning Outcomes

1. Implement the functional testing technique. [co4]
2. Implement the structural testing techniques. [co4]
3. Understand process metrics and product metrics [co5]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Software testing Fundamentals, Internal and External Views of Testing	Lecture	1	
White-Box Testing, Basis Path Testing, Control Structure Testing	Lecture	1	
Black-Box Testing	Lecture	1	
Model-Based Testing	Lecture	1	
Testing for Specialized Environments	Lecture	1	
Patterns for Software Testing.	Lecture	1	
Metrics in the process and Project Domains	Demonstration		1
Software Measurements, Metrics for Software Quality,	Lecture	1	
Integrating Metrics within the Software Process, Metrics for small Organizations, Establishing a Software Metrics Program	Demonstration		1
Observations on Estimation, The Project Planning Process, Software Scope and Feasibility, Resources, Software Project Estimation	Lecture	1	
Decomposition Techniques, Empirical Estimation Models, Estimation for Object-Oriented Projects	Lecture	1	
Specialized Estimation Techniques, the Make/Buy Decision.	Lecture	1	

Signatures of the Teachers

1. T. M. Barma
2. P Preetha
3. Zareen

Signature of the HOD

Date:9/6/2018

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 307 – Network Programming

Lesson Plan

Academic Year	2018 - 19
Year & Semester	III Year II Semester
Regulation	R-16
Name of Faculty	Ms. K. Venkata Ramana/ Ms. S J R K Padminivalli V /Ms. B Prasanthi

Course Objectives:

1. To understand client/server programming design issues and protocols.
2. To know about elementary TCP/UDP system calls.
3. To learn the translation of the DNS name to IP address and vice versa.
4. To understand the performance of server process using threads
5. To know TCP client/server design alternatives.

Course Outcomes

1. Explain the basics of network programming.
2. Implement client/server applications using elementary socket functions.
3. Develop concurrent client/server programs using multiplexing and threads.
4. Daemonize various client/server processes.
5. Compare different TCP client/server design alternatives.

CO-PO-PSO Mapping

	PO1	PO2	PO3	PO4	PSO1	PSO2
CO1	2				2	
CO2		3	3		3	3
CO3		3	3	2	3	3
CO4		3	3	2	2	3
CO5		2	2	2	2	3

Unit- I

Learning Outcomes

1. Explain the working of Internetwork programming. **CO1**
2. Discuss different types of connections and their properties. **CO1**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
A simple Daytime client	Collaboration		1
Protocol independence, Error Handling	Lecture	1	
A Simple Daytime Server	Collaboration		1

OSI model, Unix Standards, 64 bit architectures	Lecture	1	
Introduction, User datagram Protocol (UDP)	Lecture	1	
Transmission Control Protocol (TCP), Stream Control Transmission Protocol (SCTP)	Lecture	1	
TCP Connection Establishment and Termination, TIME_WAIT State	Lecture	1	
SCTP association Establishment and Termination	Lecture	1	
Port Numbers, TCP Port Numbers and Concurrent Servers	Lecture	1	
Buffer Sizes and Limitations, Standard Internet Services, Protocol Usage	Lecture	1	

Unit- II

Learning Outcomes

1. Differentiate socket address, port address and IP address . **CO2**
2. Write programs using functions related to sockets. **CO2**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction, Socket Address structures	Lecture	1	
Value-Result Arguments, Byte Ordering Functions	Lecture	1	
inet_aton, inet_addr, inet_ntoa Functions, inet_pton and inet_ntop Functions	Lecture	1	
sock_ntop and Related Functions	Lecture	1	
Introduction, socket Function	Lecture	1	
connect Function, bind function	Lecture	1	
listen function, accept Function	Lecture	1	
fork and exec Functions	Lecture	1	
Concurrent Servers	Collaboration		1
close Function, getsockname and getpeername Functions	Lecture	1	

Unit- III

Learning Outcomes

1. Identify different error conditions during the connection establishment and usage. **CO2**
2. Differentiate various I/O multiplexing techniques . **CO3**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction, TCP Echo Server: main Function, TCP Echo Server: str_echo Function	Demonstration	1	
TCP Echo Client: main Function, TCP Echo Client: str_cli Function	Demonstration	1	
Normal Startup, Normal Termination	Lecture	1	
POSIX Signal Handling, Handling SIGCHLD Signals	Lecture	1	
wait and waitpid Functions, Connection Abort before accept Returns	Demonstration	1	
Termination of Server Process, SIGPIPE Signal, Crashing of Server Host, Crashing and rebooting of Server Host	Lecture	1	
Introduction, I/O Models	Lecture	1	
select Function, str_cli Function	Collaboration		1
Batch Input and Buffering, shutdown Function, str_cli Function	Lecture	1	
TCP Echo Server, pselect Function	Collaboration		1
poll Function, TCP Echo Server	Collaboration		1

Unit- IV

Learning Outcomes

1. Identify the connectionless communication and its problems. **CO2**
2. Discuss the properties of daemons and write daemon applications. **CO4**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction, recvfrom and sendto Functions	Lecture	1	
UDP Echo Server: main Function, UDP Echo Server:dg_echo Function	Collaboration		1
UDP Echo Client: main Function, UDP Echo Client:dg_cli	Collaboration		1

Function,			
Lost Datagrams, Verifying Received Response	Lecture	1	
Server Not Running, Summary of UDP Example	Lecture	1	
connect Function with UDP, dg_cli Function (Revisited)	Lecture	1	
Lack of Flow Control with UDP	Lecture	1	
Determining Outgoing Interface with UDP	Lecture	1	
TCP and UDP echo Server Using select	Collaboration		1
Introduction, syslogd Daemon, syslog Function	Lecture	1	
daemon_init Function, inetd Daemon	Collaboration		1

Unit- V

Learning Outcomes

1. Identify the advantages and usage of threads in network programming. **CO3**
2. Differentiate between various types of servers and their applications. **CO5**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction, Basic Thread Functions: Creation and Termination	Lecture	1	
str_cli Function Using Threads ,TCP Echo Server Using Threads	Demonstration	1	
Thread-Specific Data, Web Client and Simultaneous Connections	Lecture	1	
Mutexes: Mutual Exclusion, Condition Variables	Lecture	1	
Web Client and Simultaneous Connections	Demonstration	1	
Introduction, TCP Client Alternatives	Lecture	1	
TCP Test Client, TCP Iterative Server, TCP Concurrent Server	Lecture	1	
One Child per Client, TCP Preforked Server	Lecture	1	
TCP Preforked Server No Locking Around accept, TCP Preforked Server File Locking Around accept ,	Demonstration	1	

TCP Preforked Server Thread Locking Around accept			
TCP Preforked Server Descriptor Passing, TCP Concurrent Server, One Thread per Client	Demonstration	1	
TCP Prethreaded Server per-Thread accept, TCP Prethreaded Server Main Thread accept	Demonstration	1	

Signatures of the Teachers
1. V. S. S. R. K. Padmini Valli
2. V. Venkata Ramana.
3. B. Prasanthi.

Signature of the HOD

Date: 24-11-2018

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 308 – Data Engineering

Lesson Plan

Academic Year	2018 - 19
Year & Semester	III Year II Semester
Regulation	R-16
Name of Faculty	CH.Srinivasa Rao / G.S.Raghavendra / N.Zareena

LECTURE PLAN FOR THE ACADEMIC YEAR 2018- 2019

Course Objectives:

1. To learn the basics of data warehousing and mining.
2. To learn the importance of data pre-processing in data analysis.
3. To learn various data mining techniques.

Course Outcomes:

1. Explain the fundamental concepts of data warehousing and mining.
2. Extract association rules from transactional databases.
3. Demonstrate different classification techniques.
4. Apply various clustering and outlier detection techniques.

CO-PO Mapping Table:

	PO1	PO2	PO3	PO4
CO 1	2	3	3	
CO 2				3
CO 3	2			3
CO 4	2			3

CO-PSO Mapping Table:

	PSO1	PSO2	PSO3
CO 1	3		3
CO 2	3	2	2
CO 3	3	2	2
CO 4	3	2	2

Unit- I

Learning Outcomes

1. Apply fundamental concepts for the construction of Data Warehouse.**[CO1]**
2. Analyze about the operational database management and data warehouse.**[CO1]**
3. Apply different types of OLAP operations. **[CO1]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Data Warehouse: Basic Concepts	Lecture, Presentation	1	
Data Warehouse Modeling: Data Cube and OLAP	Lecture,Demonstration	2	
Data Warehouse Design and Usage	Lecture, Demonstration		1
Data Warehouse Implementation	Lecture, Demonstration	2	
Data Preprocessing : Data Cleaning	Lecture, Flipped class room	1	
Data Integration	Lecture	1	
Data Reduction	Lecture, Flipped class room	1	
Data Transformation and Data Discretization	Lecture, Flipped class room		2

Unit- II

Learning Outcomes

1. Understand data mining principles and techniques. **[CO1]**
2. Discover how to gather and analyze large sets of data to gain useful business understanding. **[CO1]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Getting to know Data : Data Objects and Attribute Types	Lecture, Flipped class room	2	
Basic Statistical Descriptions of Data, Measuring Data Similarity and Dissimilarity	Lecture, Flipped class room		2
Data Mining :Introduction : What is Data Mining, Kinds of Data	Lecture	1	
Kinds of Patters	Lecture	2	

Technologies used	Lecture	1	
Major issues in Data Mining	Lecture	2	

Unit- III

Learning Outcomes

1. Analyse interesting patterns from large amounts of data and extract patterns to solve problems , make predictions of outcomes.**[CO2]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Mining Frequent Patterns, Associations, and Correlations :Basic concepts	Lecture	1	
Frequent Item Set Mining Method - Apriori	Lecture, Demonstration		2
Generating Association Rules	Lecture		1
Improving the efficiency of Apriori	Lecture	1	
Frequent Item Set Mining Method – FP Growth	Lecture	1	
Frequent Item Set Mining Method – Vertical Data Format	Lecture	1	
Advanced Pattern Mining – Mining Multilevel Associations	Lecture	1	
Advanced Pattern Mining – Mining Multidimensional Associations	Lecture	1	
Advanced Pattern Mining- Mining Quantitative Association Rules	Lecture		1

Unit- IV

Learning Outcomes

1. Discover how to produce a quantitative analysis report with the necessary information to make decisions.**[CO3]**
2. Evaluate exploratory analysis of the data to be used for mining. **[CO3]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Classification : Basic Concepts- Decision Tree Induction	Lecture	1	

Bayes Classification methods	Lecture		1
Rule Based Classification	Lecture	1	
Model Evaluation and Selection	Lecture	1	
Techniques to improve classification accuracy	Lecture		1
Bayesian belief Networks	Lecture, Demonstration	1	
Classification by back-propagation	Lecture, Demonstration	1	
Classification by support vector machines	Lecture, Demonstration	1	
Lazy Learners	Lecture	1	
Other Classification methods	Lecture	1	

Unit- V

Learning Outcomes

1. Prepare the Clustering of high dimensional data for better organization the data.**[CO4]**
2. Analyze Strengths and Weakness of clustering. **[CO4]**
3. Understand and detect Outliers in Data. **[CO4]**

Topic of syllabus covered	**Teaching Mode**	**Hours Required**	
		L	**T**
Cluster Analysis : Introduction	Lecture, Demonstration	1	
Partitioning Methods	Lecture	2	
Hierarchical Methods	Lecture	1	
Density Based Methods- DBSCAN	Lecture, Demonstration		1
Grid Based Methods – STING	Lecture, Demonstration	1	
Outliers and Outliers analysis	Lecture, Demonstration		1
Outlier Detection Methods	Lecture, Demonstration	1	
Statistical Approaches	Lecture		1
Proximity based Approaches	Lecture	1	

Signatures of the Teachers
1. Ch. Srinivasa Rao
2.
3.

Signature of the HOD

Date: 23/11/18

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 309 – Object Oriented Analysis and Design

Lesson Plan

Academic Year	2018 - 19
Year & Semester	III Year II Semester
Regulation	R-16
Name of Faculty	R.Mabu Basha/ P.Rama Krishna/ N.Zareena

Course Objectives:

1. To learn the fundamental concepts of object-oriented software development and UML Notations.
2. To understand the importance of UML diagrams using Object Oriented Analysis and Design concepts.
3. To study the principles and practices to draw UML diagrams for an information system.
4. To Know Design patterns for object oriented software development.
5. To learn different object oriented project management approaches and implementation strategies.

Course Outcomes:

1. Ability to construct the requirements model for an Information system.
2. Understand the behavioral model and specify the dynamic behavior of the system.
3. Capability to specify the control and operation specifications of an information system.
4. Knowledge to design and model a system using design patterns.
5. Implement and manage a software project using Object Oriented modeling concepts.

CO-PO Mapping Table

	PO 1	PO 2	PO3	PO4	PO10
CO 1	2	3	3		
CO 2	2	3	3		3
CO 3	2	3	3	3	
CO 4	2	2	3		3
CO 5	2	2	2		3

Unit- I

Learning Outcomes

1. Demonstrate an in-depth understanding of Object Oriented paradigm and concepts. CO1
2. Ability to analyse and model software specifications. CO1

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction , Information systems in practice, General systems theory, Information and Information systems, Strategies for success	Lecture	1	
Problems in Information systems development	Demonstration	1	
Avoiding the problems, principles of modelling	Demonstration	1	
Definition of UML, Conceptual model of UML.	Demonstration	1	
Models and diagrams,Drawing activity diagrams	Collaboration		1
Unified Software Development Process	Demonstration	1	
User Requirements, Fact Finding Techniques	Collaboration		1
User Involvement, Documenting requirements, Use cases	Demonstration	1	
Requirements capture and modelling	Demonstration	1	
	Total	**9**	

Unit- II

Learning Outcomes

1. Understand object oriented software development techniques from requirements gathering to implementation. CO2
2. Analyse application scenarios and design software systems using Object oriented analysis and design CO3

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
What must a requirements model do?, Use case realization	Lecture & Demonstration	1	
Class Diagram, Drawing class diagram	Lecture & Demonstration	1	

CRC Cards, Assembling the Analysis class diagram	Lecture		1
Component based development	Lecture & Demonstration	1	
Adding further structure, Software development patterns	Lecture & Demonstration	1	
Object interaction and collaboration	Lecture & Demonstration	1	
Sequence diagrams	Lecture & Demonstration	1	
Collaboration diagrams, Model Consistency	Lecture & Demonstration	1	
	Total	**8**	

Unit- III

Learning Outcomes

1. Analyse application scenarios and design software systems using Object oriented analysis and design. CO3
2. Understand the object-oriented approach to analysing and designing systems and software solutions. CO4

Topic of syllabus covered	**Teaching Mode**	**Hours Required**	
		L	**T**
The role of operation specifications, Contracts, describing operation logic	Lecture & Demonstration	1	
Object Constraint Language	Lecture & Demonstration	1	
Creating an operation specification	Lecture & Demonstration		1
States and events	Lecture & Demonstration	1	
Basic Notations, Further notations	Lecture & Demonstration	1	
Preparing a state chart	Lecture & Demonstration	1	
State chart diagrams, Consistency checking, Quality guidelines	Lecture & Demonstration		1
How is Design Different from Analysis	Lecture & Demonstration	1	
Logical, physical, system and detailed design	Lecture & Demonstration	1	
Qualities and objectives of analysis and design	Lecture & Demonstration	1	

Measurable objectives in design, Planning for design	Lecture & Demonstration		1
	Total	**11**	

Unit- IV

Learning Outcomes

1. Ability to Employ the Unified Modelling Language notations to create effective and efficient system designs. CO4
2. Critically evaluate the use of design patterns in the global context of software development. CO4

Topic of syllabus covered	**Teaching Mode**	**Hours Required**	
		L	**T**
Major elements of System Design	Lecture & Demonstration	1	
Software Architecture	Lecture & Demonstration	1	
Concurrency and processor allocation, DBMS Issues, Development Strategies	Lecture & Demonstration	1	
Prioritizing design Trade off's , Design for implementation	Lecture & Demonstration	1	
Class specification, Interfaces, Criteria for Good design, Designing Associations	Lecture & Demonstration	1	
Integrity constraints, Designing Operations	Lecture & Demonstration		2
Normalization, software development patterns	Flipped Classroom	1	
Documenting Patterns, Pattern Templates, How to use design patterns	Lecture & Demonstration	1	
Benefits and Dangers of Using Patterns	Lecture	1	
	Total	**10**	

Unit- V

Learning Outcomes

1. Apply suitable industrial approaches to the implementation of a software system using Object Oriented principles. CO5
2. Ability to apply different implementation and resource allocation strategies for OO projects. CO5

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
The Architecture of the Presentation Layer	Lecture & Demonstration	1	
Prototyping the user interface, Designing classes	Lecture & Demonstration	1	
Designing interactions with sequence diagrams , The class diagram revisited	Lecture & Demonstration		1
User interface design patterns, Modelling the interface using state charts	Lecture & Demonstration	1	
Software Implementation	Lecture & Demonstration	1	
Component diagrams	Lecture & Demonstration	1	
Deployment diagrams	Lecture & Demonstration		1
Software testing, Data Conversion, User Documentation and Testing	Lecture & Demonstration	1	
Implementation strategies, Review and maintenance	Lecture & Demonstration	1	
Resource Allocation and Planning, Managing Iteration.	Lecture & Demonstration	1	
Dynamic systems Development Method, Extreme programming	Lecture	1	
	Total	**11**	

Signatures of the Teachers

Signature of the HOD

1.

2.

3.

Date: 23-11-2018

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING
CS 310 – Cryptography & Network Security
Lesson Plan

Academic Year	2018 - 19
Year & Semester	III Year II Semester
Regulation	R-16
Name of Faculty	Smt.K. Venkata Ramana / Smt.K. Aravinda / Smt.S.J.R.K. Padmini Valli. V

Course Objectives:

1. To understand network security attacks, Classical and symmetric encryption schemes.
2. To know about the concepts of public key encryption and key management schemes.
3. To learn authentication and Secure hash functions.
4. To understand network security applications like Kerberos, PGP and IP security.
5. To use web security and system security concepts.

Course Outcomes:

1. Explain the network security vulnerabilities/attacks and symmetric encryption schemes requirements and appropriate solutions.
2. Describe public key encryption techniques and mathematical foundations for cryptography.
3. Explain MAC, Hash, Digital Signatures and authentication protocols.
4. Discuss various authentication applications and E-mail security.
5. Discuss the system security mechanisms.
6. Explain communication and web security mechanisms.

CO-PO & PSO Mapping Table:

	PO1	PO2	PO3	PO4	PSO1	PSO2	PSO3
CO1		3	3		3	2	2
CO2	3	3	3	3	3	2	2
CO3	3			3	3		2
CO4				3	2		2
CO5		2	2		3		2
CO6	3			3	3		2

Unit- I

Learning Outcomes

1. Explain the security architecture and symmetric encryption schemes.[CO 1]
2. Implement the advanced symmetric algorithms. [CO1]

Topic of syllabus covered	Teaching Mode	Hours Required
Introduction: The OSI Security Architecture	Lecture	1
Security Attacks, Security Services	Lecture	1
Security Mechanisms	Lecture	1
A model for Network Security	Lecture	1
Classical Encryption Techniques: Symmetric cipher model	Lecture	1
Substitution Techniques	Lecture	2
Transposition techniques, Rotor machines and Steganography	Lecture	1
Block Ciphers and Data Encryption Standards: Block Cipher Principles	Lecture	1
The Data Encryption Standard and the Strength of DES	Demonstration	1
Differential and Linear Cryptanalysis	Lecture	
Block cipher Design Principles, Block Cipher Modes of Operation	Lecture	1
The AES cipher	Lecture	1

Unit- II

Learning Outcomes

1. Apply the mathematical foundations for cryptography techniques. [CO 2]
2. Describe various Public key encryption techniques. [CO 2]

Topic of syllabus covered	Teaching Mode	Hours Required
Introduction to Number Theory: Prime Numbers	Lecture	1
Fermat's and Euler's Theorems	Lecture	1
Testing for Primality	Lecture	1
The Chinese Remainder Theorem	Lecture	1
Discrete Logarithm	Lecture	1
Public key and RSA: Principles of Public key Cryptosystems	Lecture	2

The RSA algorithm	Lecture	1
Key Management: Key Management, Diffie-Hellman Key Exchange	Lecture	2

Unit- III

Learning Outcomes

1. Explain Message Authentication and Hash functions. [CO 3]
2. Discuss Digital Signatures and Authentication protocols. [CO 3]

Topic of syllabus covered	Teaching Mode	Hours Required
Message Authentication and Hash Function: Authentication Requirements	Lecture	1
Authentication Functions	Demonstration	
Message Authentication Protocols	Lecture	1
Hash Functions	Lecture	1
Security Hash Functions, Macs	Lecture	1
Hash Algorithms: Secure Hash Algorithm	Lecture	1
HMAC	Lecture	1
Digital Signatures and Authentication Protocols: Digital Signatures	Lecture	1
Authentication Protocols	Lecture	2
Digital Signature Standard	Lecture	1

Unit- IV

Learning Outcomes

1. Describe the Kerberos authentication Service and X.509 certificate formats. [CO 4]
2. Discuss Email security and IP security. [CO 4]

Topic of syllabus covered	Teaching Mode	Hours Required
Authentication Applications: Kerberos authentication service	Lecture	2
X.509 certificates	Lecture	1
Email Security: Pretty Good Privacy(PGP)	Lecture	2
IP Security: IP Security Overview, IP Security Architecture	Lecture	2
Authentication Header	Lecture	1
Encapsulating Security Pay Load	Lecture	1
Combining Security Associations, Key management	Demonstration	1

Unit- V

Learning Outcomes

1. Explain the transport and application layer security services. [CO 6]
2. Identify the system security vulnerabilities and apply the suitable security mechanisms. [CO 5]

Topic of syllabus covered	Teaching Mode	Hours Required
Web Security: Web Security Considerations	Lecture	1
Secure Sockets Layer	Lecture	2
Transport Layer Security	Lecture	1
Secure Electronic Transaction	Lecture	2
Intruders, Intrusion Detection	Lecture	1
Password Management	Lecture	1
Firewalls: Firewall Design Principles	Lecture	1
Trusted Systems	Lecture	1

Signatures of the Teachers

1. K. Venkata Ramana.
2. K. Aravinda
3. V. S. J. R. K. Padmini Valli

Signature of the HOD

Date: 23. 11. 2018

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 311(A) – ARTIFICIAL INTELLIGENCE

Lesson Plan

Academic Year: 2018 - 19

Year & Semester: III Year II Semester

Regulation: R -16

Name of the Faculty: Dr Ch Aparna/ Dr N Venkateswara Rao

Course Objectives:

1. Present fundamental concepts of artificial intelligence, both theory and practice.
2. Present various problem-solving methodologies.
3. Learn logical representation of natural language sentences.
4. Understand concepts of game playing.
5. Understand the role of various planning techniques in solving problems.
6. Describe how to develop an expert system for a given knowledge base.

Course Outcomes:

1. Explain the fundamental concepts of artificial intelligence.
2. Apply problem solving techniques for solving simple AI problems.
3. Explain knowledge representation issues.
4. Represent the given natural language sentences using appropriate knowledge representation structures.
5. Discuss various planning and game playing techniques.
6. Explain how to develop an expert system for given knowledge base.

CO – PO – PSO Mapping Table

	PO1	PO2	PO4	PSO1	PSO3
CO 1	2		2	3	2
CO 2	2			2	
CO 3		2		2	
CO 4		2		2	
CO 5		2	2	2	2
CO 6	2		2	2	2

Unit- I

Learning Outcomes

1. Explain various problems, production systems and its characteristics. CO1
2. Discuss different heuristic search techniques. CO2

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Defining the Problem as a State Space Search	Lecture	1	
Production Systems	Lecture	1	
Problem Characteristics	Lecture, Interaction	1	
Production System Characteristics	Lecture	1	
Issues in the Design of Search Programs	Lecture	1	
Generate-and-Test	Lecture	1	
Hill Climbing search	Lecture	1	
Best-First Search algorithm	Lecture	1	
A* algorithm	Lecture	1	
Problem Reduction	Lecture	1	
Constraint Satisfaction	Lecture, Interaction	1	
Means-Ends Analysis	Lecture, Interaction	1	

Unit- II

Learning Outcomes

1. Explain various knowledge representation issues. CO3
2. Represent the knowledge using predicate logic. CO4

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Representations and Mappings	Lecture	1	
Approaches to knowledge representation	Lecture	1	
Issues in knowledge representation	Lecture	1	
Representing Simple Facts in Logic	Lecture, Interaction	1	
Representing Instance and ISA Relationships	Lecture, Interaction	1	
Computable Functions and Predicates	Lecture	1	
Conversion to Clause Form	Lecture	1	

Resolution in Proposition Logic	Lecture, Interaction	1	
Unification Algorithm	Lecture, Examples	1	
Resolution in Predicate Logic	Lecture, Examples	1	

Unit- III

Learning Outcomes

1. Represent the knowledge using rules. CO4
2. Represent the given knowledge in symbol level. CO4

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Procedural versus Declarative Knowledge	Lecture, Discussion	1	
Logic Programming	Lecture, Discussion	1	
Forward Versus Backward Reasoning	Lecture, Interaction	1	
Matching	Lecture, Interaction	1	
Control Knowledge	Lecture	1	
Semantic Nets	Lecture, Demonstration	1	
Conceptual Dependency	Lecture, Demonstration	1	
Scripts	Lecture, Demonstration	1	

Unit- IV

Learning Outcomes

1. Explain different game playing strategies. CO5
2. Differentiate Minimax and alpha-beta cutoffs. CO5

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Overview	Lecture	1	
The Minimax Search Procedure	Lecture, Demonstration	2	
Adding Alpha-beta Cutoffs	Lecture, Demonstration	2	
Iterative Deepening	Lecture, Demonstration	2	

Unit- V

Learning Outcomes

1. Discuss various planning mechanisms. CO5
2. Demonstrate expert systems. CO6

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Overview, An Example Domain	Lecture	1	
Component of Planning Systems	Lecture	1	
Goal Stack Planning	Lecture	2	
Non-linear Planning using Constraint Posting	Lecture	2	
Hierarchical Planning and Reactive systems	Lecture	1	
Representing and using Domain Knowledge	Lecture, Interaction	1	
Expert System Shells and their explanation	Lecture	1	
Knowledge Acquisition	Lecture, Discussion	2	

Signatures of the Teachers

1.

2.

Signature of the HOD

Date:

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 311(D) – Multimedia Computing

Lesson Plan

Academic Year	2018 - 19
Year & Semester	III Year II Semester
Regulation	R-16
Name of Faculty	R MABU BASHA

Course Objectives:

1. To know the latest hardware and software available in various Multimedia Authoring tools.
2. To acquire knowledge on basic and standard file formats of video and audio.
3. To understand and evaluate various Image compression schemes.
4. To learn various coding and transformation techniques.
5. To study about multimedia media communication and Network technologies with assured Quality of Service (QoS) to the users.

Course Outcomes:

1. Acquire knowledge on various multimedia sotware tools & multimedia authoring tools.
2. Understand and handle the Graphics/Image data types and popular file formats on a computer or other systems.
3. Evaluate the use of various coding techniques implemented in different applications.
4. Understand the Quality of Services (Qos) in Multimedia networks.
5. Know about Multimedia Database and Image Database applications.

CO - PO Mapping Table

	po1	po2	po4
co1	2	2	
co2	2	2	
co3	3	3	2
co4	2	3	
co5	2	3	2

CO - PSO Mapping Table

	PSO 1	PSO 2	PSO 3
CO 1	3		2
CO 2	3		2
CO 3	3	2	
CO 4	2		2
CO 5	2		

Unit- I

Learning Outcomes

1. Understand technical concepts of Multimedia Systems. [co1]
2. Understand various file formats for image and text media. [co2]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction, Multimedia Presentation and Production	Lecture	1	
Characteristics of a Multimedia Presentation	Lecture	1	
Hardware and Software Requirements	Lecture	1	
Uses of Multimedia	Lecture	1	
Analog and Digital Representations Digitization	Lecture	1	
Nyquist's Sampling Theorem	Lecture	1	
Quantization Error, Visual Display Systems.	Lecture	1	
Introduction to text	Lecture	1	
Types of Text, Unicode Standard, Font, Insertion of Text	Lecture	1	
Text Compression	Lecture	1	
Text File Formats	Lecture	1	
Introduction to Image Data Representation	Lecture	1	
Image Processing	Lecture	1	
Binary Image Processing, Grayscale Image Processing, Color Image Processing,	Lecture	1	
Image Output on Monitors, Image Output on Printers, Image File Formats, Image-Processing	Lecture	1	

Unit- II

Learning Outcomes

1. Develop various Multimedia Systems applicable in real time. [co3]
2. Understand MIDI about interface. [co3]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to audio, Types and Properties of Sounds.	Lecture	1	
Components of an Audio Systems, Digital Audio	Lecture	1	
Synthesizers, Musical Instrument Digital Interface (MIDI),	Lecture	1	
Digital Audio Processing, Speech, Sound Card, Audio Transmission, Audio File Formats	Lecture	1	
Surround Sound Systems, Digital Audio Broadcasting, Audio-Processing Software.	Lecture	1	
Introduction to video	Lecture	1	
Motion Video, Analog Video Camera, Analog Video Signal Representation, Television Systems	Demonstration		1
Video Color Spaces, Digital Video, Digital Video Processing, Video Recording and Storage Formats	Lecture	1	
Video File Formats, Video Editing Concept.	Lecture	1	
Video-Processing Software.	Flipped Classroom		1

Unit- III

Learning Outcomes

1. Analyse compression techniques related to multimedia data. [co3]
2. Describe audio and video standards. [co3]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to animation.	Lecture	1	
Historical Background, Uses of Animation,	Lecture	1	

Traditional Animation, Principles of Animation			
Computer-based Animation, Animation on the Web, 3D Animation, Rendering Algorithms.	Lecture	1	
Animation File Formats, Animation Software.	Lecture	1	
Introduction to Compression	Lecture	1	
Lossless Compression Techniques	Lecture	1	
Lossy Compression Techniques	Demonstration		1
Image Compression.	Lecture	2	
Audio Compression.	Lecture	1	
Video Compression.	Lecture	1	
MPEG Standards Overview.	Lecture	2	
Fractal Compression.	Lecture	1	

Unit- IV

Learning Outcomes

1. Apply various networking protocols for multimedia applications. [co4]
2. Describe various communication standards. [co4]

Topic of syllabus covered	**Teaching Mode**	**Hours Required**	
		L	**T**
Introduction of multimedia architecture.	Lecture	1	
User Interfaces, OS Multimedia Support, Multimedia Extensions, Hardware Support Distributed Multimedia Applications.	Lecture	1	
Real-time Protocols.	Lecture	1	
Playback Architectures, Synchronization	Lecture	1	
What is a Multimedia Database, Content-Based Storage and Retrieval(CBSR)	Lecture	3	
Designing a Basic Multimedia Database.	Demonstration		1

Image Color Features, Image Texture Features. Image-Shape Features, Audio Features, Video Features, Classification of Data.	Lecture	1	
Artificial Neural Networks, Semantics in Multimedia Data, Prototype Implementations.	Lecture	2	

Unit- V

Learning Outcomes

1. Evaluate multimedia application for its optimum performance. [Co5]
2. Acquire Knowledge about case study . [co5]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Document and Document Architecture.	Lecture	1	
Hypermedia Concepts, Hypermedia Design.	Lecture	1	
Digital Copyrights	Lecture	1	
Digital Library, Multimedia Archives	Lecture	1	
Multimedia application development.	Lecture	1	
Software Life-Cycle Overview.	Lecture	1	
ADDIE Model.	Demonstration	1	
Multimedia Production Steps,	Lecture	1	
Case Study	Demonstration		1
Authoring Software. Computer Games.	Lecture	1	

Signatures of the Teachers
1. R M. Bansa

Signature of the HOD

Date:23/11/2018

R.V.R. & J.C.COLLEGE OF ENGINEERING, GUNTUR – 522 019
(Autonomous)

Subject Name with code	: Advanced Databases-CS312(B)(R16)
Class / Semester	: III/IV B.Tech (Second Semester)(2018-2019)
Date of commencement of class work :	
Dept	: CSE
Faculty	: Mr.E.Ramesh

LECTURE PLAN FOR THE ACADEMIC YEAR 2018- 2019

Course Objectives:

1. To understand data base systems architecture and catalog and the importance of it in data base technology.
2. Implementing aggregate operations and outer joins combining operations using pipelining using heuristics in query optimization.
3. To define and discuss the importance of Distributed Transaction and Recovery Management.
4. To understand the Object Oriented DBMSs Concepts and Design and models required for Object Oriented Data design.
5. Narrates Emerging database technologies and applications like Mobile databases.

Course Outcomes:

1. Able to understand System Architecture and Catalog.
2. Can understand Distributed DataBase Concepts.
3. Able to design Distributed Relational Database system, ORDBMS and Object DBMSs concepts.
4. Able to understand and use the solutions related to advanced database concepts.

Unit- I

Learning Outcomes:

- To be able to describe the various System architectures for DBMSs ,Catalogs for Relational DBMSs.
- To be able to Understand about the System catalog information in oracle.
- To discuss about the functions and architecture of Distributed DBMS.

Topic of syllabus covered	Teaching Mode	Hours Required		Course Outcomes
		L	T	
System architectures for DBMSs	Lecture &Demonstration	2		CO1
Catalogs for Relational DBMSs	Lecture &Demonstration	2		CO1
System catalog information in oracle	Lecture &Demonstration	2		CO1
Introduction to Distributed DBMS Concepts and Design	Lecture &Demonstration	1		CO1
Function and architecture of a Distributed DBMS	Lecture &Demonstration	2		CO1
Unit Total		11		

Unit- II

Learning Outcomes:

- Describe about the Distributed Relational Database and property of Distributed Database i.e., Distribution transparency.
- Discuss about Date's Twelve Rules, Transaction Management, Concurrency Control, Deadlock, Recovery of Distributed Database.
- To be able to describe about The X/Open, Transaction Processing Model.
- To be able to Understand process of Data Replication and Replication servers.

Topic of syllabus covered	Teaching Mode	Hours Required		CO Mapping
		L	T	
Distributed Relational Database Design-transparencies in a Distributed DBMS	Lecture &Demonstration	2		CO2
Date's Twelve Rules for Distributed DBMS	Lecture &Demonstration	2		CO2
Distributed Transaction Management	Lecture &Demonstration	1		CO2
Distributed Concurrency Control - Distributed Deadlock Management Distributed Database Recovery	Lecture &Demonstration	1		CO2
The X/Open	Power point Presentation	1		CO2
Distributed Transaction processing model	Lecture &Demonstration	2		CO2
Replication Servers	Lecture &Demonstration	2		CO2
Unit Total		11		

Unit- III

Learning Outcomes:

- Discuss about the Weaknesses of RDBMS and Applications of Advanced Database.
- Describe and discuss various Object Oriented Concepts, Storage of Objects in Relational Database and Next generation Database systems.
- To able to Understand about Object Oriented Data Models and DBMS, OODBMS perspectives, Persistence and issues in OODBMS.
- To be able to describe the various models to achieve memory consistency.

Topic of syllabus covered	Teaching Mode	Hours Required		CO Mapping
		L	T	
Advanced Database Applications - Weaknesses of RDBMSs	Lecture &Demonstration	2		CO3
Object oriented Concepts	Power point Presentation	2		CO3
Storing objects in a Relational Database	Power point Presentation	1		CO3
Next generation Database systems	Power point Presentation	1		CO3
Introduction to Object Oriented Data Models and DBMSs	Power point Presentation	1		CO3
OODBMS perspectives	Power point Presentation	1		CO3
Persistence	Power point Presentation	1		CO3
Issues in OODBMSs	Power point Presentation	2		CO3
Unit Total		11		

Unit- IV

Learning Outcomes:

- To be able to Understand OODB, advantages and disadvantages of OODB, System Manifesto.
- To Discuss and design OODB, Relational Database Systems.
- To Understand about The third generation Database manifesto, Postgres, early ORDBMS and SQL3.

of syllabus covered	Teaching Mode	Hours Required		CO Mapping
		L	T	
The object Oriented Database	Lecture & PPT	2		CO4
System Manifesto	Lecture &PPT	1		CO4
Advantages and Disadvantages of OODBMSs	Lecture &PPT	1		CO4
Object oriented Database Design	Lecture &PPT	1		CO4
Introduction to Object	Lecture &PPT	1		CO4
Relational Database systems	Lecture &PPT	1		CO4
The third generation Database manifesto	Lecture &PPT	1		CO4
Postgres	Lecture &PPT	1		CO4

An early ORDBMS	Lecture &PPT	1		CO4
SQL3	Lecture &PPT	1		CO4
Unit Total		11		

Unit- V

Learning Outcomes:

- To be able to Understand about various Database Applications like Mobile, Multimedia Databases etc.,
- To Understand about emerging Database technologies like Geographic information Systems, Genome data management.
- Discuss about Internet Databases and XML Hierarchical (Tree) Data model.

Topic of syllabus covered	Teaching Mode	Hours Required		CO Mapping
		L	T	
Mobile databases	Lecture & PPT	2		CO4
Multimedia databases	Lecture &PPT	1		CO4
Geographic information systems	Lecture &PPT	1		CO4
Genome data management	Lecture &PPT	2		CO4
Structured	Lecture &PPT	2		CO4
Semi structured	Lecture &PPT	1		CO4
Unstructured data	Lecture &PPT	1		CO4
XML Hierarchical (Tree) Data model	Lecture &PPT	1		CO4
Unit Total		11		
Total		55		

2/08/19

Sign. of the Faculty with Date

M.SreeLatha
Prof.,&HOD,CSE

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 312(C) – Advanced Data Structures

Lesson Plan

Academic Year 2018 - 19

Year & Semester III Year II Semester

Regulation R-16

Name of Faculty Dr.Ch.Aparna

Course Objectives:

1. To understand the concepts of data structures such as dictionaries, skip lists and trees
2. To learn and implement hashing.
3. To develop algorithms for text processing applications.
4. To understand the concepts of computational geometry.

Course Outcomes:

1. Implement hashing techniques, dictionary and skip list ADTs for solving a given problem.
2. Describe the need for randomizing data structures and algorithms.
3. Implement the operations of binary search, AVL, red black, splay and 2-3 trees.
4. Develop applications by using text processing.
5. Explain the concepts of computational geometry.

Unit- I

Learning Outcomes

1. Implement hashing techniques. – CO1
2. Develop solutions to the given problem using dictionary ADT. – CO1

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Dictionary Abstract Data Type	Lecture	1	
Implementation of Dictionaries	Demonstration	2	
Review of Hashing	Collaboration	1	
Hash Function	Lecture	1	
Collision Resolution Techniques in Hashing	Lecture, Collaboration	1	
Separate Chaining	Flipped Class	1	
Open Addressing	Demonstration	1	
Rehashing	Lecture	1	
Extendible Hashing	Lecture, Demonstration	1	

Unit- II

Learning Outcomes

1. Describe the need for randomizing data structures and algorithms.
2. Implement Skiplist, Binary Search Tree (BST), AVL Tree ADTs

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Need for Randomizing Data Structures and Algorithms	Lecture	1	
Search and Update Operations on Skip Lists	Demonstration	1	
Probabilistic Analysis of Skip Lists	Lecture	1	
Deterministic Skip Lists	Lecture	1	
Binary Search Trees	Flipped Classroom	2	
AVL Trees	Lecture, Demonstration	2	8

Unit- III

Learning Outcomes

1. Describe the properties and operations of Red-Black, B-trees and 2-3 trees
2. Implement the operations of Red-Black Tree, 2-3 Tree and B-Tree data structures

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Red Black Trees – Properties	Lecture	1	
Insertion operation on a Red-Black tree	Demonstration	2	
Deletion operation on a Red-Black tree	Demonstration	2	
B-Trees: Advantage of B- trees over BSTs	Collaboration	1	
Height of B-Tree	Lecture	1	
Insertion, Deletion operation on B-trees	Demonstration	2	
2-3 trees-Properties	Lecture	1	
Search and Update Operations on 2-3 Trees	Demonstration	2	12

Unit- IV

Splay Trees: Splaying, Search and Update Operations on Splay Trees, Amortized Analysis of Splaying.

Learning Outcomes

1. Implement the operations of splay tree
2. Develop applications by using text processing.
3. Find longest common subsequence for a given input text.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Splaying	Lecture, Demonstration	1	
Search and Update Operations on Splay Trees	Demonstration	1	
Amortized Analysis of Splaying	Collaboration	0.5	
Brute-Force Pattern Matching	Demonstration	0.5	
The Boyer-Moore Algorithm	Lecture, Demonstration	1	
The Knuth-Morris-Pratt Algorithm	Lecture, Demonstration	1	
Standard Tries, Compressed Tries, Suffix Tries	Lecture	2	
The Huffman Coding Algorithm	Lecture, Demonstration	1	
The Longest Common Subsequence Problem	Lecture, Demonstration	1	
Applying Dynamic Programming to the LCS Problem	Flipped Classroom	1	

Unit- V

Learning Outcomes

1. Explain the concepts of computational geometry.
2. Construct priority search tree for the given data.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
One Dimensional Range Searching	Lecture	1	
Two Dimensional Range Searching	Lecture	1	
Constructing a Priority Search Tree	Lecture, Demonstration	2	
Searching a Priority Search Tree	Lecture	1	
Priority Range Trees	Lecture	1	
Quad trees	Lecture	2	
k-D Tree	Lecture	2	

Total number of Periods 50

Signatures of the Teachers

Signature of the HOD

Date: 22/11/18

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 405 –Wireless Networks

Lesson Plan

Academic Year	2019 - 20
Year & Semester	IV Year I Semester
Regulation	R-16
Name of Faculty	Ms. S J R K Padminivalli V /Ms. B Prasanthi/ Mr. A.Raami Reedy

Course Objectives:

1. To study about Simplified Reference model, MAC Control and applications in Mobile Communications.
2. To Know about the predominant communication systems in wireless domain.
3. To understand wireless LAN technologies.
4. To learn about the protocols used in Wireless Networks.

Course Outcomes: After successful completion of the course, the students are able to:

1. Discuss the wireless transmission technologies and media access control mechanisms.
2. Explain various 2G, 3G technologies and broadcast communication systems.
3. Describe the mobile IP and wireless LAN protocols.
4. Discuss the mobile transport layer protocols and wireless application protocols.

CO-PO-PSO Mapping

	PO1	PO2	PO3	PSO1	PSO2
CO1	2			2	
CO2	2	2	2	2	2
CO3		2	2	2	3
CO4		2	2	2	3

Unit- I

Learning Outcomes

1. Explain the multiplexing and modulation techniques for wireless transmission. **CO1**
2. Differentiate various medium access control mechanisms. **CO1**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Applications	Collaboration	1	
A Short History of Wireless Communications	Lecture	1	
A Market for Mobile Communications, A Simplified	Collaboration	1	

Reference Model.			
Wireless Transmission: Frequencies, Signals	Lecture	1	
Antennas, Signal Propagation	Lecture	1	
Multiplexing	Lecture	1	
Modulation	Lecture	1	
Spread Spectrum	Lecture	1	
Medium Access Control :Motivation for a Specialized MAC,	Lecture	1	
SDMA, FDMA, TDMA	Lecture	2	
CDMA, Comparison.	Lecture	1	

Unit- II

Learning Outcomes

1. Differentiate 2G,3G Telecommunication systems. **CO2**
2. Identify the usage of satellites and broadcast systems. **CO2**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Telecommunication Systems: GSM	Lecture	3	
UMTS and IMT-2000.	Lecture	3	
Satellite Systems – History, Applications, Basics (GEO, LEO, MEO),	Lecture	2	
Routing, Localization, Handover.	Lecture	1	
Broadcast Systems – Overview, Cyclic Repetition of Data	Lecture	1	
Digital Audio Broadcasting	Lecture	1	
Digital Video Broadcasting.	Lecture	1	

Unit- III

Learning Outcomes

1. Identify the protocols for implementing the Wireless LAN. **CO3**
2. Discuss the protocols for wireless PAN. **CO3**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Wireless LAN : Infrared Vs. Radio Transmission , Infrastructure and Ad Hoc Networks	Lecture	1	

IEEE, 802.11:System Architecture, Protocol architecture	Lecture	1	
Physical Layer	Lecture	1	
MAC Layer	Lecture	1	
MAC Management	Lecture	1	
IEEE, 802.11b, IEEE, 802.11a	Lecture	1	
Newer Developments	Lecture	1	
Bluetooth: User scenarios	Lecture	1	
Architecture	Lecture	1	
Radio Layer, Baseband Layer	Lecture	1	
Link manager protocol,L2CAP,Security	Lecture	1	
SDP, Profiles, IEEE 802.15	Lecture	1	

Unit- IV

Learning Outcomes

1. Identify the network and transport protocols for wireless transmission. CO4
2. Discuss the routing protocols for Ad hoc-networks. CO4

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Mobile Network Layer: Mobile IP Goals, Assumptions and requirements.	Lecture	1	
Entities and terminology, IP packet delivery	Lecture	1	
Agent Discovery, Registration	Lecture	1	
Tunnelling and Encapsulation, optimizations	Lecture	1	
Reverse Tunnelling ,IPv6	Lecture	1	
IP micro-mobility support, Dynamic Host Configuration	Lecture	1	
Ad Hoc Networks: Routing	Lecture	1	
DSDV,DSR	Lecture	1	
Alternative metrics, Overview ad-hoc routing protocols	Lecture	1	
Mobile Transport Layer: Traditional TCP, Classical TCP improvements- Indirect TCP,	Lecture	1	
Snooping TCP, Mobile TCP, Fast Retransmit/ Fast Recovery	Lecture	1	
Transmission / Time Out Freezing , Selective Retransmission ,Transaction Oriented TCP	Lecture	1	

Unit- V

Learning Outcomes

1. Discuss the protocols for wireless application environment. CO4

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Wireless Application Protocol : Architecture, Wireless Datagram Protocol	Lecture	2	
Wireless Transport Layer Security, Wireless Transaction Protocol.	Lecture	3	
Wireless Session protocol	Lecture	2	
Wireless Application Environment, Wireless Markup Language,	Lecture	2	
WML Script	Lecture	1	
Wireless Telephony Application, Example Stacks with WAP.	Lecture	2	

Signatures of the Teachers
1. V.S.J.R.K.Padma Valli
2.
3. G. Prasantha.

Signature of the HOD

Date: 6/6/19

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING
CS 406(A) – Open Source Systems (Elective – IV)
Lesson Plan

Academic Year	2019 - 2020
Year & Semester	IV Year I Semester
Regulation	R-16
Name of Faculty	Smt. Z.Sunitha Bai

Course Objectives:

1. To understand basic concepts of PHP language and developing web applications.
2. To learn PHP Browser Handling and form data access.
3. To create database driven web applications.
4. To use Ajax for partial rendering.
5. To use XML and RSS with PHP

Course Outcomes:

1. Develop web applications using Apache, PHP, and MySQL and apply the OOP concepts.
2. Create database driven web applications.
3. Create powerful web applications using Ajax.
4. Create images at the web server.
5. Manipulate XML documents using PHP and Create RSS.

CO-PO Mapping Table:

CO'S/PO'S	PO1	PO2	PO3	PO4	PO5
CO1	2				
CO2	2	3			
CO3	2	3	3		
CO4	2	3	3	2	3
CO5		2	2	2	

UNIT- I: INTRODUCTION TO PHP

Learning Outcomes

1. Describing operators and control flow of PHP. (CO1)
2. Differentiating types of strings and arrays. (CO1)

Topic of syllabus covered	Teaching Mode	Hours Required
Essential PHP	Lecture	3
Operators	Lecture , Demonstration	3
Flow Control	Lecture	4
Strings and Arrays	Lecture, Demonstration	5

UNIT- II: PHP BROWSER HANDLING FUNCTIONS

Learning Outcomes

1. Reading, writing and updating data in web pages. (CO1)
2. Able to handle PHP Browser. (CO1)

Topic of syllabus covered	Teaching Mode	Hours Required
Reading Data in Web Pages using functions	Lecture	5
Writing data, updating Data in Web Pages using functions	Lecture, Demonstration	4
PHP Browser- HANDLING Power	Lecture	6

UNIT- III: OBJECT ORIENTED & ADVANCED OBJECT ORIENTED FEATURES PHP FILE HANDLING

Learning Outcomes

1. Describing Object Oriented Programming concepts in PHP (CO1)
2. Able to handle file operations (CO1)

Topic of syllabus covered	Teaching Mode	Hours Required
Object Oriented Programming	Lecture, Demonstration	4
Advanced Object Oriented Programming.	Lecture	4
File Handling	Lecture	7

UNIT- IV: DATA BASE CONNECTIONS IN PHP

Learning Outcomes

1. Able to manage database and differentiate sessions and cookies. (CO2)
2. Developing simple ajax application. (CO3)

Topic of syllabus covered	Teaching Mode	Hours Required
Working with Databases	Lecture , Demonstration	4
Introduction to Sessions & Cookies	Lecture, Demonstration	3
Overview of FTP	Lecture	3
Introduction to Ajax & Applications	Lecture	5

UNIT- V: ADVANCED AJAX & XML,RSS

Learning Outcomes

1. Develop different AJAX applications and also draw the image on server side (CO4)
2. Able to create simple XML valid document and RSS (CO5)

Topic of syllabus covered	Teaching Mode	Hours Required
Advanced Ajax Applications	Lecture, Demonstration	4
Drawing Images on the Server	Lecture, Demonstration	5
Introduction to XML & Validating XMl documents	Lecture	2
Overview of RSS & it's usage in PHP	Lecture	4

Z. Sujitha Bai
Signatures of the Teacher

H. S...
Signature of the HOD

Date: 06/06/2019

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING
CS- 406(C) (Elective-IV) CYBER SECURITY
Lesson Plan

Academic Year	2019 - 20
Year & Semester	IV Year I Semester
Regulation	R-16
Name of Faculty	Sri.CH.RATNA BABU

Course Objectives:

1. To introduce the fundamental Information security concepts & Threats.
2. Learn the security standards and policies to be maintained by the organizations.
3. Describe various Security Performance Metrics & Configuration reviews.
4. Discuss the different log management and backup procedures.
5. Use the Vulnerability analysis tools and perform auditing.

Course Outcomes:

1. Analyze the Information Security Assets and Threats.
2. Identify the various security standards and policies to be maintained by the organizations.
3. Design and Implement Security Performance Metrics & Configuration reviews.
4. Analyze log management functions and data backup procedures
5. Apply the Security Audit process using Vulnerability analysis tools.

CO – PO and CO-PSO Mapping Table

	PO1	PO2	PO3	PO5	PO6	PSO1	PSO2
CO 1	3	3	2	3	2	3	3
CO 2	-	-	-	3	2	2	2
CO 3	3	3	2	3	2	3	3
CO 4	3	2	2	3	2	2	3
CO 5	3	2	2	3	2	2	3

Unit- I

Learning Outcomes

1. Explain various types of network security threats and attacks **[CO1]**
2. Discuss the principles and data security control mechanisms. **[CO1]**

Topic of syllabus covered	Teaching Mode	Hours Required
1.Information Security Assets & Threats:		
Introduction About Cyber Attacks, Threats	LECTURE	1
Viruses And Types	LECTURE	1
Types Of worms	LECTURE	1
Worms And Its Types	LECTURE	1
Types Of Network Attacks	DEMONSTRATE	1
Types Of Trojans and DoS (denial-of-service) attack	LECTURE	1
Network attacks, Bluetooth attacks	DEMONSTRATE	1
2.Fundamentals of Information Security:		
Elements Of Information Security	PPT	1
Principles And Concepts Of Data Security	PPT	1
Types of controls	LECTURE	1
Discretionary Access Control (DAC)	LECTURE	1
Role-Based Access Control (RBAC)	LECTURE	1
	Total Periods:	**12**

Unit- II

Learning Outcomes

1. Explain the roles and responsibilities of information - **[CO2]**
2. Discuss the Data leakage and Prevention techniques- **[CO2]**
3. Discuss the Policies and standards in information Security- **[CO2]**

Topic of syllabus covered	Teaching Mode	Hours Required
3.Roles and Responsibilities:		
Information and Data Security Team	PPT	1
CEO or Executive Management, Security Engineer,	LECTURE	1
Systems Administrator, Security Steering Committee,	LECTURE	1
Security Incident Response Team.	LECTURE	1
4.Data Leakage:		
Introduction – Data Leakage, Organizational Data Classification,	LECTURE	1
Location and Pathways, Content Awareness,	LECTURE	1
Content Analysis Techniques,	PPT	1
Data Protection, DLP Limitations,	LECTURE	1
DRM-DLP Conundrum, SQL Injection using OWASP tool.	DEMONSTRATE	1
5.Information Security Policies, Procedures, Standards and Guidelines:		
Information Security Policies, Key Elements of a Security Policy	LECTURE	1
Security Standards: COSO, COBIT,ISO27001,SANS.	LECTURE	2
	Total Periods:	**12**

Unit- III

Learning Outcomes

1. Discuss the Configuration Review. **CO3**
2. Describe the Performance of Security Metrics. **CO3**
3. Describe the organizational security configuration policies. **CO3**

Topic of syllabus covered	Teaching Mode	Hours Required
6.Information Security Performance Metrics:		
Introduction –Security Metrics	LECTURE	2
Types of Security Metrics	PPT	2
Using Security Metrics	LECTURE	1
Developing the Metrics Process	LECTURE	1
Metrics and Reporting	LECTURE	1
7.Configuration review:		
Configuration Management	LECTURE	1
Organizational SecCM Policy	LECTURE	2
Identify CM Tools	DEMONSTRATE	1
Implementing Secure Configurations	LECTURE	1
	Total Periods:	**12**

Unit- IV

Learning Outcomes

1. Demonstrate the log correlation and management tools. **CO4**
2. Explain different types of data backup and storage mechanisms. **CO4**

Topic of syllabus covered	Teaching Mode	Hours Required
8.Log Correlation and Management:		
Event Log Concepts	LECTURE	1
Log Management Infrastructure and functions	LECTURE	2
Log Management - Using Log watch.	DEMONSTRATE	1
9.Data Backup:		
Types of Backup	LECTURE	2
Backup Procedures,	LECTURE	1
Types of Storage,	LECTURE	2
Features of a Good Backup Strategy.	LECTURE	1
	Total Periods:	**10**

Unit- V

Learning Outcomes

1. Implement various vulnerability analysis. **CO5**
2. Explain different types of Security Audit methodologies. **CO5**
3. Discuss the penetration testing stages. **CO5**

Topic of syllabus covered	**Teaching Mode**	**Hours required**
10.Vulnerability Analysis:		
Vulnerability Classification	LECTURE	1
Types of Vulnerability Assessment	LECTURE	1
Vulnerability Analysis Tools	DEMONSTRATE	1
11.Information Security Audit:		
What is an Information Security Audit, Scope of the Audit	LECTURE	1
Types of Security Audits	LECTURE	1
Phases of Information Security Audit,	LECTURE	1
Information Security Audit Methodology	LECTURE	1
Role of an Auditor	LECTURE	1
Penetration testing stages.	LECTURE	2
	Total Periods:	**10**

Signatures of the Teachers

1. Ch. Ratna Baby

Signature of the HOD

Date: 04/06/2019.

RVR&JC COLLEGE OF ENGINEERING
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
CS 406*(D) (Elective-IV)
Data Analytics (2019-2020) (R16)

LESSON PLAN FOR ACADEMIC YEAR 2019-20

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3		2							
CO2	3	3	3									
CO3	2	3	3		3							
CO4	2	3	3									
CO5		3	3									3

Unit I

Learning outcomes:

1. **Able to recognize the use of R interactive environment (R Studio).**
2. **Understand the conditional and iterative statements in R.**
3. **Create and use of various user defined function as well as built-in function.**
4. **Create various graphical representations (bar graphs, pie charts, histograms, kernel density plots, box plots, dot plots) for various data sets.**

NO	TOPIC	Duration	CO	Teaching Methodology
1.	Introduction to Data Analytics	1	CO 1	Lecture
2.	Introduction to R	1	CO 1	Lecture, Presentation
3.	R data structure_ data frames	1	CO 1	Demonstration
4.	R data structure_ Arrays	1	CO 1	Demonstration
5.	R data structure_ Matrix	1	CO 1	Demonstration
6.	R data structure_ Lists	1	CO 1	Demonstration
7.	Reading Database using R	1	CO 1	Demonstration
8.	Importing & Exporting CSV	1	CO 1	Lecture, Demonstration
9.	Combining Data sets in R	1	CO 1	Lecture, Demonstration
10.	Handling Missing Data	1	CO 1	Lecture, Demonstration
11.	Outliers	1	CO 1	Lecture, Demonstration
12.	Functions	1	CO 1	Lecture, Demonstration
13.	Loops	1	CO 1	Lecture, Demonstration
14.	Basic graphs - Bar plot, pie chart, Histograms	2	CO 1	Lecture, Demonstration
15.	Basic graphs - Kernel Density plots, Box plots, dot plots	2	CO 1	Lecture, Demonstration

Unit II

Learning outcomes:

1. **Understand various properties of data sets using summary() function.**
2. **Creating and testing probability distribution function for various data sets.**
3. **Implementing of central limit theorem in R for various data sets.**
4. **Implementing random walk theorem in R for various data sets.**

16.	Summarizing data with R	1	CO 2	Lecture, Demonstration
17.	Expected value	1	CO 2	Lecture, Demonstration
18.	Random & Bivariate Random Variables	2	CO 2	Lecture, Demonstration
19.	Probability distribution	1	CO 2	Lecture, Demonstration
20.	Normal Distribution	1	CO 2	Lecture, Demonstration
21.	Central Limit Theorem	2	CO 2	Lecture, Demonstration
22.	Random walk	2	CO 2	Lecture, Demonstration

Unit III

Learning outcomes:

1. **Create and use NoSQL data base in R.**
2. **Integration excel data sets with R.**

23	NO SQL, Benefits of NOSQL	2	CO 3	Lecture
24	NoSQL vs. SQL	2	CO 3	Lecture
25	Excel and R integration with R connector	3	CO 3	Lecture, Demonstration
26	Read & Execute R code from an Excel spreadsheet	1	CO 4	Lecture, Demonstration

Unit IV

Learning outcomes:

1. **Identify the concept of regression analysis using R**
2. **Develop models using simple linear regression and multiple regressions.**

27	Basic Regression Analysis	1	CO 4	Lecture, Presentation
28	OLS Regression	1	CO 4	Lecture, Demonstration
29	Regression Modeling	2	CO 4	Lecture, Demonstration
30	Regression residuals	1	CO 4	Lecture, Demonstration
31	Correlation	1	CO 4	Lecture, Demonstration
32	Heteroscedasticity	1	CO 4	Lecture, Demonstration
33	Autocorrelation& Multicollinearity	1	CO 4	Lecture, Demonstration
34	Simple linear regression	1	CO 4	Lecture, Demonstration
35	Multiple linear regressions	2	CO 4	Lecture, Demonstration

Unit IV

Learning outcomes:

1. **Understand the business problems.**
2. **Identify the Requirements gathering process.**

36.	Understand systems viz. Engineering Design,	1	CO 5	Lecture, Presentation
37.	Manufacturing	1	CO 5	Lecture, Presentation
38	Smart utilities	2	CO 5	Lecture, Presentation
39	production lines, Automotive industries, Tech system	2	CO 5	Lecture, Presentation
40	Understand the business problem Related to engineering	2	CO 5	Lecture, Presentation
41	Identify the critical issues	2	CO 5	Lecture, Presentation
42	Setting business objectives	2	CO 5	Lecture, Presentation
43	Requirement gathering	2	CO 5	Lecture, Presentation

1. D Naveen Kumar
2. Ch. Srinivasa Rao.

M. S... M

(Dr.M.Sreelatha)
Professor & HOD, CSE

06/06/2019

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING
CS- 410 (D) (R -16) CLOUD COMPUTING
Lesson Plan

Academic Year	2019 - 20
Year & Semester	IV Year VIII Semester
Regulation	R-16
Name of Faculty	Sri.Ch.Ratna Babu

Course Objectives:

1. To understand the different Cloud Deploy & Service Models.
2. To understand the Integrate Enterprise cloud environments.
3. To understand the Cloud Virtual Machines Migration and cloud enhancing service.
4. To learn Secure Distributed Data Storage and work flow engines for clouds.
5. To understand the Data security and SLA Management

Course Outcomes :

CO1. Explain different Cloud Deploy & Service Models.

CO2. Analyze the integrated enterprise cloud environments.

CO3. Describe the Cloud Virtual Machines Migration and cloud enhancing service.

CO4. Analyze secure distributed data storage and work flow engines for clouds.

CO5. Describe the data security, CaaS and SLA Management

	PO1 (2)	PO2 (3)	PO3	PO4(3)
CO 1	2	2		
CO 2	2	3		2
CO 3	2	3		3
CO 4	2	3		3
CO 5	2	3		3

Unit- I:

Learning Outcomes:

1. To Understand the roots of cloud computing technologies. **[CO 1]**
2. To describe layers and types of clouds. **[CO 1]**
3. To learn Cloud Seven Step Migration Model phases. **[CO 1]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Chapter 1 : Introduction To Cloud Computing			
Roots of Cloud Computing	Power Point Presentation	1	
Layers and Types of Clouds	Power Point Presentation	0.5	
Desired Features of Cloud	Lecture	0.5	
Cloud Infrastructure Management	Lecture	1	
Infrastructure as a Service Providers	Lecture	1	
Platform as a Service Providers	Lecture	1	
Challenge and Risks	Lecture	0.5	
Chapter 2 : Migration into a Cloud.			
Broad Approaches to Migrating into the Cloud	Lecture	0.5	
The Seven-Step Model of Migration into a Cloud	Power Point Presentation	1	
	Total Periods:	**07**	

Unit- II :

Learning Outcomes:

1. To describe different SaaS Integration Products and Platforms.**[CO 1]**
2. To Learn Enterprise cloud environment deployment Models. **[CO 2]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Chapter 3 : Enriching the 'Integration as a Service' Paradigm for the Cloud Era			
Enterprise Cloud deployment models	Lecture	1	
Introduction to SaaS & challenges of SaaS paradigm	Lecture	0.5	
Approaching the SaaS integration	Lecture	0.5	
New integration scenarios & integration methodologies	Lecture	1	

Saas integration products and platforms	Power Point Presentation	1	
SaaS Integration Services	Lecture	1	
Business to Business Integration(B2Bi) Services	Lecture	1	
A Framework of Sensor-Cloud Integration	Power Point Presentation	1	
Chapter 4 : The Enterprise Cloud Computing Paradigm			
Issues for Enterprise Applications on the Cloud	Lecture	1	
Enterprise Cloud Technology and Market Evolution & Business Drivers	Power Point Presentation	1	
The Cloud Supply Chain	Lecture	1	
	Total Periods:	**10**	

Unit- III :

Learning Outcomes:

1. To understand VM Life Cycle & Types. **[CO 3]**
2. To Learn the VM Migration Techniques and VM Actions. **[CO 3]**
3. To Learn the Cass Logical design using RVWS framework. **[CO 4]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Chapter 5 : Virtual Machines Provisioning and Migration Services			
Virtual Machines Life Cycle	Power Point Presentation	1	
Virtual Machine Provisioning and Manageability	Lecture	1	
Virtual Machines Types	Demonstration	1	
Virtual Machine Migration Services	Power Point Presentation	1	
VM Provisioning and Migration in Action	Lecture	1	

Provisioning in the Cloud Context	Lecture	2	
Aneka VM Cloud Provision	Power Point Presentation	1	
Chapter 6: Enhancing Cloud Computing Environments Using a Cluster as a Service:			
RVWS Logical Design	Power Point Presentation	2	
Cluster as a Service: The Logical Design	Lecture	1	2
	Total Periods:	**11**	

Unit- IV :

Learning Outcomes:

1. To Understand the Technologies for Data Security in Cloud Computing. **[CO 4]**
2. To Learn the Workflow Management Systems & Architectures **[CO 4]**

Topic of syllabus covered	**Teaching Mode**	**Hours Required**	
		L	**T**
Chapter 7: Secure Distributed Data Storage in Cloud Computing			
Cloud Storage: from LANs TO WANs	Power Point Presentation	1	
Technologies for Data Security in Cloud Computing	Lecture	1	
Technologies for Data Security: Web Application Based	Lecture	1	
Technologies for Data Security: Multimedia	Lecture	1	
Chapter 8: Workflow Engine for Clouds			
Workflow Management Systems and Clouds	Lecture	1	
Architecture of Workflow Management Systems	Power Point Presentation	1	
Utilizing Clouds for Workflow Execution:Aneka	Lecture	1	
Case Study: Evolutionary Multi objective Optimizations	Lecture	2	
	Total Periods:	09	

Unit- V:

Learning Outcomes:

1. To Learn the SLA life cycle & its types in the cloud context. **[CO 5]**
2. To understand data security identity , its risks and challenges. **[CO 5]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Chapter 9: SLA Management in Cloud Computing			
Traditional Approaches to SLO Management	Lecture	1	
Types of SLA	Power Point Presentation	1	
Life Cycle of SLA	Lecture	1	
SLA Management in Cloud	Lecture	2	
Automated Policy-based Management	Lecture	1	
Chapter 10: Data Security in the Cloud			
the Idea of Data Security	Lecture	1	
State of Data Security in the Cloud	Lecture	1	
Homo Sapiens and Digital Information	Lecture	1	
Cloud Computing and Data Security Risk	Lecture	1	
Cloud Computing and Identity	Power Point Presentation	1	
Content Level Security— Pros and Cons	Power Point Presentation	1	
	Total Periods:	**10**	

Signatures of the Teacher

1.

Signature of the HOD

Date:

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS/IT 312*(A)– Embedded Systems

Lesson Plan

Academic Year	2018 - 19
Year & Semester	III Year II Semester
Regulation	R-16
Name of Faculty	Ch.VijayaMadhaviLakshmi

Course Objectives:

1. To demonstrate fundamental concepts of embedded systems.
2. To learn basic principles of designing embedded system software and architectures.
3. To understand various services offered by RTOS.
4. To gain knowledge of the embedded system development environment, and tools which are used for development and loading the code into target machine.

Course Outcomes:

1. Understand the role of basic hardware components in embedded systems.
2. Ability to choose appropriate embedded software architecture.
3. Be aware of the fundamental concepts of RTOS.
4. Ability to understand RTOS services like semaphores, message queues, mail boxes, pipes, etc.
5. Acquire the knowledge of embedded software design principles and able to differentiate between desktop versus real time operating systems.
6. Acquire the knowledge of hardware and software tools used for building and debugging embedded systems.

CO – PO and PSO Mapping Table

	PO1	PO2	PO3	PO4	PSO1	PSO2
CO 1	2	2	2		2	3
CO 2		2	2		2	3
CO 3		2	2	2	3	3
CO 4		2	2	2	2	3
CO 5				2	3	3
CO 6				2	3	3

Unit- I

Learning Outcomes

1. Familiarize with basic hardware components in embedded systems **CO1**
2. Familiarize with the various hardware Fundamentals **CO1**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
A First Look at the Embedded Systems: Examples of Embedded Systems (Telegraph, cordless Bar-code scanner,	Lecture	1	
Laser Printer, underground tank monitor, Nuclear Reactor Monitor	Lecture	1	
Typical Hardware	Lecture	1	
Hardware Fundamentals: Terminology, Gates,	Lecture	2	
A few other basic considerations, Timing Diagrams	Lecture	1	
Memory	Lecture	1	

Unit- II

Learning Outcomes

1. Familiarize with Interrupts **CO2**
2. Familiarize to choose appropriate embedded software architecture. **CO2**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Interrupts: Micro Processor Architecture	Lecture	1	
Interrupt Basics, The shared data problem, Interrupt Latency.	Lecture	1	
Survey of Software Architectures: Round-Robin, Round-Robin with Interrupt	Lecture	2	
Function Queue-Scheduling Architecture	Lecture	1	
Real Time Operating System Architecture	Lecture	1	
Selecting an Architecture.	Lecture	1	

Unit- III

Learning Outcomes

1. Familiarize with fundamental concepts of RTOS. CO3
2. Familiarize with RTOS services like semaphores, message queues, mail boxes, pipes, etc. CO4

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Real Time Operating Systems:	Lecture	1	
Tasks and Task states	Lecture	1	
Tasks and data Semaphores and shared data	Lecture	2	
More Operating System Services: Message Queues, Mail boxes and pipes	Lecture	1	

Timer Functions, Events	Lecture	1	
Memory Management	Lecture	1	
Interrupt Routines in an RTOS environment	Lecture	1	

Unit- IV

Learning Outcomes

Acquire the knowledge of embedded software design principles and able to differentiate between desktop versus real time operating systems. CO5

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Desktop Operating Systems versus RTOS	Lecture	1	
Need for Board Support Packages	Lecture	2	
Task management	Lecture	1	
Race conditions – priority inversion	Lecture	1	
Scheduling.	Lecture	1	
Basic Design Using a Real Time Operating System: Overview, Principles	Lecture	2	
An Example, Encapsulating Semaphores and Queues	Lecture	1	
Hard Real Time Considerations	Lecture	2	
Saving Memory Space, Saving Power.	Lecture	1	

Unit- V

Learning Outcomes

Familiarize hardware and software tools used for building and debugging embedded systems CO6

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Embedded Software Development Tools: Host and Target Machines,	Lecture	1	
Linker/Locators for Embedded Software	Lecture	1	
Getting Embedded Software into the target System	Lecture	1	
Debugging Techniques: Testing on Host Machine	Lecture	1	
Instruction Set Simulators,	Lecture	1	
The assert macro, using Laboratory Tools	Lecture	1	

Signatures of the Teachers
1.

Signature of the HOD

Date: 29/11/2019

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 123 – Programming for Problem Solving

Lesson Plan

Academic Year	2018 - 19
Year & Semester	I Year II Semester
Regulation	R-18
Name of Faculty	Dr.B.VaraPrasad Rao/ M.Srikanth /B.Prasanthi

Course Objectives:

- To know the basic problem solving process using Flow Charts and algorithms.
- To understand the basic concepts of control structures in C.
- To learn concepts of arrays, functions, pointers and Dynamic memory allocation in C.
- To use the concepts of structures, unions, files and command line arguments in C.

Course Outcomes:

- Develop algorithm and flowchart for simple problems.
- Use suitable control structures and arrays for developing code in C.
- Design modular structured programs using functions and recursion.
- Develop code for complex applications using structures, pointers and file handling features.

CO-PO Mapping:

	PO1	PO2	PO3	PO10
CSE123	3	2	2	2
CO1	**3**	**2**	**2**	**2**
CO2	**3**	**2**	**2**	
CO3	**3**			
CO4	**2**	**2**	**2**	

CO-PSO Mapping:

	PSO1	PSO2	PSO3
CSE123	3	3	2
CO1	**3**	**2**	
CO2	**2**	**3**	
CO3	**3**	**3**	**2**
CO4	**2**	**3**	

Unit- I

Learning Outcomes:

1. Discuss the basic fundamentals of programming, algorithms and programming hardware technologies.
2. Discuss about the number systems which are very useful for arithmetic operations.

Topic of syllabus covered	Teaching Mode	Hours Required		CO Mapping
		L	T	
Introduction to Programming: Introduction to components of a computer system	Lecture	2		**CO1**
Idea of Algorithm: Steps to solve logical and numerical problems	Lecture	2		**CO1**
Representation of Algorithm: Flowchart/Pseudocode with examples	Lecture & Presentation	2		**CO1**
from algorithms to programs; source code	Lecture & Presentation	2	1	**CO1**
variables (with data types) variables and memory locations	Lecture	1		**CO1**
Syntax and Logical Errors in compilation , object and executable code	Lecture	1		**CO1**
Arithmetic expressions and precedence.	Lecture & Demonstration	1		**CO1**
	Total :	**12**		

Unit- II

Learning Outcomes

1. To implement advanced applications using enumerated data types.
2. To implement the programs using the basic elements like iterative, nested and array functions.

Topic of syllabus covered	Teaching Mode	Hours Required		CO Mapping
		L	T	
Conditional Branching and Loops: Writing and evaluation of conditionals and consequent branching.	Lecture & Presentation	2		**CO2**
Iteration and loops	Lecture & Presentation	2		**CO2**
Arrays: Arrays (1-D, 2-D)	Lecture & Presentation	1	1	**CO2**
Character arrays and Strings	Lecture & Presentation	1		**CO2**

Basic Algorithms: Searching	Lecture& Demonstration	1		**CO2**
Basic Sorting Algorithms (Bubble, Insertion and Selection),	Lecture& Demonstration	3		**CO2**
Finding roots of equations	Lecture& Demonstration	1		**CO2**
	Total :	**12**		

Unit- III

Learning Outcomes

1. Discuss about the code reusability with the help of user defined functions.
2. To implement the user defined function calls, and parameter passing mechanisms using functions.

Topic of syllabus covered	**Teaching Mode**	**Hours Required**		**CO Mapping**
		L	**T**	
Function: Functions (including using built in libraries)	Presentation& Lecture	2		**CO3**
Parameter passing in functions	Presentation& Lecture	1		**CO3**
call by value, idea of call by reference	Lecture& Demonstration	1	1	**CO3**
Passing arrays to functions	Lecture& Demonstration	2		**CO3**
Recursion: Recursion, as a different way of solving problems.	Lecture& Demonstration	2		**CO3**
Example programs, such as Finding Factorial, Fibonacci series	Lecture& Demonstration	3		**CO3**
	Total :	**12**		

Unit- IV

Learning Outcomes

1. To learn and discuss the concepts of structures, unions, files and command line arguments in C.

Topic of syllabus covered	**Teaching Mode**	**Hours Required**		**CO Mapping**
		L	**T**	
Structure: Structures, Defining structures and	Lecture& Demonstration	1		**CO4**
Array of Structures	Lecture& Demonstration	2		**CO4**

Pointers: Idea of pointers, Defining pointers	Lecture& Demonstration	1		**CO4**
Use of Pointers in self-referential structures.	Lecture& Demonstration	2	1	**CO4**
File handling: Defining and opening a file, closing a file	Presentation & Demonstration	2		**CO4**
input/output operations on files using file handling functions	Presentation & Demonstration	2		**CO4**
random access to files	Presentation & Demonstration	1		**CO4**
	Total :	**12**		

Signatures of the Teachers

1.

2.

3. 31/12/18

Signature of the HOD

Date: 31-12-2018

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 214- Discrete Mathematics

Lesson Plan

Academic Year 2019 - 20

Year & Semester II Year , 3rd Semester

Regulation R-18

Name of Faculty **M.Vasavi/K.Aravinda/M.Naveen**

Course Objectives:

At the end of the course, the student will understand

1. Problem solving strategies and methods of proof.
2. Model and analyse computational processes using combinatorial methods.
3. Problem solving using recurrence relations.
4. Binary and n-ary relations and their applications.
5. The basic concepts of graphs.

Course Outcomes:

At the end of the course, the student will be able to

1. Apply Propositional logic and first order logic to solve problems.
2. Apply basic counting techniques to solve combinatorial problems.
3. Formulate and solve recurrence relations.
4. Formulate and solve graph problems.

CO – PO Mapping

	PO1	PO2	PO3	PO4
CO1	3	1		
CO2	3	2		
CO3	3			
CO4	3		2	2

CO - PSO Correlation Table

	PSO 1	PSO 2	PSO 3
CO1	3		
CO2	2		
CO3	2		2
CO4	3		2

Unit- I

Learning Outcomes

1.The concept of logical equivalence and its relationship to equivalent logic circuits and Boolean functions. Able to extend this to predicate calculus and in predicate calculus using quantifiers. [CO1]

2.Express English assertions in propositional calculus and in predicate calculus using quantifiers. [CO1]

3.Use the basics of set theory notation, Boolean operations on sets. [CO1]

4.Carry out simple direct and indirect proofs about domains like the integers and the real numbers, using quantified statements about these domains. Doing simple proofs

by mathematical induction. [CO1]

Topic of syllabus covered	Teaching Mode	Hours Required
		L
The Foundations: Logic and Proofs, Propositional Logic, Applications of Propositional Logic, Propositional Equivalences	Lecture	4
Predicates and Quantifiers, Nested Quantifiers, Rules of Inference	Lecture	2
Introduction to Proofs, Proof Methods and Strategy	Lecture	2
Basic Structures: Sets, Set Operations, Functions,	Lecture	2
Sequences and Summations, Cardinality of Sets.	Lecture	2

Unit- II

Learning Outcomes

1.Know the fundamentals of counting. [CO2]
2. Solve problems using permuatations and combinations. [CO2]
3. Enumerations of permutations and combinations for repetition of objects. [CO2]

Topic of syllabus covered	Teaching Mode	Hours Required
		L
Induction and Recursion: Mathematical Induction, Strong Induction and Well-Ordering	Lecture	3
Recursive Definitions and Structural Induction, Recursive Algorithms	Lecture	2
Counting: The Basics of Counting, The Pigeonhole Principle, Permutations and Combinations	Lecture	3
Generalized Permutations and Combinations, Generating Permutations and Combinations.	Lecture	4

Unit- III

Learning Outcomes

1.Calculate coefficients of generating functions. [CO3]
2.Solve homogenous and inhomogeneous Reccurence relations. [CO3]
3. Use Generating functions to solve Reccurence relations. [CO3]
4. Know the properties of Binary relations. [CO3]

Topic of syllabus covered	Teaching Mode	Hours Required
		L
Applications of Recurrence Relations, Solving Linear Recurrence Relations, Divide-and-	Lecture	4

Conquer Algorithms and Recurrence Relations, Generating Functions		
Inclusion–Exclusion, Applications of Inclusion–Exclusion	Lecture	3
Relations: Relations and Their Properties, n-ary Relations and Their Applications	Lecture	3
Representing Relations, Closures of Relations	Lecture	2

Unit- IV
Learning Outcomes

1. Solve problems to find partisions based on Equivalance relation. [CO4]
2. Know the properties of equivalence relations and partial orderings. [CO4]
3. Solve various graph problems [CO4]

Topic of syllabus covered	**Teaching Mode**	**Hours Required**
		L
Relations: Equivalence Relations	Lecture	3
Partial Orderings	Lecture	2
Graphs:Graphs and Graph Models, Graph Terminology and Special Types of Graphs,	Lecture	2
Representing Graphs and Graph Isomorphism,	Lecture	2
Connectivity, Euler and Hamilton Paths	Lecture	2
Planar Graphs, Graph Coloring	Lecture	2

Signatures of the Teachers

Signature of the HOD

1. Mveeje
2. K. Aravinda
3.

Date: 06/06/2019

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 215 – DATA STRUCTURES

Lesson Plan

Academic Year	2019 - 2020
Year & Semester	II Year I Semester
Regulation	R-18
Name of Faculty	Sri.M.Srikanth/ Smt.B.Prasanthi/Sri.M.Bramhaiah

Course Objectives:

At the end of the course, the student will understand

1. To teach efficient storage mechanisms of data for an easy access.
2. To design and implementation of various basic and advanced data structures.
3. To introduce various techniques for representation of the data in the real world.
4. To develop application using data structures.
5. To teach the concept of protection and management of data.
6. To improve the logical ability.

Course Outcomes:

At the end of the course, the student will be able to

1. Select appropriate data structures as applied to specified problem definition.
2. Implement operations like searching, insertion, and deletion, traversing mechanism etc. on various data structures.
3. Implement Linear and Non-Linear data structures, and design advance data structures for the real world problems.
4. Implement appropriate sorting/searching technique for given problem.

Unit- I

Learning Outcomes

1.	To analyse and compare algorithms for efficiency using asymptotic notations.	CO1
2.	Implement operations of ADT.	CO1
3.	Develop solutions to problems using lists.	CO1

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction: Analysis of an Algorithm,	Lecture &Demonstration	2	
Asymptotic Notations	Demonstration	2	
Time and Space trade-off.	Demonstration		1
Searching: Linear search and their Complexity analysis.	Lecture &Demonstration	1	
Binary search techniques and their Complexity analysis.	Demonstration	1	
Singly Linked lists	Lecture &Demonstration	2	
Representation in Memory	Demonstration	1	
Abstract Data Types (ADTs)	Demonstration	1	
List ADT – array based implementation	Demonstration	1	
linked list implementation	Demonstration	1	
Singly linked lists.	Demonstration	1	
	Total	**14**	

Unit- II

Learning Outcomes

1. Understand and implement the liked lists. CO2
2. Understand and implement the stacks and applications of stacks. CO2

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Circularly linked lists	Lecture &Demonstration	2	
Doubly-linked	Lecture &Demonstration	2	
Lists – applications of lists	Demonstration	1	
Polynomial Manipulation – All operations (Insertion, Deletion, Merge, Traversal).	Lecture &Demonstration	2	
Stacks: ADT Stack and its operations:	Lecture &Demonstration	2	
Algorithms and their complexity analysis	Demonstration		1
Applications of stacks	Lecture &Demonstration	1	
Expression conversion	Demonstration	1	
Postfix evaluation	Demonstration	1	
Corresponding algorithms and complexity and analysis.	Demonstration	1	
	Total	14	

Unit- III

Learning Outcomes

1. Analyse the different queues. CO3
2. Understand and implement the tree operations. CO3
3. Implement AVL tree rotations. CO3

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Queues: ADT Queue	Lecture &Demonstration	2	
types of Queue: Simple Queue	Lecture &Demonstration	1	
Circular Queue	Lecture &Demonstration	1	
Priority Queue	Lecture &Demonstration	2	
Operations on each type of Queues: Algorithm and their analysis.	Lecture &Demonstration	2	
Trees: Basic Tree Terminologies	Lecture &Demonstration	1	
Different types of trees: Binary Tree	Lecture &Demonstration	1	
Binary Search Tree	Flipped Class room	1	
AVL Tree	Lecture &Demonstration	2	
Tree operations on each of the trees and their algorithms	Lecture &Demonstration	1	
Applications of Binary Trees	Lecture &Demonstration		1
BTree definitions and algorithms.	Lecture &Demonstration	1	
	Total	**16**	

Unit- IV

Learning Outcomes

1. Analyse the different sorting techniques. CO4
2. Understand and implement the hashing techniques. CO4

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Sorting Algorithms: Bubble sort	Demonstration	1	
Selection sort	Demonstration	1	
Insertion sort	Demonstration	1	
Shell sort	Demonstration	1	
Radix sort	Demonstration	1	
Heap – Applications of heap	Lecture &Demonstration	2	
Hashing- Hash Functions	Lecture &Demonstration		1
Separate Chaining	Demonstration	1	
Open Addressing	Demonstration	1	
Rehashing	Demonstration	2	
Extendible Hashing	Demonstration	2	
	Total	**14**	

Signatures of the Teachers

1.

2.

3.

Signature of the HOD

Date:

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS -216 – Object Oriented Programming

Lesson Plan

Academic Year 2019 - 20

Year & Semester II Year , 3rd Semester

Regulation R-18

Name of Faculty **M.Srikanth/K.Siva Kumar/G.S.Raghavendra**

Course Objectives:

At the end of the course, the student should be able

At the end of the course, the student will understand

1. Understand the basic concepts of Java to design and develop secure Java applications.
2. Apply the concepts of exception handling, multi-threading, streams and applet programming.
3. Design browser supported GUI components.
4. Design AWT, Swing components, and event handling mechanism applications.

Course Outcomes:

At the end of the course, the student will be able to

1. Develop simple Java applications.
2. Design and implement APIs and Multitasking applications.
3. Design and implement, File management, and web based applications.
4. Develop GUI applications using AWT and Swing components.

CO - PSO Correlation Table

	PSO 1	PSO 2	PSO 3
CO 1	3	2	
CO 2	2	3	2
CO 3	2	3	3
CO 4	2	3	3

CO – PO Mapping

	PO1	PO2	PO3
CO 1	3		
CO 2		2	2
CO 3		2	2
CO 4		2	2

Unit- I

Learning Outcomes

1. Efficiently use java fundamentals to write basic programs. [CO 1]
2. Apply Inheritance to develop reusable programs. [CO 2]

Topic of syllabus covered	Teaching Mode	Hours Required
		L
The History and Evolution of Java, an Overview of Java.	Lecture Presentation	1
The primitive types, variables, type conversion and casting	Lecture Presentation	1
Automatic Type Promotion in Expressions, Arrays	Lecture Presentation	1
Operators, Control statements.	Lecture Presentation	1
Class fundamentals, Declaring the objects.	Lecture Presentation	1
Assigning Object Reference Variables, Introducing Methods	Lecture Presentation	1
Constructors and overloading of constructors	Lecture Presentation	1
The this keyword, Garbage Collection, the finalize() Method.	Lecture Presentation	1
Overloading Methods, Using objects as Parameters,	Lecture Presentation	1
Returning Objects, Introducing Access control, , Nested and Inner Classes, Varargs.	Lecture Presentation	1
Understanding static and final keywords	Lecture Presentation	1
Inheritance Basics, Using super, Creating multilevel Hierarchy	Lecture Presentation	1
Method Overriding, Dynamic Method Dispatch	Lecture Presentation	1
Using Abstract Classes, using final with Inheritance, The Object class.	Lecture Presentation	1
Use static Methods in an Interface	Lecture Presentation	1

Unit- II

Learning Outcomes

1. Develop programs using packages. [CO 2]
2. Explore the String and String Buffer classes. [CO 2]
3. Write error free programs using Exception handling. [CO 2]
4. Write programs using multithreading [CO 2]

Topic of syllabus covered	Teaching Mode	Hours Required
		L
Packages, Access Protection,	Demonstration	1
Importing Packages, Interfaces, Default Interface Methods,	Demonstration	1
Exploring the String and String Buffer classes	Lecture Presentation	2
Introduction and need to Exception Handling	Lecture Presentation	1
Keywords used in Exception Handling	Demonstration and Practice	2
Built in Exceptions and creating user defined Exception types	Lecture Presentation	1
Introduction to Multithreading, differences between process and thread	Lecture Presentation	1
Thread Life cycle stages	Lecture Presentation	1
Thread class and Runnable Interface	Presentation Demonstration	1
Creating Multiple threads	Presentation Demonstration	1
Synchronization in threads	Presentation Demonstration	1
Inter thread communication	Presentation Demonstration	2
Daemon threads, Deadlock, Thread groups	Lecture Presentation	1

Unit- III

Learning Outcomes

1. Write programs using Streams. [CO 2]
2. Demonstrate Usage of Generic and collection classes. [CO 2]
3. Develop and execute local and remote applets. [CO 3]

Topic of syllabus covered	Teaching Mode	Hours Required
		L
Introduction to Streams and Stream classes	Presentation Demonstration	1
Byte Streams	Lecture	1

Character Streams	Presentation	1
File class	Lecture	1
Introduction to Applets	Lecture Presentation	1
Generic Class, Method	Presentation Demonstration	1
Collections, List	Presentation Demonstration	1
Set, Queue	Presentation Demonstration	1
Life Cycle of an Applet	Presentation Demonstration	1
Applet creation and Applet tag attributes	Presentation Demonstration	2
Passing parameters to Applet, Remote applets	Presentation Demonstration	1
Color class and Graphics class	Presentation Demonstration	2

Unit- IV

Learning Outcomes

1. Develop GUI based applications using AWT and Event handling. [CO 4]
2. Develop web based applications using Swings. [CO 4]

Topic of syllabus covered	**Teaching Mode**	**Hours Required**
		L
Event handling using delegation event model	Presentation Demonstration	1
Events, Event Sources , Event classes	Presentation Demonstration	2
Mouse Events, Key Events	Presentation Demonstration	1
AWT components and Event Handling	Lecture Presentation	2

Windows, Panel, FileDialogBox	Lecture Presentation	1
Layout Managers	Presentation Demonstration	2
Adapter Classes	Presentation Demonstration	1
Menu, MenuBar	Presentation Demonstration	1
Introduction to Swing and Difference between AWT, Swing	Lecture Presntation	1
JFrame,Jcomponent	Presentation Demonstration	1
RadioButton, Tabbed Panes	Presentation Demonstration	1
JScrollPane ,JTree, JTable	Presentation Demonstration	1

Signatures of the Teachers

1. M. Srik H

2. K. Sivakumar

3. [illegible]

Signature of the HOD

Date: 06/06/19

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 221 – Computer Organization

Lesson Plan

Academic Year	2019 - 20
Year & Semester	II Year II Semester
Regulation	R-18
Name of Faculty	Dr.R.Lakshmi Tulasi/Smt. M.Vasavi /Smt. Z.Sunitha Bai

Course Objectives:

1. Working of computer system and the principles of instruction level architecture and instruction execution .
2. Concepts of I/O devices, hardware components in CPU, and its working principles.
3. The state of art in memory system design.
4. Concepts of computer arithmetic and advanced pipelining techniques.

Course Outcomes:

1. Define the structure of computer and construct control sequence for an instruction.
2. Demonstrate various I/O handling mechanisms and design control unit organization.
3. Illustrate I/O Organization and memory hierarchy.
4. Implement algorithms related to computer arithmetic, and develop a pipeline for consistent execution of instructions.

Unit- I

Learning Outcomes

1. Discuss the functionality of basic hardware components of computer. [CO1]
2. Explain the instruction set of a computer system. [CO1]
3. Describe the addressing modes of instructions. [CO1]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Basic structure of computers: Computer Types	Discussion	0.5	
Functional unit	Discussion	0.5	
Basic Operational concepts	Lecture	1	
Number Representation and Arithmetic	Lecture	1	
Character Representation	Lecture	0.5	
Performance	Lecture	0.5	
Instruction Set Architecture: Memory Location and addresses	Lecture	1	
Memory Location and addresses	Lecture	1	

Memory operations	Lecture	1	
Instructions and instruction sequencing	Lecture	1	
Addressing modes with example	Lecture	1	
Basic Input and Output operations	Lecture	1	
Stacks , Subroutines	Lecture	1	
Additional instructions, Encoding of machine instructions	Lecture	1	

Unit- II

Learning Outcomes

1. Demonstrate instruction execution. [CO1]
2. Explain the design of control unit. [CO2]
3. Discuss various data transfers schemes. [CO2]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Basic Input/ Output: Accessing I/O Devices	Lecture	1	
I/O Device Interface, Program-Controlled I/O	Lecture	1	
Interrupts: Enabling and Disabling Interrupts	Lecture	1	
Handling Multiple Devices	Lecture	1	
Controlling I/O Device Behaviour	Lecture	1	
Processor Control Registers	Lecture	1	
Basic Processing Unit: Some Fundamental Concepts	Lecture	1	
Instruction Execution	Lecture	1	
Hardware Components	Lecture	1	
Instruction Fetch and Execution Steps	Lecture	2	
Control Signals	Lecture	1	
Hardwired Control	Lecture	1	

Unit- III

Learning Outcomes

1. Discuss various input-output devices [CO2]
2. Describe functionality of direct memory access. [CO3]
3. Understand various I/O interfaces. [CO2]
4. Discuss the features of various types of computer memory. [CO3]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Input/output Organization: Bus Structure	Lecture	1	
Bus Operation: Synchronous Bus, Asynchronous Bus	Lecture	1	
Arbitration, Interface Circuits	Lecture	1	
PCI Bus	Lecture	1	
SCSI Bus	Lecture	1	

The Memory System: Basic Concepts	Lecture	1	
Semiconductor RAM Memories, Read-only Memories,	Lecture	1	
Direct Memory Access	Lecture	1	
Memory Hierarchy, Cache Memories,	Lecture	1	
Performance Considerations	Lecture	1	
Virtual Memory	Lecture	1	
Secondary Storage.	Lecture	1	

Unit- IV

Learning Outcomes

1. Explain the design of ALU in a computer system. [CO4]
2. Describe pipelining of instruction execution. [CO4]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Arithmetic: Addition and Subtraction of Signed Numbers	Lecture	2	
Design of Fast Adders	Lecture	1	
Multiplication of Unsigned Numbers	Lecture	1	
Multiplication of Signed Numbers	Lecture	1	
Fast Multiplication	Lecture	1	
Integer Division	Lecture	1	
Floating-Point Numbers and Operations.	Lecture	1	
Pipelining: Basic Concept, The Ideal Case	Lecture	1	
Pipeline Organization, Pipelining Issues	Lecture	1	
Data Dependencies, Memory Delays	Lecture	1	
Branch Delays, Resource Limitations	Lecture	1	
Performance Evaluation.	Lecture	1	

Signatures of the Teachers

1. R.V.J
2. M.Veera
3. T. Sunitha Bai

Signature of the HOD

Date: 16/11/2019

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 223 - Database Management Systems

Lesson Plan

Academic Year	2019 - 20
Year & Semester	II Year II Semester
Regulation	R-18
Name of Faculty	Dr.Ch.Aparna / K.Aravinda / Ch.Vijaya Madhavi Lakshmi

Course Outcomes

1. Illustrate the fundamental concepts of database and choose suitable database architectures for implementation.
2. Implement formal relational operations in relational algebra and SQL.
3. Design database relations using normalization process for relational databases and develop the Query processing and optimization techniques.
4. Develop the mechanism for multi-user database applications.

CO – PO –PSO Mapping

	PO1	PO2	PO3	PO4	PO10	PSO1	PSO2	PSO3
CO 1	2	2	2		2	3		2
CO 2	2			2		2	3	
CO 3		2	2			3		3
CO 4	2			2		3		3

Unit- I

Learning Outcomes

1. Describe fundamental concepts of database.
2. Explain various database architectures.
3. Design conceptual data model for the given specification.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Databases: Introduction-An Example, Characteristics of the Database Approach	Lecture	1	
Actors on the Scene- Workers behind the Scene	Lecture	1	
Advantages of Using the DBMS Approach	Lecture		1
A Brief History of Database Applications.	Lecture	1	
Overview of Database Languages and Architecture: Data Models, Schemas, and Instances	Lecture	1	

Three-Schema Architecture and Data Independence	Lecture	1	
Database Languages and Interfaces, The Database System Environment	Lecture	1	
Centralized and Client/Server Architectures for DBMSs, Classification of Database Management Systems	Lecture		1
Conceptual Data Modelling Using Entities and Relationships: Using High-Level Conceptual Data Models for Database Design	Lecture	1	
A Sample Database Application, Entity Types, Entity Sets, Attributes, and Keys	Lecture	1	
Relationship Types, Relationship Sets	Lecture	0.5	
Roles, and Structural Constraints, Weak Entity Types	Lecture	0.5	
Refining the ER Design for the COMPANY Database, ER Diagrams, Naming Conventions, and Design Issues	Demonstration		1

Unit- II

Learning Outcomes

1. Explain the basic concepts of relational data model.
2. Write relational algebra, Relational calculus and SQL expressions for a given user query.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
The Basic Relational Model: Relational Model Concepts	Lecture	1	
Relational Model Constraints and Relational Database Schemas	Lecture	0.5	
Update Operations, Transactions, and Dealing with Constraint Violations	Lecture	0.5	
Relational Database Design Using ER-to-Relational Mapping	Lecture		1
Formal Relational Languages: Unary Relational Algebra Operations, Relational Algebra Operations from Set Theory	Demonstration	1	
Binary Relational Operations: JOIN and DIVISION	Demonstration	1	
Additional Relational Operations	Demonstration		1
The Tuple Relational Calculus	Lecture	1	
The Domain Relational Calculus	Lecture	1	
SQL: SQL Data Definition and Data Types -	Demonstration	1	

Specifying Constraints in SQL			
Basic Retrieval Queries in SQL- INSERT, DELETE, and UPDATE Statements in SQL	Demonstration		1
More Complex SQL Retrieval Queries	Demonstration		1
Views (Virtual Tables) in SQL	Demonstration	0.5	
Schema Change Statements in SQL	Demonstration	0.5	

Unit- III

Learning Outcomes

1. Explain the query processing and optimization techniques.
2. Discuss the relational data base design algorithms.
3. Design a relational database that is in specified normal form.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Query Processing and Query Optimization Techniques: Translating SQL queries into Relational Algebra	Demonstration	1	
Algorithms for External Sorting	Lecture	1	
Algorithms for SELECT and JOIN Operations	Lecture	1	
Algorithms for PROJECT and SET Operations	Lecture	1	
Implementing Aggregate Operations and Outer Joins	Lecture	1	
Combining Operations using pipelining	Lecture	0.5	
Using Heuristics in query Optimization	Lecture	0.5	
Database Design Theory: Informal Design Guidelines for Relation Schemas	Lecture	0.5	
Functional Dependencies - Normal Forms Based on Primary Keys: 1NF, 2NF	Demonstration	0.5	
3NF	Demonstration		0.5
Boyce-Codd Normal Form	Demonstration		0.5
Multi valued Dependency and Fourth Normal Form	Demonstration	0.5	
Join Dependencies and Fifth Normal Form	Demonstration	0.5	
Normalization Algorithms: Inference rules, Equivalence	Demonstration	1	
Closure set and minimal cover in Functional Dependencies	Demonstration		1
Properties of Relational Decompositions	Demonstration		1
Algorithms for Relational Database Schema Design	Demonstration	1	
About Nulls, Dangling Tuples and Alternative Relational Designs	Lecture	1	

Unit- IV

Learning Outcomes

1. Describe the concepts of transaction processing.
2. Explain database concurrency control and recovery techniques.
3. Explain the discretionary and mandatory access control techniques.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Foundations of Database Transaction Processing: Introduction to Transaction Processing, Transaction and System Concepts	Lecture	1	
Desirable Properties of Transactions	Lecture	1	
Characterizing Schedules Based on Recoverability and Serializability	Lecture	1	1
Introduction to Protocols for Concurrency Control in Databases: Two-Phase Locking Techniques for Concurrency Control	Demonstration	1	
Concurrency Control Based on Timestamp Ordering	Lecture	1	1
Multi version Concurrency Control Techniques	Lecture	1	
Validation (Optimistic) Concurrency Control Techniques.	Lecture	1	
Introduction to Database Recovery Protocols: Recovery Concepts	Lecture	1	
Recovery Techniques Based on Deferred and immediate Update	Lecture	1	1
Shadow Paging	Lecture	1	
Database Security: Introduction to Database Security Issues	Lecture	1	
Discretionary Access Control Based on Granting and Revoking Privileges	Lecture	1	
Mandatory Access Control	Lecture	1	

Signatures of the Teachers

1.

2. C.V.M.K.

3. K. Aravinda

Signature of the HOD

Date: 15-11-2019

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 224 – Formal Languages & Automata Theory

Lesson plan for academic year 2019-20

Academic Year 2019 - 20

Year & Semester II Year II Semester

Regulation R-18

Name of Faculty Mr M.Srikanth/Mr E. Ramesh/Mr.M.Naveen

Course Objectives:

At the end of the course, the student will understand

1. Describe and formulate Finite Automata.
2. The concepts of regular languages and their properties.
3. Context Free Languages and their properties.
4. Context Sensitive languages, design the Turing Machines and classify the decidable and undecidable problems.

Course Outcomes:

At the end of the course, the student will be able to

1. Model, Compare and Annalise Finite Automata.
2. Apply mathematical methods to prove Regular Languages, grammars, and Automata.
3. Articulate Context Free Languages and Synthesize PDAs.
4. Design Turing Machines and analyze Decidable and Undecidable problems.

CO-PO & PSO Mapping Table:

	PO1	PO2	PO3	PO4	PO10	PSO1	PSO2	PSO3
CO1	3					3		2
CO2	2	3	2	3	2	3		
CO3	2	3	3	3	2	3	2	2
CO4	2	2	3		2	3	3	2

Unit- I

Learning Outcomes

1. Familiarize with basic TOC concepts.
2. Design DFA,NFA and Epsilon-NFA.
3. Implement equivalence between NFA and DFA.
4. Design MOORE and MELAY machines.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Finite Automata.	Lecture	1	
The central concepts of Automata theory - Alphabets,	Lecture,	1	

Strings, Languages.	Demonstration		
An Informal picture of finite automata	Demonstration	1	
Deterministic Finite Automata: Definition of DFA, How a DFA Process strings.	Lecture	1	
Simpler Notations for DFA, Extending the transition function to strings. The extended transition function	Demonstration	1	
The language of DFA & Construction of DFA	Demonstration	1	
Non deterministic finite automata, Definition of NFA, The language of NFA.	Demonstration	2	
Equivalence between NFA and DFA.	Demonstration	1	
Equivalence of NFA and DFA problems	Demonstration	2	
Equivalence theorem	Demonstration	1	
FA with $\in$ transitions	Demonstration	1	
Use of $\in$ - transition, notation for an $\in$ - NFA, Epsilon closures,	Demonstration	1	
extended transitions and languages	Demonstration	1	
Equivalence between NFA with $\in$ &NFA without $\in$	Demonstration	1	
Eliminating the epsilon transitions	Demonstration	1	
applications Finite automata	Demonstration	1	
Moore machine	Demonstration	1	
Melay Machine	Demonstration	1	
Equivalence between moore and melay machines	Demonstration	1	

Unit- II

Learning Outcomes

1. Implement regular expressions for the given languages.
2. Design equivalence between FA and RE.
3. Apply minimization algorithms for FA.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Regular Expression, The operators of Regular expressions.	Lecture	1	
Building the regular expression, precedence of Regular expression.	Lecture	1	
Algebraic laws of regular expressions.	Lecture	1	
Properties of Regular Languages	Demonstration	1	
Pumping lemma for regular languages	Demonstration	1	
Applications of the pumping lemma	Demonstration	1	

Closure Properties of Regular Languages (Union, concatenation, Kleene closure)	Demonstration	1	
Closure Properties of Regular Languages (Compliment, Substitution, Homomorphism etc.)	Demonstration	1	
From DFA to regular expression	Demonstration	1	
Converting Regular expressions to automata.	Demonstration	1	
Applications of Regular expressions.	Demonstration	1	
Minimization of DFA – MY HILL Nerode theorem	Demonstration	1	
Minimization of DFA – Marking Algorithm	Demonstration	1	

Unit- III

Learning Outcomes

1. Implement context free grammars and PDA.
2. Perform simplification of CFG.
3. Implement CNF and GNF.
4. Apply Pummping lemma theorem for regular languages.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Grammars	Demonstration	1	
Context- Free grammars and languages	Demonstration	1	
Derivations- Left most derivation and Right most derivation	Demonstration	1	
Construction of Parse trees	Demonstration	1	
Parsing – Top down and Bottom up parsing	Demonstration	1	
Ambiguous grammars	Lecture	1	
Exercises problems	Lecture	1	
Definition of the Pushdown automata	Demonstration	1	
Construction of PDA from languages, Accepting by final states, Acceptance by empty stack.	Demonstration	1	
Construction of PDA from grammars	Demonstration	1	
Equivalences of PDA's and CFG's	Demonstration	1	
Simplification of CFG	Demonstration	1	
Normal forms – Chomsky Normal form (CNF)	Lecture	1	
Normal forms – Greibach Normal form (GNF)	Demonstration	1	
Application of Context free grammars	Demonstration	1	
The pumping lemma for context free languages.	Demonstration	1	
Applications of pumping lemma for CFL's	Demonstration	1	
Closure properties for context free languages (Union, Concatenation, Kleene closure)	Demonstration	1	
Closure properties for context free languages (Intersection, Compliment, Homomorphism, and Inverse Homomorphism)	Demonstration	1	

Unit- IV

Learning Outcomes

1. Design TM for REL's.
2. Understand the concept of undecidability.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to CSL	Lecture	1	
Construction of CSG	Demonstration	1	
Construction of CSG for computable functions	Demonstration	1	
Introduction to Turing Machines	Lecture	1	
Construction of TM for languages	Demonstration	1	
Construction of TM for computable functions	Demonstration	1	
Programming techniques for Turing machines.	Demonstration	1	
Transition diagrams for Turing machines, The language of a Turing machine, The Turing machine and halting.	Demonstration	1	
Extension to basic Turing machines Multi tape Turing machines,Equivalence of One tape and multiple TM's.	Demonstration	1	
Undecidability, a language that is not recursively enumerable.	Demonstration	1	
An undecidable problem that is RE.	Demonstration	1	
Undecidability problems about TM, Post's Correspondence problem	Demonstration	1	

Signatures of the Teachers

1. M. Sik.M
2.
3. M.N

Signature of the HOD

Date: 07/11/2019

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

MC004 – DESIGN THINKING AND PRODUCT INNOVATION

Lesson Plan

Academic Year 2019 - 20

Year & Semester II Year I Semester-CS

Regulation R-18

Name of Faculty Sri P.Venkateswara Rao/Dr.A.Srinagesh/ Smt.K.Venkata Ramana

Unit- I

Learning Outcomes:

1. Identify the design thinking phases and processes .
2. Interpret the concepts of Design thinking and visualize from a user's viewpoint.

Topic of syllabus covered	Teaching Mode	Hours Required
		L
Unit-I : Introduction to Design Thinking-definition	Lecture	1
Introduction to Design Thinking-Concepts, Principles	Lecture	1
Origin and Importance of Design Thinking-Examples	Activity	1
Phases of Design Thinking	Collaboration	1
IDEO Features & Principles of Design Thinking,	Activity	1
Applications of Design Thinking-Case Study-Questionnaire	Activity	1
Applications of Design Thinking-Case Study-Practical examples	Lecture	1
Role of Research in Design Thinking- Use of Surveys & Types	Lecture	1
Total No. of Periods		8

Unit- II

Learning Outcomes:

1. Plan product, service, idea research activities to gather and empathize from a user's viewpoint.
2. Investigate a simple design problem to determine its underlying cause.

Topic of syllabus covered	Teaching Mode	Hours Required
		L
Modules of Design Thinking —Inspiration -Example	Lecture	1
Inspiration- Introduction	Activity	1
Inspiration- methods & tools-STEEP Analysis	Lecture	1
Inspiration - methods & tools-Strategic Priorities	Activity	1
Inspiration - methods & tools used in Explore-Activity System	Lecture	1
Inspiration - methods & tools used in Explore-Stake holder Mapping	Activity	1
Empathize phases of Design Thinking	Activity	1
Case study –Discussion-opportunity Framing-Observation	Collaboration	1
Total No. of Periods		8

Unit- III

Learning Outcomes:

1. To improve and develop Ideate techniques to help arrive at the best solution and evaluation.
2. Collaborate and take part in group thinking and experiment with different solutions.

Topic of syllabus covered	Teaching Mode	Hours Required
		L
Introduction- Needing Finding, User Persona —Example	Lecture	1
Experiment-Ideation-Introduction	Activity	1
Ideation –SCAMPER methods & tools-Prototyping	Collaboration	2
Ideation –POEMS methods & tools-Co Creation Concepts	Activity	2
Concept Synthesis-Strategic requirements-Quick Wins	Activity	1
Engage and Evolve phases of Design Thinking Examples	Lecture	1
Total No. of Periods		8

Unit- IV

Learning Outcomes:

1. Identify design thinking approaches for business challenges.
2. Develop innovative thinking and creative problem solving.

Topic of syllabus covered	Teaching Mode	Hours Required
		L
Design Thinking applied in Business & Strategic Innovation	Lecture	1
Design Thinking applied in Business & Strategic Innovation	Lecture	1
Ten Design Thinking principles that redefine business	Lecture	1
Business challenges: Growth, Predictability, Change	Lecture	1
Maintaining Relevance, Extreme competition, Standardization	Lecture	1
Creative Culture, Strategy & Organization-Examples	Lecture	1
Design Thinking approaches-Introduction	Lecture	1
Design Thinking approaches	Lecture	1
Total No. of Periods		8

Signatures of the Teachers
1.
2.
3.

Signature of the HOD

Date:

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING
CS 511 – Advanced Data Structures & Algorithms
Lesson Plan

Academic Year	2017 - 18
Year & Semester	I Year I Semester
Regulation	R-17
Name of Faculty	K.Aravinda

Course Objectives:

1. To learn and implement hashing techniques.
2. To understand the concepts of data structures such as Disjoint sets, Binary Search trees, balanced search Trees.
3. To understand the working of graph algorithms like finding shortest paths and minimum spanning trees.
4. To learn greedy and dynamic programming algorithms.
5. To understand the string matching algorithms.

Course Outcomes:

1. Implement hashing techniques for solving the given problem.
2. Implement the concepts of data structures such as disjoint sets, Binary search trees and balanced search trees.
3. Implement graph algorithms like finding shortest paths and minimum spanning trees.
4. Implement greedy and dynamic programming algorithms.
5. Implement the string matching algorithms.

Unit- I
Learning outcomes:

1. Implementation of hash algorithms.
2. Practice Binary search tree operations.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
'C' concepts like arrays, pointers, functions, structures, Self- referential structures.	Lecture	1	
Singly Linked List operations	Lecture	1	
Hash Tables - Direct Address Tables	Lecture	1	
Hash Tables, Hash Functions	Lecture	1	
Separate Chaining Introduction	Lecture	1	

Analysis of Separate Chaining, Introduction to Open Addressing	Lecture	1	
Linear Probing And Quadratic Probing with examples	Lecture		1
Double Hashing Implementation	Lecture	1	
Hash Functions, Perfect Hashing with examples	Lecture	1	
Binary Search Tree Insertion, Search, Traversals	Lecture		1
Binary Search Tree Deletion, Finding Minimum and Maximum	Lecture	1	
Randomly Built Binary Search Tree	Lecture	1	

Unit- II

Learning outcomes:

1. Discuss Red Black tree operations.
2. Implementation of B-tree operations.
3. Understand the concepts of Binomial heap.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Red Black Tree - Properties, Rotations and Insertion with an example	Lecture	1	
Red Black Tree - Left Rotation and Right Rotation algorithms with example	Lecture	1	
Red Black Tree - Insertion algorithm with example	Lecture	1	
Red Black Tree Deletion with example	Lecture	1	
B-Tree Insertion with example	Lecture	1	
B-Tree Insertion algorithm	Lecture	1	
B-Tree Deletion with example	Lecture	1	
B-Tree Deletion algorithm	Lecture	1	
Binomial Trees and Heaps	Lecture	1	
Operations on Binomial Heap Algorithms with examples	Lecture	1	
Binomial Heap Insertion with example	Lecture	1	
Binomial Heap Insertion, Deletion, Decrease a Key	Lecture	1	

Unit- III

Learning outcomes:

1. Implementation of graph traversals.
2. Discuss the concept of minimum spanning trees.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Disjoint Sets operations - Union, Find With Examples	Lecture	1	
Elementary Graph Algorithms	Lecture	1	
Breadth First Search with Examples and Implementation using Adjacency Matrix	Lecture	1	
Depth First Search with Examples and Implementation using Adjacency Matrix	Lecture	1	1
Breadth First Search using Adjacency List Representation	Lecture	1	
Depth First Search Using Adjacency List Representation	Lecture	1	
Minimum Spanning Trees: Kruskal's Algorithm with example	Lecture	1	
Prim Algorithm with example.	Lecture	1	
Analysis of Prim, Kruskal Algorithms	Lecture	1	1

Unit- IV

Learning outcome:

1. Explain various concepts regarding dynamic programming.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Single-Source Shortest Paths - The Bellman-Ford algorithm	Lecture	2	
single-source shortest paths in directed acyclic graphs	Lecture	1	
Single Source Shortest Path - Dijkstra's algorithm with example	Lecture	1	
All Pairs Shortest Path: he Floyd-Warshall algorithm with example	Lecture	1	
Dynamic Programming - Optimal Binary Search Tree with example	Lecture	2	
Algorithm – OBST, Elements of dynamic programming	Lecture	1	
Dynamic Programming - Matrix Chain Multiplication example	Lecture	1	
Algorithm Of Matrix Chain Multiplication	Lecture	1	
Longest Common Sequence Using Dynamic	Lecture	1	

Programming example			
Longest Common Sequence algorithm	Lecture	1	

Unit- V

Learning outcomes:

1. Practice various greedy algorithms.
2. Explain various string matching algorithms.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Greedy Approach - Activity Selection Problem Using Example and algorithm	Lecture	1	
Elements Of The Greedy Strategy with examples, Task Scheduling algorithms with examples	Lecture	1	
Huffman Codes with examples	Lecture	1	1
The naive string-matching algorithm	Lecture	1	
String Matching with Finite Automata	Lecture	1	
Robin Karp Algorithms	Lecture	1	
Compute Prefix calculation for KMP String Matching algorithm	Lecture	2	1
The Knuth-Morris-Pratt algorithm	Lecture	1	1

K. Aravinda
Signature of the Teacher

Signature of the HOD

Date: 23/08/2018

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 512 – Multi-core Architectures & Programming

Lesson Plan

Academic Year	2019 - 20
Year & Semester	M.Tech I Semester
Regulation	R-17
Name of Faculty	P.Venkateswara Rao

LECTURE PLAN FOR THE ACADEMIC YEAR 2019- 2020

Course Objectives:

1. Understand the challenges in parallel and multi-threaded programming.
2. Learn about the various parallel programming paradigms, and solutions.

Course Outcomes:

1. Identify performance related parameters in the field of Computer architecture.
2. Identify the limitations of ILP and the need for multi-core architectures.
3. Solve the issues related to multiprocessing and suggest solutions.
4. Point out the silent features of different multi-core architectures and how they exploit parallelism.
5. Understand the concept of multi threading and OPENMP.

Unit- I

Learning Outcomes

1. Illustrate the challenges in parallel and multi threaded programming

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Multi-Core Architecture, Motivation for concurrency in Software	Lecture, Presentation	1	

Parallel Computing Platforms, Parallel Computing in Multiprocessors	Lecture,Demonstration	2	
Differentiating Multi-Core Architectures From Hyper-Threading Technology	Lecture, Demonstration		1
Multi-Threading on Single-Core Versus Multi-Core Platforms, Understanding Performance	Lecture, Demonstration	2	
Amdahl' Law, Growing Returns: Gustafson's Law	Lecture, Flipped class room	1	
Defining Threads, System View of Threads	Lecture	1	
Threading above the Operating System, Threads Insidethe OS, Threads Inside the Hardware	Lecture, Flipped class room	2	
What Happens When a Thread is Created, Application Programming Models and Threading	Lecture, Flipped class room		2

Unit- II

Learning Outcomes

1. Explain the various parallel programming paradigms and solutions.

Topic of syllabus covered	**Teaching Mode**	**Hours Required**	
		L	**T**
Fundamental Concepts of Parallel Programming Designing for Threads	Lecture, Flipped class room	2	
Task decomposition, Data Decomposition, Data Flow Decomposition	Lecture, Flipped class room	2	
Implication of Different Decomposition, Implications of Different Decompositions, Challenges You'll Face	Lecture		2

Parallel Programming Patterns	Lecture	2	
A motivating Problem: Error Diffusion, Analysis of the Error Diffusion Algorithm	Lecture	2	
An alternate Approach: Parallel Error Diffusion, Other Alternatives	Lecture	2	

Unit- III

Learning Outcomes

1. Demonstrate synchronization primitives.

Topic of syllabus covered	**Teaching Mode**	**Hours Required**	
		L	**T**
Threading And Parallel Programming Constructs	Lecture	1	
Synchronization, Critical Sections	Lecture, Demonstration		2
Deadlock, Synchronization Primitives	Lecture		1
Semaphores, Locks, Condition Variables	Lecture	1	
Messages, Flow Control- Based Concepts, Fence, Barrier	Lecture	1	
Implementation-Dependent Threading Features	Lecture	1	
Threading APIs: Threading APIs For Microsoft Windows,Win32/MFC Thread APIs, Threading APIs For Microsoft .NET Framework,	Lecture	2	
Creating Threads, Managing Threads, Thread Pools, Thread	Lecture	1	
Mapping Threads, Thread Synchronization, Signaling, Compilation And Linking	Lecture		2

Unit- IV

Learning Outcomes

1. Develop shared memory programs using OpenMP

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Open MP: A Portable Solution for Threading Challenges in Threading A Loop	Lecture	2	
Loop-Carried dependence, Data-race Conditions, Managing Shared And Private Data	Lecture		1
Loop Scheduling And Portioning, Effective Use of Reductions	Lecture	1	
Loop Scheduling And Portioning, Effective Use of Reductions	Lecture	2	
Minimizing Threading Overhead, Work-Sharing Sections, Performance-Oriented Programming	Lecture		1
Using Barrier And No Wait, Interleaving single-Thread and Multi-Thread Execution	Lecture, Demonstration	1	
Data Copy-In And Copy-Out, Protecting Updates of Shared Variables	Lecture, Demonstration	1	
Intel Task Queuing Extension to Openmp, Openmp Library Functions	Lecture, Demonstration	2	
Openmp Environment Variables, Compilation, Debugging Performance	Lecture	1	

Unit- V

Learning Outcomes

1. Compare and contrast programming for serial processors and programming for parallel processors

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Solutions to Common Parallel Programming Problems Too	Lecture, Demonstration	1	

many threads			
Data Races, Deadlocks And Live Locks, Deadlock	Lecture	2	
Heavily Contended Locks, Priority Inversion	Lecture	1	
Solutions For Heavily Contended Locks, Non-Blocking Algorithms, ABA Problem	Lecture, Demonstration		1
Cache Line Ping-Ponging ,Memory Reclamation Problem, Recommendations	Lecture, Demonstration	2	
Thread-Safe functions and Libraries, Memory Issues, Bandwidth ,Working In the Cache	Lecture, Demonstration		1
Memory Contention, Cache-Related issues, False Sharing	Lecture, Demonstration	1	
Memory consistency, Current IA-32 Architecture, Itanium Architecture	Lecture		1
High-Level Languages, Avoiding Pipeline Stalls on IA-32 , Data Organization For High Performance	Lecture	2	

Signature of the Teacher

Signature of the HOD

Date: 18/2/2020

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 513 – DATA SCIENCE

Lesson Plan 2019-20

Academic Year	2019 – 20
Year & Semester	M.Tech I Year I Semester
Regulation	R-17
Name of Faculty	G.S.Raghavendra ,Assistant Professor, CSE

Course Objectives

1. Identify the field of data analytics-background and key concepts.
2. Know the basics of R programming.
3. Develop and gain an understanding of statistical analysis in R programming.
4. Have the knowledge of cluster & classification techniques used in R language.

Course Outcomes

1. Find a meaningful pattern in data.
2. Graphically interpret data.
3. Implement the analytic algorithms.
4. Handle large scale analytics projects from various domains.
5. Develop intelligent decision support systems.

Unit- I

Learning Outcomes

1. Understand types of data and their structures. [CO1,CO2]
2. Analyse various types of modelling data and its functionalities. [CO1]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Data Mining Basics	Lecture	3	
Types of attributes, Levels of measurement	Lecture& Demonstration	2	
Multi-dimensional Modelling, LAP operations	Lecture	4	
Introduction to statistical learning	Lecture	3	

Unit- II

Learning Outcomes

1. Applying techniques of central tendency to find skewness of data. [CO2,CO3]
2. Evaluate relation between measures of central tendency and dispersion. [CO2]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Mean	Lecture & Demonstration	1	
Median	Lecture & Demonstration	1	
Mode	Lecture & Demonstration	1	

Symmetric data	Lecture & Demonstration	2	
Relation between mean,median and mode	Lecture & Demonstration	2	
Types of skewness	Lecture & Demonstration	1	
Measures of dispersion	Lecture & Demonstration	4	

Unit- III

Learning Outcomes

1. Understand various types of tests. [CO3]
2. Analyse how the generation, testing of hypothesis is done on data. [CO3]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Statistical hypothesis generation and testing	Lecture & Demonstration	2	
Chi-Square test	Lecture & Demonstration	2	
t-Test	Lecture & Demonstration	3	
Analysis of variance	Lecture & Demonstration	3	
Correlation analysis	Lecture & Demonstration	2	

Unit- IV

Learning Outcomes

1. Learn about classification and regression techniques. [CO3, CO4]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Regression analysis	Lecture & Demonstration	2	
Classification basics	Lecture	2	
Types of classification	Lecture	8	

Unit- V

Learning Outcomes

1. Learn about clustering of data. [CO4, CO5]
2. Identify association between data and find patterns among them. [CO5]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Clustering	Lecture	6	
Association rules analysis	Lecture	4	
Sensitivity Analysis	Lecture	2	

Signatures of the Teachers

Signature of the HOD

Date: 18/2/2020

1.

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 521 – MACHINE LEARNING

Lesson Plan

Academic Year: 2018 – 19

Year & Semester: M.Tech II Semester

Regulation: R -17

Name of the Faculty: Dr N Venkateswara Rao

Course Objectives:

1. To introduce students to the basic concepts and techniques of Machine Learning.
2. To develop skills of using recent machine learning software for solving practical problems.
3. To gain experience of doing independent study and research.

Course Outcomes:

1. Describe and design the concepts of learning.
2. Describe and apply learning algorithms.
3. Explain the first principles of neural networks.
4. Describe basics of sampling theory and hypothesis testing.
5. Explain Bayesian learning theorem.

Unit- I

Learning Outcomes

1. Explain various machine learning techniques. CO1
2. Discuss various concept learning techniques. CO2

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Overview Of Machine Learning	Lecture	1	
Different types of machine learning techniques	Lecture	1	
Designing a learning system	Lecture	1	
Concept Learning - General To Specific Ordering	Leture	1	
Concept Learning Task	Lecture, Interaction	1	
Concept Learning	Lecture	1	
Maximally Specific Hypothesis	Lecture, Demonstration	1	
Find-S Algorithm	Lecture, Demonstration	1	

Version Spaces	Lecture	1	
Candidate Elimination Algorithm	Lecture, Interaction	1	
Remarks On Version Spaces	Lecture	1	
Inductive Bias In Concept Learning	Lecture	1	

Unit- II

Learning Outcomes

1. Explain decision tree representation for supervised learning. CO1
2. Construction of decision tree for given data. CO2
3. Represent the perceptron and back-propagation networks. CO3

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Decision Tree (DT) Learning	Lecture	1	
Decision Tree representation	Lecture	2	
Appropriate problems for DT learning	Lecture, Interaction	1	
Decision Tree learning algorithm	Lecture, Demonstration	2	
Hypothesis Space Search In Decision Tree	Lecture, Demonstration	1	
Inductive Bias In Decision Tree	Lecture	2	
Issues in Decision Tree learning	Lecture, Interaction	1	
Introduction to Neural Networks (NN)	Lecture	1	
Neural Network Representations	Lecture, Discussion	1	
Appropriate problems for NN	Lecture	1	
Perceptron Networks	Lecture, Discussion	2	
Multi-layer Neural Networks	Lecture, Interaction	1	
Back Propagation Algorithm	Lecture, Interaction	2	
Remarks on Back Propagation Algorithm	Lecture	1	

Unit- III

Learning Outcomes

1. Discuss the evaluation of hypothesis. CO4
2. Explain various Bayesian learning methods. CO5

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Evaluating Hypothesis	Lecture	1	
Estimating Hypothesis Accuracy	Lecture	1	
Basics of sampling theory	Lecture	1	
Deriving confidence intervals	Lecture, Interaction	1	
Difference in error of two hypothesis	Lecture, Interaction	1	
Comparing Learning Algorithms	Lecture, Demonstration	1	
Bayesian Learning	Lecture, Demonstration	2	
Maximum Likelihood Hypothesis	Lecture, Demonstration	2	
Maximum Likelihood Hypothesis	Lecture, Demonstration	2	
Gibbs algorithm	Lecture	1	
EM algorithm	Lecture	1	

Unit- IV

Learning Outcomes

1. Discuss various computational learning theories. CO4

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Computational Learning Theory	Lecture	1	
Sample Complexity For Finite Hypothesis Space	Lecture	1	
Sample Complexity For Infinite Hypothesis Space	Lecture	2	
Mistake Bound Model Of Learning	Lecture, Interaction	2	

Unit- V

Learning Outcomes

1. Demonstrate instance based learning (IBL) . CO4
2. Discuss various genetic algorithms. CO2

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Instance Based Learning - K-NN Algorithm	Lecture	1	
Radial Basis Functions	Lecture, Interaction	1	
Case Based Reasoning	Lecture	1	
Remarks On Lazy And Eager Learning	Lecture, Discussion	2	
Introduction to Genetic algorithms	Lecture	1	
Hypothesis space search	Lecture, Demonstration	2	
Genetic Programming	Lecture	2	
Models of evaluation and learning	Lecture	2	

Signatures of the Teacher

1.

Signature of the HOD

Date:

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING
CS- 522 (R -17) CLOUD COMPUTING
Lesson Plan

Academic Year	2018 - 19
Year & Semester	I Year M – Tech II Semester
Regulation	R-17
Name of Faculty	Sri.P.Venkateswara Rao

Course Objectives:

1. To understand the different Cloud Deploy & Service Models.
2. To understand the Integrate Enterprise cloud environments.
3. To understand the Cloud Virtual Machines Migration and cloud enhancing service.
4. To learn Secure Distributed Data Storage and work flow engines for clouds.
5. To understand the Data security and SLA Management

Course Outcomes :

CO1. Explain different Cloud Deploy & Service Models.

CO2. Analyze the integrated enterprise cloud environments and Virtual Machines Migrations.

CO3. Describe the Cloud Virtual Management of Virtual Infrastructures and cloud enhancing service secure distributed data storage.

CO4. Analyse Aneka—Integration and work flow engines for clouds.

CO5. Discuss the data security, LA Management and HPC for cloud

Unit- I:

Learning Outcomes:

1. To Understand the roots of cloud computing technologies. **[CO 1]**
2. To describe layers and types of clouds. **[CO 1]**
3. To learn Cloud Seven Step Migration Model phases. **[CO 1]**
4. To describe different SaaS Integration Products and Platforms. **[CO 1]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Chapter 1 : Introduction To Cloud Computing			
Roots of Cloud Computing	Power Point Presentation	1	
Layers and Types of Clouds	Power Point Presentation	0.5	
Desired Features of Cloud	Lecture	0.5	
Cloud Infrastructure Management	Lecture	1	
Infrastructure as a Service Providers	Lecture	1	
Platform as a Service Providers	Lecture	1	
Challenge and Risks	Lecture	0.5	
Chapter 2 : Seven-Step Model of Migration into a Cloud.			
Broad Approaches to Migrating into the Cloud	Lecture	0.5	
The Seven-Step Model of Migration into a Cloud	Power Point Presentation	1	
Chapter 3 : Enriching the 'Integration as a Service' Paradigm for the Cloud Era			
Introduction to SaaS & challenges of SaaS paradigm	Lecture	0.5	
Approaching the SaaS integration	Lecture	0.5	
New integration scenarios & integration methodologies	Lecture	1	
Saas integration products and platforms	Power Point Presentation	1	
SaaS Integration Services	Lecture	1	
Business to Business Integration(B2Bi) Services	Lecture	1	
A Framework of Sensor-Cloud Integration	Power Point Presentation	1	
	Total Periods:	**13**	

Unit- II :

Learning Outcomes:

1. To Learn Enterprise cloud environment deployment Models. **[CO 2]**
2. To understand VM Life Cycle & Types. **[CO 3]**
3. To Learn the VM Migration Techniques and VM Actions. **[CO 3]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Chapter 4 : The Enterprise Cloud Computing Paradigm			
Enterprise Cloud deployment models	Lecture	1	
Issues for Enterprise Applications on the Cloud	Lecture	1	
Enterprise Cloud Technology and Market Evolution & Business Drivers	Power Point Presentation	1	
The Cloud Supply Chain	Lecture	1	
Chapter 5 : Virtual Machines Provisioning and Migration Services			
Virtual Machines Life Cycle	Power Point Presentation	1	
Virtual Machine Provisioning and Manageability	Lecture	1	
Virtual Machines Types	Demonstration	1	
Virtual Machine Migration Services	Power Point Presentation	1	
VM Provisioning and Migration in Action	Lecture	1	
Provisioning in the Cloud Context	Lecture	2	
Aneka VM Cloud Provision	Power Point Presentation	1	
	Total Periods:	**12**	

Unit- III :

Learning Outcomes:

1. To Learn the Management of Virtual Machines for Cloud Infrastructures **[CO 3]**
2. To Understand the Technologies for Data Security in Cloud Computing. **[CO 3]**
3. To Learn the Workflow Management Systems & Architectures **[CO 3]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Chapter 6: On the Management of Virtual Machines for Cloud Infrastructures			
The Anatomy of Cloud Infrastructures,	Lecture	1	
Distributed Management of Virtual Infrastructures	Lecture	2	
Scheduling Techniques for Advance Reservation of Capacity	Power Point Presentation	1	
Capacity Management to meet SLA Commitments	Power Point Presentation	1	
Chapter 7: Enhancing Cloud Computing Environments Using a Cluster as a Service:			
RVWS Logical Design	Power Point Presentation	2	
Cluster as a Service: The Logical Design	Lecture	1	
Chapter 8: Secure Distributed Data Storage in Cloud Computing			
Cloud Storage: from LANs TO WANs	Power Point Presentation	1	
Technologies for Data Security in Cloud Computing	Lecture	1	
Technologies for Data Security: Web Application Based	Lecture	1	
Technologies for Data Security: Multimedia	Lecture	1	
	Total Periods:	**12**	

Unit- IV:

Learning Outcomes:

1. To Learn the Aneka Integration of private and public clouds. **[CO 4]**
2. To understand workflow engine for clouds. **[CO 4]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Chapter 9: Aneka—Integration of Private and Public Clouds			
Technologies and Tools for Cloud Computing,	Lecture	2	
Hybrid Cloud Implementation	Power Point Presentation	2	
Visionary thoughts for Practitioners	Lecture	1	
Chapter 10: Workflow Engine for Clouds			
Workflow Management Systems and Clouds	Lecture	1	
Architecture of Workflow Management Systems	Lecture	2	
Utilizing Clouds for Workflow Execution:Aneka	Lecture	2	
Case Study: Evolutionary Multi objective Optimizations	Lecture	2	
	Total Periods:	**12**	

Unit- V:

Learning Outcomes:

1. To Learn the SLA life cycle & its types in the cloud context. **[CO 5]**
2. To understand data security identity, its risks and challenges. **[CO 5]**
3. To understand the HPC on Clouds. **[CO 5]**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Chapter 11: SLA Management in Cloud Computing			
Traditional Approaches to SLO Management	Lecture	1	
Types of SLA	Power Point Presentation	1	
Life Cycle of SLA	Lecture	1	
SLA Management in Cloud	Lecture	1	
Automated Policy-based Management	Lecture	1	
Chapter 12: Performance Prediction for HPC on Clouds			
Grid and Cloud background	Power Point Presentation	1	
HPC in the Cloud: Performance-related Issues.	Lecture	1	
Chapter 13: Data Security in the Cloud			
the Idea of Data Security	Lecture	1	
State of Data Security in the Cloud	Lecture	0.5	
Homo Sapiens and Digital Information	Lecture	0.5	
Cloud Computing and Data Security Risk	Lecture	1	
Cloud Computing and Identity	Power Point Presentation	1	
Content Level Security— Pros and Cons	Power Point Presentation	1	
	Total Periods:	**12**	

Signatures of the Teachers

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Signature of the HOD

Date: 26/01/2019

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 523– Internet of Things(IoT)

Lesson Plan

Academic Year 2017 - 18

Year & Semester I Year II Semester (M.Tech)

Regulation R-17

Name of Faculty Sri E.Ramesh

Unit- I

Learning Outcomes

1. Understand IoT Technologies and Characteristics of IOT.
2. Manage the scope, cost, timing, and deployment of IoT Protocols and Technologies.

Topic of syllabus covered	Teaching Mode	Hours Required
IoT Introduction	Lecture	1
IoT Architecture	Lecture	1
IoT Definition and Characteristics of IoT	Lecture	1
Physical Design of IoT	Lecture	1
Logical Design of IoT	Lecture	1
IoT Protocols	Lecture	1
IoT Deployment Levels 1-2	Lecture	1
IoT Deployment Levels 3-4	Lecture	1
IoT Deployment Levels 5-6	Lecture	1
Overview on Deployment	Lecture	1
Total		10

Unit- II

Learning Outcomes

1. Describe the concepts and Applications of IOT
2. Differentiate between the communication and Networking Technologies used in IOT

Topic of syllabus covered	Teaching Mode	Hours Required
Domain Specific IoT Applications	Lecture	1
Applications in IOT	Lecture	1

IoT and M2M-Introduction	Lecture	1
IoT Networking Concepts	Lecture	1
M2M Architecture-Examples	lecture	1
SDN -Introduction	Lecture	1
IoT Networking Architectures-examples	Lecture	1
NFV –Introduction	Lecture	1
Difference Between SDN And NFV	Lecture	1
Total		9

Unit- III

Learning Outcomes

1. Adapt and install Linux operating System to configure IoT device
2. Implement basic Programs in Python.

Topic of syllabus covered	Teaching Mode	Hours Required
Installation And Linux Commands In Raspberry Pi	Lecture	1
Raspberry Pi Examples	Lecture	1
Raspberry Programs In Python	Lecture	1
IoT Physical Servers And Cloud Offerings-Django Example	Lecture	1
Examples On Python	Lecture	1
Examples In Python-Lists	Lecture	1
Examples On Raspberry Pi Using Python	Lecture	1
Raspberry Pi OS Installation	Lecture	1
Total		8

Unit- IV

Learning Outcomes

1. Demonstration Python examples on raspberry Pi.

Topic of syllabus covered	Teaching Mode	Hours Required
Python-Introduction	Lecture	1
Objects and Modules, Even More	Lecture	1
Modules, Launching	Lecture	1
Other Programs from Python,	Lecture	1
Troubleshooting Errors	Lecture	1
Basic I/O - Using Inputs and Outputs	Lecture	1
Programming I/O with Python	Lecture	1

Installing and Testing GPIO in Python	Lecture	1
Blinking an LED, Reading a Button.	Lecture	1
Total		9

Unit- V

Learning Outcomes

1. Knowledge on the implementation of web based services on IoT.
2. Deployment of IOT Applications in Cloud.

Topic of syllabus covered	Teaching Mode	Hours Required
Communications in IoT- WAMP-Installation	Lecture	1
WAMP-Example in Python	Lecture	1
Servers in IOT	Lecture	1
Introduction to Cloud and Cloud examples in IOT	Lecture	1
IoT Physical Servers And Cloud Offerings-Django Example	Lecture	1
Django Architecture	Lecture	1
Database Example in IOT	Lecture	1
IOT tools and architectures in Cloud	Lecture	1
Communications in IoT	Lecture	1
Total		9

Signatures of the Teacher

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Signature of the HOD

Date:

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 571(A) – ARTIFICIAL INTELLIGENCE

Lesson Plan

Academic Year: 2018 - 19

Year & Semester: I Year I Semester

Regulation: R -17

Name of the Faculty: Ms.Ch.VijayaMadhaviLakshmi

Course Objectives:

1. To apply a given AI technique to a given concrete problem.
2. To Implement non-trivial AI techniques in a relatively large system.
3. To understand uncertainty and Problem solving techniques.
4. To understand various symbolic knowledge representation to specify domains and reasoning tasks of a situated software agent.
5. To understand different logical systems for inference over formal domain representations, and trace how a particular inference algorithm works on a given problem specification.
6. To understand various learning techniques and agent technology.

Course Outcomes:

1. Design intelligent agents for problem solving, reasoning, planning, and decision making, and learning. Specific design and performance constraints, and when needed, design variants of existing algorithms.
2. Apply AI technique on current applications.
3. Problem solving, knowledge representation, reasoning, and learning.
4. Demonstrating how to write a programs for Artificial Intelligence
5. Analysing and Solving Artificial Intelligence programs by using Backtracking methods.

Unit- I

Learning Outcomes

1. Explain various problems, production systems and its characteristics. CO1
2. Discuss different agents and its environment. CO2

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
What is an AI Technique? AI Problems, The Underlying assumption	Lecture	1	
The Level of the mode, Criteria for success	Lecture	1	
some general references, One final word and beyond.	Lecture	1	
Defining the Problem as a State Space Search	Lecture	1	
Production Systems	Lecture	1	
Problem Characteristics	Lecture, Interaction	1	
Production System Characteristics	Lecture	1	
Issues in the Design of Search Programs	Lecture	1	
Agents and Environments	Lecture	1	
The nature of environments	Lecture	1	
The structure of agents	Lecture	1	

Unit- II

Learning Outcomes

1. Discuss different heuristic search techniques.CO3
2. Explain various knowledge representation issues. CO3
3. Represent the knowledge using predicate logic. CO3

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Generate-and-Test	Lecture	1	
Hill Climbing search	Lecture	1	
Best-First Search algorithm	Lecture	1	
A* algorithm	Lecture	1	
Problem Reduction	Lecture	1	
Constraint Satisfaction	Lecture, Interaction	1	
Means-Ends Analysis	Lecture, Interaction	1	

Representations and Mappings	Lecture	1	
Approaches to knowledge representation	Lecture	1	
Issues in knowledge representation	Lecture	1	
Representing Simple Facts in Logic	Lecture, Interaction	1	
Representing Instance and ISA Relationships	Lecture, Interaction	1	
Computable Functions and Predicates	Lecture	1	
Conversion to Clause Form	Lecture	1	
Resolution in Proposition Logic	Lecture, Interaction	1	
Unification Algorithm	Lecture, Examples	1	
Resolution in Predicate Logic	Lecture, Examples	1	
Knowledge –based agents	Lecture, Examples	1	
The Wumpus world	Lecture, Examples	1	
Logic-Propositional logic, Propositional theorem proving	Lecture, Interaction	1	
Effective propositional model checking	Lecture, Examples	1	
Agents based on propositional logic.	Lecture, Interaction	1	

Unit- III

Learning Outcomes

1. Represent the knowledge using rules. CO4
2. Represent the given knowledge in symbol level. CO4

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to non-monotonic reasoning	Lecture, Interaction	1	
Logic for non-monotonic reasoning, Augmenting a problem-solver	Lecture, Discussion	1	
Implementation: Depth-first search, Implementation: Breadth-first search.	Lecture, Examples	1	
Probability and bayes Theorem	Lecture, Examples	1	
Certainty factors and rule-based systems, Bayesian Network	Lecture, Examples	1	
Dempster-Shafer Theory, Fuzzy logic	Lecture, Examples	1	

Acting under uncertainty,	Lecture, Discussion	1	
Basic probability notation	Lecture	1	
Inference using full joint distributions	Lecture, Discussion	1	
Independence, Bayes' rule and its use, The Wumpus world revisited	Lecture, Examples	1	
Semantic Nets	Lecture, Demonstration	1	
Conceptual Dependency	Lecture, Demonstration	1	
Scripts	Lecture, Demonstration	1	

Unit- IV

Learning Outcomes

1. Represent the knowledge using rules.CO3
2. Represent the given knowledge in symbol level.CO3
3. Explain different game playing strategies. CO4
4. Differentiate Minimax and alpha-beta cut offs. CO3

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Overview	Lecture	1	
Semantic Nets	Lecture, Demonstration	1	
Frames	Lecture, Demonstration	1	
Conceptual dependency, scripts, CYC	Lecture, Demonstration	3	
Games, Optimal Decision in Games	Lecture, Demonstration	1	
Alpha-Beta Pruning, Imperfect Real Time Decisions	Lecture, Examples	1	
Stochastic Games, Partially Observable Games	Lecture, Demonstration	2	
State-Of-The-Art Game Programs, Alternative Approaches.	Lecture, Demonstration	2	

Unit- V

Learning Outcomes

1. Discuss various forms of Learning. CO5
2. Discuss Learning Probabilistic Models. CO5

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Forms of learning	Lecture	1	
Supervised learning	Lecture	1	
Learning decision trees	Lecture	2	
Evaluating and choosing the best hypothesis	Lecture	2	
The theory of learning	Lecture	1	
PAC, Regression and Classification with linear models,	Lecture, Interaction	1	
Nonparametric models, Support vector machines	Lecture	2	
Ensemble learning.	Lecture, Discussion	1	
Statistical learning	Lecture	1	
learning with complete data	Lecture	1	
learning with hidden variables: The EM algorithm.	Lecture, Interaction	2	

Signatures of the Teachers

1. C.V.M.Kiran

2.

Signature of the HOD

Date: 22/08/2018

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 576 – AGILE SOFTWARE METHODOLOGIES

Lesson Plan 2019-20

Academic Year	2019 – 20
Year & Semester	I Year I Semester
Regulation	R-17
Name of Faculty	R. Mabubasha ,Assistant Professor, CSE

Course Objectives

1. To understand how an iterative, incremental development
2. To learn about software process leads to faster delivery of more useful software.
3. To understand the essence of agile development methods.
4. To understand the principles and practices of extreme programming.

Course Outcomes

1. To understand the basic concepts of Agile Software Process.
2. To gain knowledge in the area of various Agile Methodologies.
3. To develop Agile Software Process.
4. To know the principles of Agile Testing.

Unit- I

Learning Outcomes

1. Understand the essential characteristics and identify using examples, charactistics of a good software system. [CO1]
2. Analyse various types of concepts and its functionalities. [CO1]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to agile software development	Lecture	1	
Iterative development	Lecture& Demonstration	2	
Risk –driven and client driven iterative planning	Lecture	2	
Time-boxed iterative development	Lecture	1	
Evolutionary and adaptive development	Lecture	2	
Evolutionary requirements analysis	Lecture	2	
Evolutionary and adaptive planning – Incremental delivery – Evolutionary delivery	Lecture	2	

Unit- II

Learning Outcomes

1. Understand the fundamental principles and practices associated with agile development methods. [CO3]
2. Application of agile principles and specific practices. [CO2]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
The agile manifesto and principles	Lecture & Demonstration	1	
Simple practices and project tools	Lecture & Demonstration	1	
Principle-based versus Rule-Based	Lecture & Demonstration	1	
facts of change on software projects	Lecture & Demonstration	2	
Key motivations for iterative development	Lecture & Demonstration	2	
Problems with the waterfall model	Lecture & Demonstration	1	
A Business case for iterative development	Lecture & Demonstration	4	

Unit- III

Learning Outcomes

1. Deconstruct user stories into tasks and cost estimates. [CO3]
2. Identify the different kinds of models used in development of software and describe the relationship between models, viewpoints and software development. [CO3]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Lifecycle – Work product	Lecture & Demonstration	2	
Common mistakes and misunderstandings	Lecture & Demonstration	2	
Process mixtures – Adoption strategies	Lecture & Demonstration	3	
Strengths versus "Other" history	Lecture & Demonstration	3	

Unit- IV

Learning Outcomes

1. Evaluate likely success and formulate plans to manage likely risk problems. [CO4]
2. Understanding the test driven development [CO4]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Risk Management	Lecture & Demonstration	2	
Customer Tests	Lecture	2	
Test- Driven Development,	Lecture	8	
Refactoring, Incremental Design and Architecture, Spike Solutions, Performance Optimization			

Unit- V

Learning Outcomes

1. Understanding the acceptance test driven development and behaviour driven development.[CO4]
2. Understand the motivation for and best practices of agile approach to software development.[CO3]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Project management	Lecture	4	
Test – The agile alliances – The manifesto	Lecture	4	
Agile testing – Nine principles and six concrete practices for testing on agile teams	Lecture	4	

R. M. Bama
Signatures of the Teachers

Signature of the HOD

Date: 23/08/2018

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

Scripting Languages (CS 581)

Lesson Plan

Academic Year	2018 - 2019
Year & Semester	IYear II Semester (M.Tech)
Regulation	R-17
Name of Faculty	Smt. Z.Sunitha Bai

Course Objectives:

- The PHP Scripting Language syntax and semantic specifications.
- The regular expressions, arrays, strings and Functions.
- Database applications with rich, highly responsive user interfaces.
- The Python Scripting Language syntax and semantic specifications.
- Development of web applications and Services using Python.

Course Outcomes:

- Apply basic concepts of PHP programming.
- Develop and deploy PHP Web applications.
- Apply advanced concepts of PHP programming.
- Apply basic concepts of PHP programming.
- Develop and deploy Python Web applications using Frameworks.

Unit- I

Learning Outcomes:

- Write PHP scripts to handle HTML forms.
- Discuss the basic concepts of data types, variables constants, expressions
- Write regular expressions including modifiers, operators, and meta characters.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Setting up a development environment, Variables, numbers and strings	Lecture &Demonstration	3	2
Conditional Statements, Using Loops for Repetitive tasks	Lecture &Demonstration	3	2
Combing Loops and Arrays	Lecture &Demonstration	3	2
Understanding string interpolation, expressions	Lecture &Demonstration	2	1

Unit- II

Learning Outcomes:

- Create PHP programs that use various PHP library functions, and that manipulate files and directories.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
PHP's Built-in functions, Creating Custom functions, Passing Values by Reference	Lecture &Demonstration	3	2
Calculations with PHP Using Arrays	Lecture &Demonstration	3	2
Strings and Regular Expressions	Lecture &Demonstration	3	2
Building a Form,proceesing a form's Data, Differences between POST and GET	Lecture &Demonstration	2	1
Setting and reading Cookies	Lecture &Demonstration	2	1
Files-Reading,writing,modifying data into the files	Lecture &Demonstration	2	2

Unit- III

Learning Outcomes:

- Discuss the validation controls and methods
- Develop and deploy the Sending Email using encryption functions.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
PHP Authentication and Methodologies	Lecture &Demonstration	3	2
Login Administration	Lecture &Demonstration	1	1
Uploading Files with PHP	Lecture &Demonstration	2	2
Sending E-mails using PHP	Lecture &Demonstration	1	1
PHP Encryption Functions, Mcrypt package	Lecture &Demonstration	2	1

Unit- IV

Learning Outcomes:

- To understand why python is a useful scripting language for developers
- To discuss how to use lists,tuples and dictionaries,indexing and slicing to access datain python programs
- To learn to design and program python program applications
- To build and package python modules for reusability

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to python,syntax, statements	Lecture &Demonstration	3	2
Functions,built in functions	Lecture &Demonstration	2	2
Builtin functions and methods	Lecture &Demonstration	2	2
Modules in python	Lecture &Demonstration	2	2

Unit- V

Learning Outcomes:

- To learn how to design object oriented programs with Python classes.
- To learn how to use class inheritance in Python for reusability.
- To learn how to use exception handling in Python applications for error handling.
- To design small web application using php modules and methods
- To design web application framework using tools and resources

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Exception Handling	Lecture &Demonstration	3	2
Integrated web Applications in python-building a small programs	Lecture &Demonstration	2	2
Web application design	Lecture &Demonstration	2	2
Web application frame work design and implementation	Lecture &Demonstration	2	2

Z. Sunitha Bai

Signatures of the Teachers
Smt. Z.Sunitha Bai

M. S. U

Signature of the HOD

Date: 25/08/2018

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS 588(E) – Multimedia Computing

Lesson Plan

Academic Year 2018 – 19

Year & Semester I Year II Semester

Regulation R-17

Name of Faculty D. Praveen kumar

Unit- I

Learning outcome:

1. Discuss latest hardware and software available in various Multimedia Authoring tools.
2. Explain various text and image processing techniques

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction to Multimedia	Lecture & Demonstration	1	
Multimedia Presentation and Production	Lecture & Demonstration	1	
Characteristics of a Multimedia Presentation, Hardware and Software Requirements	Lecture & Demonstration	1	
Uses of Multimedia	Lecture & Demonstration	1	
Analog and Digital Representations Digitization	Lecture & Demonstration	1	
Nyquist's Sampling Theorem, Quantization Error	Lecture & Demonstration	1	
Visual Display Systems	Lecture & Demonstration	1	
Text: Introduction, Types of Text, Unicode Standard, Font, Insertion of Text	Lecture & Demonstration	1	
Text Compression	Lecture & Demonstration	1	
Text File Formats	Lecture & Demonstration	1	
Image: Introduction, Image Data Representation	Lecture & Demonstration	1	

Image Acquisition, Image Processing	Lecture & Demonstration	1	
Binary Image Processing	Lecture & Demonstration	1	
Grayscale Image Processing,	Lecture & Demonstration	1	
Color Image Processing	Lecture & Demonstration	1	
Output on Monitors, Image Output on Printers	Lecture & Demonstration	1	
Image File Formats, Image-Processing Software.	Lecture & Demonstration	1	

Unit- II

Learning outcome:

1. Describe various audio and video processing techniques.

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Audio: Acoustics, Sound Waves, Types and Properties of Sounds, Psycho-Acoustics	Lecture & Demonstration	1	
Components of an Audio Systems	Lecture & Demonstration	1	
Digital Audio, Synthesizers	Lecture & Demonstration	1	
Musical Instrument Digital Interface (MIDI)	Lecture & Demonstration	1	
Digital Audio Processing	Lecture & Demonstration	1	
Speech, Sound Card, Audio Transmission	Lecture & Demonstration	1	
Audio File Formats, Surround Sound Systems	Lecture & Demonstration	1	
Digital Audio Broadcasting, Audio-Processing Software.	Lecture & Demonstration	1	
Video: Motion Video, Analog Video Camera, Analog Video Signal Representation	Lecture & Demonstration	1	
Television Systems, Video Color Spaces	Lecture & Demonstration	1	

Digital Video, Digital Video Processing	Lecture & Demonstration	1	
Video Recording and Storage Formats, Video File Formats	Lecture & Demonstration	1	
Video Editing Concepts, Video-Processing Software	Lecture & Demonstration	1	

Unit- III

Learning outcome:

1. **Use Animation rendering algorithms.**
2. **Evaluate various Image compression schemes**

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Animation: Historical Background, Uses of Animation, Traditional Animation	Lecture & Demonstration	1	
Principles of Animation	Lecture & Demonstration	1	
Computer-based Animation	Lecture & Demonstration	1	
Animation on the Web, 3D Animation	Lecture & Demonstration	1	
Rendering Algorithms	Lecture & Demonstration	1	
Animation File Formats, Animation Software	Lecture & Demonstration	1	
Compression: Basic Concepts, Lossless Compression Techniques	Lecture & Demonstration	1	
Lossy Compression Techniques	Lecture & Demonstration	1	
Image Compression	Lecture & Demonstration	1	
Audio Compression	Lecture & Demonstration	1	
Video Compression	Lecture & Demonstration	1	
MPEG Standards Overview, Fractal Compression.	Lecture &	1	

	Demonstration		

Unit- IV

Learning Outcomes

1. Explain multimedia databases

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Multimedia Architecture: User Interfaces, OS Multimedia Support	Lecture & Demonstration	1	
Multimedia Extensions	Lecture & Demonstration	1	
Hardware Support Distributed Multimedia Applications	Lecture & Demonstration	1	
Real-time Protocols	Lecture & Demonstration	1	
Playback Architectures, Synchronization.	Lecture & Demonstration	1	
Multimedia Database: What is a Multimedia Database	Lecture & Demonstration	1	
Content-Based Storage and Retrieval (CBSR)	Lecture & Demonstration	1	
Designing a Basic Multimedia Database	Lecture & Demonstration	1	
Image Color Features, Image Texture Features	Lecture & Demonstration	1	
Image-Shape Features	Lecture & Demonstration	1	
Audio Features, Video Features	Lecture & Demonstration	1	
Classification of Data	Lecture & Demonstration	1	
Artificial Neural Networks	Lecture & Demonstration	1	
Semantics in Multimedia Data, Prototype Implementations	Lecture & Demonstration	1	

Unit- V

Learning Outcomes

1. Design multimedia documentation.
2. Explain multimedia application development

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Multimedia Documents: Document and Document Architecture	Lecture & Demonstration	1	
Hypermedia Concepts	Lecture & Demonstration	1	
Hypermedia Design	Lecture & Demonstration	1	
Digital Copyrights	Lecture & Demonstration	1	
Digital Library, Multimedia Archives	Lecture & Demonstration	1	
Multimedia Application Development: Software Life-Cycle Overview	Lecture & Demonstration	1	
ADDIE Model	Lecture & Demonstration	1	
Multimedia Production Steps	Lecture & Demonstration	1	
Case Study	Lecture & Demonstration	1	
Authoring Software	Lecture & Demonstration	1	
Computer Games	Lecture & Demonstration	1	

M. S. U

Signatures of the Teachers

Signature of the HOD

1. @ Naveen Kumar 04/12/19

2.

3.

Date: 04/01/2019

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

CS-596 Visual Programming

Lesson Plan

Academic Year	2018 - 2019
Year & Semester	IYear II Semester (M.Tech)
Regulation	R-17
Name of Faculty	M.Vasavi

Course Objectives:

1. The C# language and the .NET Framework.
2. Working of Microsoft Visual Studio Development Environment.
3. Windows Forms applications with rich, highly responsive user interfaces.
4. Development of web applications and Services using ASP.NET.
5. The use of Language Integrated Query (LINQ).

Course Outcomes:

1. Apply basic concepts of C# programming.
2. Apply advanced concepts of C# programming.
3. Develop and deploy windows applications.
4. Develop and deploy web applications and web services using ASP.NET.
5. Develop database driven applications using XML and LINQ.

Unit- I

Learning Outcomes:

1. Create Console Applications using C# Concepts. [CO1]
2. Analyze the debugging and Error handling concepts in VS2010. [CO1]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introducing C#	Lecture	1	
Understanding .NET	Lecture	1	
Overview of C#, Literals, Variables,	Lecture	1	
Data Types, Operators, Expressions,	Lecture	1	
Flow Control :Branching, Looping, Methods, Arrays	Lecture	1	
Strings	Demonstration	1	
Structures	Lecture	1	
Enumerations.	Lecture	1	
Review of Examples	Demonstration	1	
Variables and Expressions	Lecture	1	
More About Variables	Lecture	1	

Functions in C#	Lecture	1	
Total No. of Hours		**12**	

Unit- II

Learning Outcomes:

1. Demonstrate the knowledge on Advance OOPS concepts. [CO2]
2. Comprehend the C# Language Enhancements. [CO2]

Topic of syllabus covered	**Teaching Mode**	**Hours Required**	
		L	**T**
Debugging	Lecture	1	
Error Handling	Lecture	1	
Introduction to Object-Oriented Programming,	Lecture	0.5	
Defining Classes	Lecture	0.5	
Defining Class Members	Lecture	0.5	
Classes, Objects Examples	Lecture	0.5	
Inheritance, Polymorphism	Lecture	1	
Interfaces	Lecture	1	
Operator Overloading,	Lecture	1	
Delegates	Lecture	1	
Events	Lecture	1	
Errors and Exceptions	Lecture	1	
Introduction to Collections	Lecture	0.5	
Introduction to Comparisons	Lecture	0.5	
Introduction to Conversions	Lecture	1	
Total No. of Hours		**12**	

Unit- III

Learning Outcomes:

1. Develop Windows forms applications in VS2010 [CO3]
2. Deploy window form applications [CO5]

Topic of syllabus covered	**Teaching Mode**	**Hours Required**	
		L	**T**
Introduction to Generics	Lecture	1	
Examples on Generics	Demonstration	1	
Additional OOP Techniques	Lecture	1	
Examples on C# Language Enhancements	Lecture	1	
Basic Windows Programming	Lecture	1	
Building Windows Applications	Lecture	1	
Console application to windows Forms	Lecture	1	
Windows Forms versus web Forms	Lecture	1	
Basic Window form controls	Lecture	1	
Create simple window form application	Lecture	1	
Advanced window form controls	Lecture	1	
Deploying window form applications.	Lecture	1	

Total No. of Hours		12

Unit- IV

Learning Outcomes:

1. Create ASP.NET applications using databases [CO3]
2. Create Web services [CO5]
3. Deploy web Applications [CO5]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Basic Introduction about ASP.Net	Lecture	1	
ASP.NET Web Programming	Lecture	1	
Basic server controls	Lecture	2	
Validation controls	Lecture	1	
Navigation controls	Lecture	1	
Login controls	Lecture	1	
Reading and writing data into database	Lecture	2	
Web Services	Lecture	1	
Deploying Web Applications	Lecture	1	
SDI and MDI	Lecture	1	
Total No. of Hours		**12**	

Unit- V

Learning Outcomes:

1. Apply the XML concepts to create a database application [CO4]
2. Develop Simple application in VS2010 using LINQ [CO4]

Topic of syllabus covered	Teaching Mode	Hours Required	
		L	T
Introduction about File System	Lecture	2	
Different classes available in system.IO namespace	Lecture	2	
Introduction to LINQ	Lecture	2	
Applying LINQ	Lecture	3	
Programming Web Applications	Lecture	2	
Web Forms with Data Access	Lecture	2	
XML Example	Lecture	2	
Total No. of Hours		**12**	

M.Vasavi

Signatures of the Teachers

1. M.Vasavi

Signature of the HOD

Date: 025/08/2018

R.V.R. & J.C.COLLEGE OF ENGINEERING
(Autonomous)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Lesson Plan for Professional Ethics And Human Values (EC112)

Academic Year: 2016-2017, 2017-2018

Course Year &Semester: B.Tech / I Year II SEM (EC A B& C SECTION)

Name of Faculty: Smt.T.Sunitha/Sri.N.Sudheer kumar / Sri.K.Anil Kumar

S.NO	Topics to be covered	No. of Periods	Learning outcomes	Delivery Methods Black board/LCD
		UNIT-I		
1	Introduction To Ethics And Values	01	Understand ethics and moral values	Black Board
2	Values, Moral Values, Integrity.	01	Understand ethics and moral values	LCD
3	Work Ethics, Service Learning,civic Virtue,respect For Others.	01	Understand ethics and moral values	Black Board
4	Living Peacefully, Caring-sharing,honesty, Hoesty On Campus	01	Understand ethics and moral values	Black Board
5	Courage, Collegiality, Cooperation, Commitment, Self Confidence	01	Understand ethics and moral values	Black Board
6	Self Confidence, Spirituality	01	Understand ethics and moral values	Black Board
		UNIT-II		
7	Engineering Ethics: Meaning, Scope, Definition. Professional Obligations	01	Understand ethics and moral values	Black Board
8	Morality, Variety Of Moral Issues,where Do Moral Problems Arise In Engineering	01	Understand ethics and moral values	Black Board
9	Types Of Inquiries,moral Dilemma And Types,steps To Solve Moral Dilemmas	01	Solving moral dilemma	Black Board
10	Moral Autonomy, Kohlberg's Theory,gilligan's Theory,heinz Dilemma	01	Solving moral dilemma	Black Board
11	Consensus And Controversy	01	Solving moral dilemma	Black Board
12	Profession And Professional Definitions, Differences	01	Understand professional obligations	Black Board
13	Membership Criteria, Models Of Professional Roles	01	Understand professional obligations	Black Board
14	Persuasive Definitions For Professionalism, Multiple Motives	01	Understand professional obligations	Black Board
15	Professional Ideals And Virtues	01	Understand professional obligations	Black Board
16	Professional Responsibility As Professional Virtue	01	Understand professional obligations	Black Board
17	Accountability And Voluntary Action, Casual Responsibility And Legal Responsibility.	01	Understand professional obligations	Black Board
		UNIT-III		
18	Theories On Right Action, Queries On Right Action,utilitarianism	01	Understand theories of ethics	Black Board

19	Theory Of Duty Ethics,theory Of Right Ethics	01	Understand theories of ethics	Black Board
20	Self Interest,customs,ethical Relativism	01	Understand theories of ethics	Black Board
21	Religion And Divine Command Ethics	01	Understand theories of ethics	Black Board
22	Uses Of Ethical Theories	01	Understand theories of ethics	Black Board
23	Social Experimentation, Comparison With Standard Experiments	01	Understand theories of ethics	Black Board
24	Enigineers As Responsible Experimenters	01	Understand Enigineers As Responsible Experimenters	Black Board
25	Codes Of Ethics	01	Understand Enigineers As Responsible Experimenters	Black Board
26	Codes Of Ethics- Advantages And Limitations	01	Understand Enigineers As Responsible Experimenters	Black Board
27	Balanced Outlook On Law	01	Understand Enigineers As Responsible Experimenters	Black Board
28	The Challenger-case Study,safety And Risk Defintion,examples	01	Understand Enigineers As Responsible Experimenters	Black Board
		UNIT-IV		
29	Definitions of Risk,Accepatability Of Risk	01	Understand Enigineers As Responsible Experimenters	Black Board
30	Assesment Of Safety And Risk	01	Understand Enigineers As Responsible Experimenters	Black Board
31	Testing For Safety, Risk Analysis	01	Understand Risk and safety	Black Board
32	Risk-benefit Analysis	01	Understand Risk and safety	Black Board
33	Safe Exit, Chernobyl Case Study	01	Understand Risk and safety	Black Board
34	Three Mile Island Case Study	01	Understand Risk and safety	Black Board
35	Cofidentiality	01	Understand Risk and safety	Black Board
36	Conflicts Of Interest	01	Understand Conflicts Of Interest	Black Board
		UNIT-V		
37	Professional Rights, Employee Rights	01	Understand Employee Rights	Black Board
38	Intellectual Property Rights	01	Understand Employee Rights	Black Board
39	Environmental Ethics, Computer Ethics	01	Understand Employee Rights	Black Board
40	Weapons Development	01	Understand Employee Rights	Black Board
41	Computer Ethics, Weapons Development	01	Understand Code Of Conduct	Black Board
42	Engineers As Managers, Consulting Engineers	01	Understand Code Of Conduct	LCD
43	Engineer's As Expert Witness And Expert Advisers In Planning And Policy Making	01	Understand Code Of Conduct	Black Board

44	Code Of Conduct	01	Understand Code Of Conduct	Black Board
45	Nspe- Code Of Conduct, Fundamental Rules	01	Understand Code Of Conduct	Black Board
46	Code Of Conduct- Asce,Aiche,Asme	01	Understand Code Of Conduct	Black Board
47	Code Of Conduct- Institute Of Engineers India,Ieee,iete	01	Understand Code Of Conduct	Black Board
48	Code Of Ethics	01	Understand Code Of Conduct	Black Board
	Total no.of periods	48		

Signature of Course Coordinator

Signature of the HOD

R.V.R. & J.C.COLLEGE OF ENGINEERING, GUNTUR-19
(AUTONOMOUS)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN

Academic Year: 2018-19
Year & Semester: II B.Tech I Semester (EC A,B & C Section)
Branch: Electronics & Communication Engineering
Subject Code & Name: EC 202 & Electronic Devices and Circuits
Name of the faculty: Sri U.Rama Krishna / Sri B.Lokeshwar / Sri K.Anil Kumar

S.No	Topics to be covered	No. of Periods	Learning Outcomes	Delivery Methods Black Board /LCD
	UNIT – I (PN JUNCTION)			
1.	Basic Structure of the PN Junction	1	Understand semiconductor diode	Black Board
2.	Zero applied bias	2	Understand semiconductor diode	Black Board
3.	Reverse applied bias	1	Understand semiconductor diode	Black Board
4.	Non uniformly doped junctions	1	Understand semiconductor diode	Black Board
5.	PN junction current	2	Analyze diode	Black Board
6.	Generation-Recombination currents	1	Understand properties	Black Board
7.	Junction break down	2	Understand properties	Black Board
8.	Zener diode as voltage regulator	1	Analyze Zener diode	Black Board
9.	The Tunnel diode	1	Analyze Tunnel diode	Black Board
	UNIT – II (BIPOLAR TRANSISTOR			
10.	The bipolar transistor action	2	Understand BJT operation	Black Board
11.	Minority carrier distribution	3	Understand BJT operation	Black Board
12.	Low frequency CB current gain	2	Analyze BJT	Black Board
13.	Non-ideal effects	3		Black Board
14.	Hybrid-pi model	1	Understand models	Black Board
15.	Frequency limitations	1	Understand frequency behavior of BJT	Black Board
	UNIT – III (TRANSISTOR CHARACTERISTICS & Transistor Biasing)			
16.	Common emitter characteristics	2	Understand characteristics of CE	Black Board
17.	Common base characteristics	1	Understand characteristics of CB	Black Board
18.	Common collector characteristics	1	Understand characteristics of CC	Black Board

19.	Photo transistor	1	Understand operation of Photo transistor	Black Board
20.	The operating point, Bias Stability	1	Analyze BJT at DC	Black Board
21.	Biasing techniques	3	Analyze BJT at DC	Black Board
22.	Stabilization against variations in I_{CO}, V_{BE} ,β	2	Analyze BJT at DC	Black Board
23.	Thermal runaway	1	Problem in BJT	Black Board
	UNIT – IV (METAL-OXIDE-SEMICONDUCTOR EFIELD-EFFECT TRANSISTOR)			
24.	The two terminal MOS structure	2	Understand MOS capacitor operation	Black Board
25.	Capacitance –Voltage characteristics	3	Understand MOS capacitor operation	Black Board
26.	The basic MOSFET operation	2	Understand MOSFET operation	Black Board
27.	Frequency limitations	1	Understand frequency behavior of MOSFET	Black Board
28.	Non ideal effects	4	Understand properties	
	UNIT – V (JUNCTION FIELD-EFFECT TRANSISTOR & RECTIFIERS)			
29.	JFET Concepts	2	Understand JFET operation	Black Board
30.	The device characteristics	2	Understand characteristics of JFET	Black Board
31.	Non-ideal effects	2	Understand properties	Black Board
32.	Equivalent circuit	1	Understand Models	Black Board
33.	Frequency limitations	1	Understand frequency behavior of JFET	Black Board
34.	Half wave rectifier	2	Analyze Half wave rectifier	Black Board
35.	Full wave rectifier with capacitor filter	2	Analyze Full wave rectifier with and without capacitor	Black Board
	Total Number of Periods = 60			

B. Lokeshwar

Signature of the Course Coordinator
B.LOKESHWAR

Signature of HOD
Dr.T.RANGA BABU

R.V.R & J.C. COLLEGE OF ENGINEERING, GUNTUR-19
(AUTONOMOUS)

DEPARTMENT OF ELECTRONICS & COMMUNICATIONS ENGINEERING

LESSON PLAN : Signals & Systems (R16)

ACADEMIC YEAR : 2018-19

COURSE YEAR &SEMESTER : II YEAR &I SEM

NAME OF THE FACULTY : K.Upendrachowdary/K.Ashok Kumar/K.Anil Kumar

S.NO	Topics to be covered	No.of Periods	Learning outcomes	Delivery Methods Black board/ LCD
			Unit I	
1	Introduction to signals and systems, Classification of signals and systems (both discrete and continuous)	3	Able to classify various signals	Black Board
2	Approximation of a function by a set of mutually orthogonal functions	1	Able to analyse signals with mutual orthogonal approach.	Black Board
3	Evaluation of mean square error, Orthogonality in complex functions,	2	Evaluate MSE and orthogonality.	Black Board
4	Trigonometric and Exponential Fourier series, Representation of a periodic function by Fourier series	3	Analyse fourier series expansion	Black Board
5	Alternate form of fourier series,symmetry conditions	3	Able to analyse symmetry conditions.	Black Board
6	Complex fourier spectrum	2	Analyse complex fourier transform and its	Black Board
			Unit II	
7	Fourier transform, fourier transform of some useful functions	3	Able to analyse the response of LTI system in time and frequency domain	Black Board
8	Singularity functions	1	Analyse singularity functions	Black Board
9	Properties of fourier transform	2	Analyse the properties of fourier transform	Black Board
10	Energy density spectrum	1	Analyse energy spectrum	Black Board
11	Impulse response representation of LTI	2	Able to analyse the response of LTI system in time and frequency	Black Board

	systems,properties		domain	
12	Frequency response of LTI systems	1	Able to analyse the response of LTI system in time and frequency domain	Black Board
13	Conditions for distortion less transmission	1	Able to understand the conditions for distortionless transmission	Black Board
14	Ideal lowwpass filter,frequency and impulse response of LPF	2	Able to analyse the response of lowpass filter	Black Board
15	Paley-Wiener criterion	1	Able to know about paley wiener criterion	Black Board
16	Sampling theorem	1	Able to analyse the response of LTI system in time and frequency domain	Black Board
			Unit III	
17	Correlation and convolution	2	Able to understand correlation and convolution.	Black Board
18	Properties of correlation functions	1	Able to understand properties of correlation functions	Black Board
19	Sources of Noise, Thermal Noise, Noise power spectral density, Noise calculation.	2	Able to understand different types of noise and its characteristics.	Black Board
20	Multiple sources-Superposition Of power spectra, Noise calculations in Passive circuits, Equivalent noise bandwidth.	2	Able to understand different types of noise and its characteristics.	Black Board
21	Noise-Figure of an amplifier, Power density and available power density.	2	Able to understand different types of noise and its characteristics.	Black Board
22	Effective input noise temperature, Effective noise temperature, Noise Figure in terms of available gain.	2	Able to understand effective noise temperature	Black Board
23	Cascaded stages, Measurement of Noise Figure.	1	Able to understand different types of noise and its characteristics.	Black Board
			Unit IV	
24	Definition of probability, Axioms of probability, Joint probability, Conditional probability, Total probability, Bayes' theorem.	3	Able to understand the axioms of probability	Black Board
25	Independent events, Random variables, discrete and	2	Able to analyse random signals using concepts of random	Black Board

	continuous.		variables	
26	Probability Distribution Function, Probability Density Function.	1	Able to know PDF and probability density functions	Black Board
27	Gaussians Random variable, Conditional distribution and density functions	1	Able to know guassian random variable	Black Board
28	Mean ,Variance and standard deviation of a random variable, Characteristic function.	1	Able to analyse random signals using concepts of random variables	Black Board
			Unit V	
29	Random process concept , stationary and independence, correlation functions.	3	Able to analyse random signals using concepts of random Processes	Black Board
30	Gaussian random process and Poisson random process,	2	Able to analyse random signals using concepts of random Processes	Black Board
31	Power density spectrum and its properties, relationship between power spectrum and autocorrelation function.	2	Able to analyse random signals using concepts of random Processes	Black Board
Total classes		59		

(S.Ramesh Babu)
Course Co-ordinator

(Dr.T.RANGA BABU)
Professor&Head

R.V.R. & J.C.COLLEGE OF ENGINEERING
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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Lesson Plan for Electromagnetic Fields &Transmission Lines (EC211) (R16)

Academic Year: 2017-2018, 2018-2019

Course Year &Semester: B.Tech / II Year II SEM (EC A B& C SECTION)

Name of Faculty: Dr. M.V.S. Prasad/ D. Jagadeesh/ K. Anil Kumar

S.NO	Topics to be covered	No. of Periods	Learning outcomes	Delivery Methods Black board/LCD
		UNIT – I		
1	Introduction To The Electromagnetic Fields	01	Understand electric field	Black Board
2	Vector Algebra, Coordinate System	01	Understand electric field	LCD
3	Types Of Charge Distributions, Coulomb's Law	01	Understand electric field	Black Board
4	Problems On Coulomb's Law, Electric Field Intensity Due To A Point Charge	01	Understand electric field intensity	Black Board
5	Field Due To Different Charge Distribution	01	Understand electric field intensity	Black Board
6	Electric Flux Density, Problems	01	Understand electric flux intensity	Black Board
7	Gauss Law, Proof	01	Analyze gauss's law	Black Board
8	Application Of Guass Law to Point and line Charges.	01	Analyze gauss's law	Black Board
9	Maxwell's 1st Equation,divergence Theorem.	01	Analyze gauss's law	Black Board
10	Energy Epended In Moving A Charge In Electric Field	01	Understand work done	Black Board
11	Work Done To Move A Charge,line Integral	01	Understand work done	Black Board
12	Potential Diff, Potential	01	Understand potential	Black Board
13	Potential Due To A Point Charge, system of charges	01	Understand potential	Black Board
14	The Electric Dipole, Problem.	01	Analyze potential	Black Board
15	Energy Density In Electrostatic Fields.	01	Analyze work done	Black Board
		UNIT – II		
16	Current And Conductors, Problems.	01	Understand conductor properties	Black Board
17	Conductor Properties And Boundary Conditions, The Nature Of Dielectric Materials.	01	Understand conductor properties	Black Board
18	Dielectric Boundary Conditions.	01	Understand Boundary Conditions	Black Board
19	Capacitance , Parallel Plate And Coaxial Capacitance	01	Analyze different capacitors	Black Board
20	Capacitance Of A Two Wire Line.	01	Analyze different capacitors	Black Board
21	Derivation Of Laplace And Poisson's Equations, Examples Of The Solution	01	Analyze different capacitors	Black Board

	Of Laplace Equation.			
		UNIT – III		
22	The Steady Magnetic Field: Biot-savert's Law.	01	Understand magnetic field	Black Board
23	Magnetic Field Due To Infinite Length Current Carrying Conductor, surface	01	Understand magnetic field	Black Board
24	Ampere's Circuital Law,problems.	01	Understand Ampere's Law	Black Board
25	Applications Of Ampere's Law: Coaxial Cable.	01	Analyze Ampere's Law	Black Board
26	Applications Of Ampere's Law: Surface Currents,Solenoid, Toroid.	01	Analyze Ampere's Law	Black Board
27	Curl, Point Form Of Gauss Law, Magnetic Flux,Magnetic Flux Density.	01	Analyze Ampere's Law	Black Board
28	Scalar And Vector Magnetic Potentials.	01	Understand Magnetic Potentials	Black Board
29	Force On A Moving Charge, Problems.	01	Understand Force On Current Elements	Black Board
30	Force On Current Element, Problems.	01	Understand Force On Current Elements	Black Board
31	Force Between Differential Current Elements. The Nature Of Magnetic Materials.	01	Understand Force On Current Elements	Black Board
32	Force And Torque On A Closed Path.	01	Analyze Force On Current Elements	Black Board
33	Magnetization And Permeability, Magnetic Boundary Conditions. Potential Energy In Magnetic Fields.	01	Understand Magnetic Boundary Conditions	Black Board
		UNIT – IV		
34	Faraday's Law And Transformer Emf.	01	Understand Electromotive Force	Black Board
35	Motional Emf, Displacement Current, Inconsistency Of Ampere's Law, Modification Of Ampere's Law.	01	Understand Electromotive Force	Black Board
36	Maxwell's Equations In Point Form And Integral Form, Problems.	01	Analyze Electromotive Force	Black Board
37	Wave Equations For Free Space, Uniform Plane Wave Propagation.	01	Understand Plane Wave Propagation	Black Board
38	Uniform Plane Wave Propagation.	01	Understand Plane Wave Propagation	Black Board
39	Wave Equations For Conducting Medium.	01	Understand Plane Wave Propagation	Black Board
40	Sinusoidal Time Variations.	01	Understand Plane Wave Propagation	Black Board
41	Wave Propagation In Lossless Medium In Phasor Form.	01	Understand Plane Wave Propagation	Black Board
42	Conductors And Dielectrics.	01	Understand Plane Wave Propagation	Black Board
43	Wave Propagation In Dielectrics And Conductors In Terms Of Attenuation And Phase Constants.	01	Understand Plane Wave Propagation	Black Board
44	Polarization- Linear, Circular And Elliptical Polarization	01	Understand Plane Wave Propagation	Black Board
45	Direction Cosines.	01	Understand Plane Wave Propagation	Black Board

46	Reflection By A Perfect Conductor-normal Incidence	01	Analyze Plane Wave Propagation	LCD
47	Reflection By A Perfect Conductor-Oblique Incidence,reflection By A Perfect Dielectric- Normal Incidence.	01	Analyze Plane Wave Propagation	LCD
48	Reflection By Dielectric - Oblique Incidence	01	Analyze Plane Wave Propagation	Black Board
49	Brewster Angle, Problems	01	Analyze Plane Wave Propagation	Black Board
50	Poynting Theorem, Poynting Vector, Problems	01	Analyze Plane Wave Propagation	Black Board
		UNIT – V		
51	T-sections, Derivation of propagation constant, characteristic impedance	01	Understand Transmission lines	Black Board
52	General solution of a transmission line	01	Analyze Transmission line equivalent circuit	Black Board
53	Attenuation constant and phase constant, Propagation constant	01	Analyze Transmission line equivalent circuit	Black Board
54	The infinite line, Wavelength, Velocity of propagation, Group velocity	01	Analyze Secondary constants	Black Board
55	Waveform distortion (Delay, frequency distortion)	01	Understand distortions on line	Black Board
56	Derivation of distortion less line.	01	Understand distortions on line	Black Board
57	Reflection on a line not terminated in Zo, Reflection coefficient	01	Analyze Transmission line	Black Board
58	Introduction to Transmission line at high frequency (skin effect, approximations at high frequency)	01	Analyze Transmission line	Black Board
59	Parameters of open wire, co axial line at high frequencies	01	Understand Parameters of line at high frequencies	Black Board
60	Voltages and currents on dissipation line, Standing waves	01	Analyze line at high frequencies	Black Board
61	Input impedance of open and short circuited lines, Power and impedance measurement on lines	01	Analyze line at high frequencies	Black Board
62	Construction of smith chart	01	Analyze line at high frequencies	LCD
63	Applications of smith chart	01	Analyze line at high frequencies	LCD
	Total Number of periods	63		

Signature of Course Coordinator

Signature of the HOD

R.V.R. & J.C.COLLEGE OF ENGINEERING, GUNTUR-19
(AUTONOMOUS)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN

Academic Year: 2018-19
Year & Semester: II B.Tech II Semester (EC A,B & C Section)
Branch: Electronics & Communication Engineering
Subject Code & Name: EC 208 & Electronic Circuit Analysis
Name of the faculty: Sri B.Lokeshwar/Sri U.Rama Krishna/ Sri B.Lokeshwar

S.No	Topics to be covered	No. of Periods	Learning Outcomes	Delivery Methods Black Board /LCD
	UNIT – I (BJT AMPLIFIERS & FET AMPLIFIERS)			
1.	Analog signals and Linear amplifiers	1	Analyze BJT	Black Board
2.	Small signal model of BJT	1	Analyze BJT	Black Board
3.	CE amplifier-basic circuit	1	Analyze BJT	Black Board
4.	CE amplifier with bypass capacitor	1	Analyze BJT	Black Board
5.	Common Collector amplifier	1	Analyze BJT	Black Board
6.	Common Base amplifier	1	Analyze BJT	Black Board
7.	Cascade amplifier	1	Analyze BJT	Black Board
8.	Darlington pair, Cascode amplifier	1	Analyze BJT	Black Board
9.	MOSFET DC analysis	1	Analyze MOSFET	Black Board
10.	Common Source amplifier	1	Analyze MOSFET	Black Board
11.	Common Drain amplifier	1	Analyze MOSFET	Black Board
12.	Common Gate amplifier	1	Analyze MOSFET	Black Board
13.	Multistage amplifier	1	Analyze MOSFET	Black Board
14.	Problems	1	Analyze MOSFET	Black Board
	UNIT – II (FREQUENCY RESPONSE)			
15.	Amplifier Frequency Response	1	Analyze BJT at LF	Black Board
16.	System transfer functions	1	Analyze BJT at LF	Black Board
17.	Input & output coupling capacitor effects	2	Analyze BJT at LF	Black Board
18.	Bypass capacitor effects	1	Analyze BJT at LF	Black Board
19.	BJT High frequency response , Hybrid-pi equivalent circuit	2	Analyze BJT at HF	Black Board
20.	Short circuit current gain	1	Analyze BJT at HF	Black Board
21.	Current gain with resistive load	1	Analyze BJT at HF	Black Board
22.	The FET frequency response	1	Analyze MOSFET at LF	Black Board
23.	High Frequency Response of Transistor Circuits	2	Analyze MOSFET at HF	Black Board
	UNIT – III (FEEDBACK)			
24.	Classification of amplifiers	1	Understand negative feedback	Black Board
25.	The feedback concept, The transfer gain with feedback	2	Understand negative feedback	Black Board
26.	General characteristics of Negative Feedback: Gain sensitivity	1	Understand negative feedback properties	Black Board
27.	Bandwidth extension, Noise reduction,	2	Understand negative	Black Board

	Nonlinear distortion, Problems		feedback properties	
28.	Voltage Series Feedback Amplifier, Current Series Feedback Amplifier	2	Understand feedback topologies	Black Board
29.	Current Shunt and Voltage Shunt Feedback Amplifiers.	2	Understand feedback topologies	Black Board
	UNIT – IV (OSCILLATORS)			
30.	Barkhausen Criterion for Sinusoidal Oscillators	1	Understand Positive feedback	Black Board
31.	RC Phase Shift Oscillator using BJT	1	Analyze RC oscillator	Black Board
32.	RC Phase Shift Oscillator using FET	1	Analyze RC oscillator	Black Board
33.	Wein Bridge Oscillator using BJT	1	Analyze RC oscillator	Black Board
34.	Hartley Oscillator using BJT	1	Analyze LC oscillator	Black Board
35.	Colpitt's Oscillators using BJT	1	Analyze LC oscillator	Black Board
36.	Tuned Resonant Oscillator	1	Analyze LC oscillator	Black Board
37.	Crystal Oscillator	2	Analyze Crystals	Black Board
38.	Frequency and Amplitude Stability Criterion for Oscillators.	1	Measure of oscillators	Black Board
	UNIT – V (INTEGRATED CIRCUIT BIASING AND ACTIVE LOADS & OUTPUT STAGES AND POWER AMPLIFIERS)			
39.	Bipolar Transistor Current Sources	2	Analyze BJT current source	Black Board
40.	Wilson and Wilder current source	1	Analyze BJT current source	Black Board
41.	FET Current Sources, Cascode current source	2	Analyze MOSFET current source	Black Board
42.	Circuits with Active Loads	1	Analyze MOSFET Active load at DC	Black Board
43.	Small Signal Analysis of Active Loaded BJT Circuits	1	Analyze BJT Active load at AC	Black Board
44.	Small Signal Analysis of Active Loaded MOSFET Circuits	1	Analyze MOSFET Active load at AC	Black Board
45.	Power Amplifiers, Heat sinks	1	Understand Heat sinks	Black Board
46.	Classes of Amplifiers	1	Analyze power amplifiers	Black Board
47.	Class-A Power Amplifier :Transformer coupled, Inductively coupled	1	Analyze Class A power amplifier	Black Board
48.	Class-B Power Amplifier	1	Analyze Class B power amplifier	Black Board
49.	Class-AB Push-Pull Output Stages.	2	Analyze Class AB power amplifier	Black Board
	Total Number of Periods = 60			

B. Lokeshwar
Signature of Course Coordinator
B.LOKESHWAR

Signature of HOD
Dr.T.RANGA BABU

R.V.R. & J.C.COLLEGE OF ENGINEERING
(Autonomous)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Lesson Plan for PULSE AND DIGITAL CIRCUITS (EC301) (R16)

Academic Year: 2018-2019

Course Year &Semester: B.Tech / III Year I SEM (EC A B& C SECTION)

Name of Faculty: N.Renuka/ P.Sailaja / M.Srinivas

S.No	Topics to be covered	No. of Periods	Learning Outcomes	Delivery Methods Black Board/LCD
		UNIT – I		
1.	Introduction to basic signals and devices	1	Learns about some basic concepts in signals and devices	Black Board
2.	Linear wave shaping of RC LP step input	2	Analyze the response of RC LP circuit	Black Board
3.	Response of HP RC to Step input	1	Analyze HP RC to step input	Black Board
4.	Response of HP RC to pulse , square inputs	2	Analyze HP RC to pulse , square inputs	Black Board
5.	Response of HP RC as a Differentiator ,sinusoidalwave form	1	Design a RC differentiator	Black Board
6.	Percentage of tilt, problems on HP RC	1	Derive tilt and cutoff frequency relationship	Black Board
7.	Response of ramp and exponential input to HP RC	1	Analyses the response of HP RC for ramp and exponential input	Black Board
8.	Problems on HP RC	1	Design a HP RC to different inputs	Black Board
9.	Response of LP RC to step ,pulse and square to ramp and exp inputs	2	Design a HP LC to different inputs	Black Board
10.	Attenuators and problems based on Attenuators	1	Design a compensated attenuator	Black Board
11.	RLC Parallel circuit response and ringing circuit	1	Design a circuit breaker	Black Board

UNIT - II				
12.	Introduction to Clipping circuits	2	Draw the transfer characteristics of clipping circuits	Black Board
13.	Introduction to Shunt clipping circuit and its analysis	1	Analyse a simple clipping circuitand their transfer characteristics	Black Board
14.	Problems on Clipping circuits	1	Design simple clipping circuits	Black Board
15.	Multi diode Clipping circuit analysis and problems on multi diode circuits	1	Analyze and Design a Multi diode Clipping circuit	Black Board
16.	Operation of a clamper	1	Analyze a non linear circuit	Black Board
17.	Steady state response of a clamping circuit	1	Learns about Steady state response of a clamping circuit	Black Board
18.	Problems on clamping circuits	1	Design a clamping circuit	Black Board
19.	Effect of diode characteristics on clamping voltage	1	Design a practical clamper	Black Board
20.	Transfer characteristics of clamper	1	Learns about the Transfer characteristics of clamper	Black Board
UNIT –III				
21.	Multivibrators, types, Basic principle	1	Understand the working principle of a multivibrator	Black Board
22.	Analysis of Bistablemultivibrators	2	Studies about Analysis of Bistablemultivibrators	Black Board
23.	commutating capacitorsand Maximum Frequency of trigger	2	Design commutating capacitors of a MV based on maximum frequency of triggering	Black Board
24.	Various trigger circuits Analysis	2	Study of different triggers to MV's	Black Board
25.	Unsymmetrical and Symmetrical triggering of binary circuit	2	Understand about the Unsymmetrical triggering of binary circuit	Black Board

26.	Analysis of schmitt trigger circuit and Problems	2	Design a square wave converter using Schmitt trigger circuit	Black Board
UNIT – IV				
27.	Monostable Multi vibrator operation	2	Some Introduction about Monostable Multi vibrator operation	Black Board
28.	Analysis of Monostable Multi vibrator	1	Learns about Analysis of Monostable Multi vibrator	Black Board
29.	Monostable Multi vibrator Design and applications	2	Design aMonostable Multi vibrator under different constaints	Black Board
30.	AstableMultivibrator operation and derivation for T	1	Design a astable Multi vibrator under different constaints	Black Board
29.	Introduction to Voltage sweep circuits	2	Learns about its applications	Black Board
30.	Principle and analysis of Miller circuits	1	Understand design of a voltage sweep circuit	Black Board
31.	Principle and analysis of bootstrap sweep circuit	2	Understand design of a voltage sweep circuit	Black Board
UNIT V				
32.	Fundamental concepts of digital circuits	1	Revises about Fundamental concepts of digital circuits	Black Board
33.	CMOS logic family	2	Understand CMOS IC family and comparation	Black Board
34.	NMOS logic family	2	Understand NMOS logic family and comparation	Black Board
35.	TTL logic family	2	Understand TTL logic family and comparation	Black Board
36.	emitter coupled logic family	2	Understand emitter coupled logic and advantages	Black Board
Total Number of Periods		**55**		

Signature of Course Coordinator

Signature of the HOD

R.V.R. & J.C.COLLEGE OF ENGINEERING
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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN FOR LINEAR IC'S & APPLICATIONS EC303(R16)
ACADEMIC YEAR: 2018-2019

COURSE YEAR & SEMESTER: III B.TECH I SEMESTER

NAME OF FACULTY: D.JAGADEESH / U.RAMAKRISHNA// K.SRAVANTHI

S.No	Topics to be covered	No. of Periods	Learning Outcomes	Delivery Methods Black Board/LCD
			UNIT - I	
1.	Amplifier fundamentals	1	Learns about basic of an amplifier	Black Board
2.	Operational amplifier	1	Learns about IC based amplifier	Black Board
3.	Basic Op-Amp configurations	2	Learns about inverting and non inverting configurations	Black Board
4.	Ideal Op-Amp circuit Analysis	1	Learns about Analysis of ideal Op-Amp	Black Board
5.	Feedback in Op-Amp circuits,Op-Amp powering	2	Learns about feedback concept and powering in Op-Amp	Black Board
6.	Current to voltage converters	2	Learns about the working of I-V converter	Black Board
7.	Voltage to current converters	1	Learns about the working of V-I converter	Black Board
8.	Current amplifiers	1	Learns about the working of current amplifier	Black Board
9.	Difference amplifiers	1	Learns about the working of Differential amplifier	Black Board
10.	Instrumentation amplifiers	1	Learns about the working of Instrumentation amplifier	Black Board
			UNIT II	
11.	Common freq response of filters	2	Learns about the freq response of filters	Black Board
12.	Transfer function	1	Studies about the Transfer function	Black Board
13.	First order active filters	1	Learns about the working and analysis of first order Active filters	Black Board
14.	Standard second order response	1	Learns about the working and analysis of second order Active filters	Black Board
15.	Filter approximations cascade design,direct design	2	Studies about the filter approximations for cascade and direct design	Black Board

16.	Simplified Op-Amp circuit diagram, input bias, offset currents, input offset voltage	2	Studies about the DC Characteristics of Op-Amp	Black Board
17.	Input offset error compensation, maximum ratings	2	Learns about offset compensation technique	Black Board
			UNIT III	
18.	Dynamic Op-Amp limitations:open loop response,closed loop response	1	Learns about AC characteristics of Op-Amp	Black Board
19.	Transient response	1	Studies about transient response of Op-Amp	Black Board
20.	Effect of finite gain bandwidth on integrator circuits	2	Learns about effect of FGB on Op-Amp based integrator circuit	Black Board
21.	Effect of finite GBP on filters	2	Learns about effect of FGB on Op-Amp based filters	Black Board
22.	Stability:stability problem,stability in constant GBP opamp circuits	1	Learns about problem of stability in Op-Amp	Black Board
23.	Internal freq compensation	2	Learns about the working of Inter freq compensation techniques of Op-Amp	Black Board
24.	External freq compensation	2	Learns about the working of External freq compensation techniques of Op-Amp	Black Board
			UNIT IV	
25.	**Non linear circuits:**Voltage comparators	2	Learns about the working principle of Voltage comparator	Black Board
26.	Comparator Applications	2	Learns about the applications of Voltage comparator	Black Board
27.	Schmitt trigger	1	Learns about the working principle of Schmitt trigger,Hysteris loop	Black Board
28.	Precision rectifiers	2	Learns about the working principle of precision rectifier	Black Board
29.	Peak detectors	2	Learns about the working principle of peak detector	Black Board
30.	S &H amplifiers	2	Learns about the working principle of S&H amplifiers	Black Board
31.	sine wave generators	2	Learns about the generation of sine wave using Op-Amp	Black Board
32.	Multivibrators	2	Learns about the working and analysis of Multivibrators using Op-Amp	Black Board

33.	Monolithic Timers	2	Learns about structure of monolithic timers	Black Board
34.	Triangular wave generators	1	Learns about the generation of triangular wave using Op-Amp	Black Board
35.	Saw tooth generators	1	Learns about the generation of saw tooth using Op-Amp	Black Board
36.	Monolithic waveform generators	1	Learns about the generators of monolithic waveform using Op-Amp	Black Board
			UNIT V	
37.	**D-A and A-D Converters:** performance specifications	2	Learns about the main Specifications of converters	Black Board
38.	D-A conversion techniques	1	Learns about working of weighted and R-2R DAC	Black Board
39.	A-D conversion techniques	2	Learns about working of successive,servo,Dual slope,Flas type ADC	Black Board
40.	**Non linear amplifiers and PLL:**log/antilog amplifiers	1	Learns about working of Log and Antilog amplifiers	Black Board
41.	Analog multipliers	2	Learns about working of Analog Multipliers	Black Board
42.	Phase locked loops	1	Learns about working of Phase locked loops	Black Board
	Total Number of Periods	**64**		

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R.V.R. & J.C.COLLEGE OF ENGINEERING
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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Lesson Plan for Antennas & Wave Propagation (EC306) (R16)

Academic Year: 2019-2020

Course Year &Semester: B.Tech / III Year I SEM (EC A B& C SECTION)

Name of Faculty: Dr.M.V.S.Prasad/Sri. D.Jagdeesh/Sri.N.Pavan Kumar

S.No	Topics to be covered	No. of Periods	Learning Outcomes	Delivery Methods Black Board/LCD
	UNIT - I			
1.	Radiation Mechanism,	1	Learns about how antenna radiates EM Waves	Black Board
2.	Potential functions-heuristic approach, Maxwell's equation approach,	2	Learns about Potential functions using integral and Maxwells equations	Black Board
3.	Potential functions for sinusoidal oscillations	1	Learns about Potential functions using sinusoidal oscillations	Black Board
4.	Alternating current element, Power radiated by current element,	2	Learns about radiation from a current element	Black Board
5.	Application to short antennas, Assumed current distribution	1	Learns about radiation from a short Dipole and Monopole and their current distributions.	Black Board
6.	Radiation from quarter wave Monopole / half wave dipole	2	Learns about radiation from a Quarter wave Monopole and Half wave Dipole with their current distributions.	Black Board
	UNIT - II			
7.	Isotropic, Directional, Omni-directional patterns	1	Learns about basic patterns of antennas	Black Board
8.	Principle patterns, Field regions	1	Learns about Principle patterns and field regions	Black Board

9.	Radiation density, Radiation intensity, Directive gain, Power gain,	1	Learns about various Parameters of antennas.	Black Board
10	Half power Beam width,FNBW	1	Learns about Parameters of the Pattern	Black Board
11	Antenna polarisation, Power loss factor,	2	Learn about different types of polarization for EM wave propagation	Black Board
12	Radiation efficiency, Effective aperture of antenna,	2	Learn about determination of efficiency and other parameters	Black Board
13	Relation between maximum effective aperture and directivity Friss transmission equation.	2	Learn about relation ships between various parameters Learn about the relation ship between Transmitted and Received power	Black Board
14	Problems	2	Solve different problems relating to parameters of antennas	Black Board
	UNIT - III			
15	Two element array, Uniform linear array	2	Learn about antenna arrays, their advantages and array factor	Black Board
16	Side lobe level and beam width of broadside array, Beam width of end fire array,	2	Learn about deriving expressions for Beam width of different arrays	Black Board
17	Principle of multiplication of patterns	2	Learn about Plotting of radiation pattern of antenna arrays	Black Board
18	Effect of earth on vertical patterns	1	Learn about effect of earth on Patterns	Black Board
19	Binomial array,	2	Learn about Non Uniform linear arrays	Black Board
20	Basic principle of Dolph-Tschebyscheff array.	1	Learn about Principles of Non Uniform linear arrays	Black Board
21	Problems	1	Solve different problems on antenna arrays	Black Board

	UNIT - IV			
22	V and Rhombic antennas	**2**	Learn about different wire antennas	
23	Folded Dipole	1	Learn about Folded Dipole and its mechanism	Black Board
24	Loop antenna, Yagi Uda array	2	Learn about Loop and Yagi Uda antenna	Black Board
25	Helical antenna, Log periodic antenna,	2	Learn about different HF antennas	Black Board
26	Pyramidal and conical Horn antenna,	2	Learn about different Microwave antennas	Black board
27	Corner reflector antenna, Parabolic reflector antennas – Paraboloid and parabolic cylinder, Cassegrain system of reflectors	3	Learn about types of Microwave frequency antennas	Black board
28	Basic principles of slot antennas and micro strip antennas.	1	Learn about principle of Patch antennas	Black board
29	Problems	2	Solve problems on different antenna designs	Black board
	UNIT - V			
30	Concept of wave propagation, Ground wave Propagation	2	Learn about the concept of wave propagation	Black board
31	Space-wave Propagation, Effect of curvature of an Ideal Earth, Variations of Field strength with height in space-wave Propagation,	3	Learn about the principle of Space wave Propagation and their parameters.	Black board
32	Atmospheric effects in space-wave Propagation,	2	Learn about atmospheric effects on wave propagation	Black board

	Radio-Horizon			
33	Earth constants, , Duct Propagation, Extended-range Propagation resulting from Tropospheric Scattering	2	Learn about different types of Propagations at Microwave frequencies	Black board
34	Ionospheric Propagation, Gyro frequency, Refraction and reflection of Sky Waves by the Ionosphere,	2	Learn about the principle of propagation through Ionosphere	Black board
35	Critical Frequency, Skip Distance, Maximum Usable Frequency	1	Learn about the different parameters of Ionosphere	Black board
36	Problems	2	Solve different problems on Wave Propagation.	
	Total Number of Periods	**60**		

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Signature of the HOD

R.V.R. & J.C.COLLEGE OF ENGINEERING
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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Lesson Plan for Digital Communications (EC304) (R16)
Academic Year: 2018-2019
Course Year &Semester: B.Tech / III Year II SEM (EC A B& C SECTION)
Name of Faculty: K.Sravanthi/ K.Upendra Chowdary/ K.Sudhakar

S.No	Topics to be covered	No. of Periods	Learning Outcomes	Delivery Methods Black Board/LCD
		UNIT - I		
1	Fundamentals of analog communications	2	Revision to previous analog modulation techniques and comparison	Black Board
2	Requirements of analog to digital conversions, Sampling	1	Learns about advantages of digital modulation	Black Board
3	Quantization Process, Quantization Noise	1	Learns about requirement of quantization and its impact	Black Board
4	Pulse Code Modulation	1	Studies about the bloks / steps involved in,Derives SNR in PCM	Black Board
5	A-law, mu-law companding, Noise considerations in PCM, Virtues and limitations of PCM	1	Knows PCM advantages and limitations	Black Board
6	Line codes, Delta modulation	2	Knows different signaling techniques, requirement of Delta modulation	Black Board
7	Differential Pulse Code Modulation, Transmitter, Receiver	1	Learns the differential coding and its generation and recovering method	Black Board
		UNIT-II		
8	Matched Filter and its Properties	2	Derives the properties of Matched filters	Black Board
9	Condition for Inter symbol Interference	1	Obtains the ISI condition	Black Board
10	Nyquist's Criterion for Distortionless Baseband Binary Transmission, Ideal Nyquist channel	1	Arrives at a condition to overcome ISI	Black Board
11	Duobinary signaling, Modified Duobinary signaling	2	Knows about precoding technique and its requirement	Black Board
		UNIT-III		
12	Introduction, Pass band transmission model,	1	Understand the digital pass band transmission	Black Board
13	Gram Schmidt Orthogonalization procedure	2	Able to analyze orthogonality of signals	Black Board
14	Geometric representation of Signals	1	Foundation for geometric representation of signals with finite energy	Black Board
15	Coherent detection of signals in noise, Probability of error,	1	Apply the noise effect of signals	Black Board

17	Correlation Receiver	1	Correlation receiver is derived and its equivalence to matched filter	Black Board
18	Coherent BPSK, its generation & Detection, Probability of error	1	Analyze a BPSK signal	Black Board
19	QPSK, Its generation &Detection, Probability of error	1	Analyze a QPSK signal	Black Board
20	BFSK, its generation & Detection, Probability of error	1	Learns the generation and detection of BFSK	Black Board
21	Detection of signals with unknown phase, Non-coherent orthogonal modulation	1	Knows about the requirement of non coherent detection, and method involved.	Black Board
22	Non-coherent BFSK	1	Learns the generation and detection of non-coherent BFSK	Black Board
23	DPSK	1	Learns the generation and detection of DFSK	Black Board
	UNIT IV			
24	Information Theory Basics & Entropy	1	Understand the basic measurement of information	Black Board
25	Uncertainty Information and Entropy Properties Of Entropy,	2	Understand the basic measurement of information	Black Board
26	Source Coding Theorem	1	Understand Source Coding methods and its data compaction	Black Board
27	Data Compaction: Pre-fix coding, Shannon Fano Coding, Huffman Coding,	1	Understand Source Coding methods and its data compaction	Black Board
28	Discrete Memoryless Channels	1	Understand the channel	Black Board
29	Mutual Information & its properties	2	Relates the mutual information with capacity of a channel for communication	Black Board
30	Channel Capacity	1	Relates channel capacity with mutual information	Black Board
31	Channel Coding Theorem, Information Capacity	1	Understand the channel coding theorem, its reliability for data communication	Black Board
32	Differential entropy and mutual information for continuous ensembles	1	Relates mutual information to communication channel for information transmission	Black Board
33	Information capacity theorem	1	Knows that Information capacity theorem tradeoff b/w channel BW & SNR	Black Board
	UNIT-V			
34	Introduction error Control coding, Binary Symmetric Channel,	1	Understand different types of channels	Black Board
35	Linear Block Codes,State diagram, Syndrome, Properties	2	Understand the purpose of parity bits in error controlling	Black Board
36	Syndrome decoding, examples solving, Hamming Codes	3	Computes error decoding	Black Board
37	Cyclic Codes	3	Study subclass of LBC's	Black Board
38	Convolutional Codes,Code Tree, Trellis Diagram	3	Understand operation on the message sequence continuously in a serial manner	Black Board
	Total Number of Periods	**52**		

Signature of Course Coordinator

Signature of the HOD

Lesson Plan

Academic Year: 2018-19

Year & semester: B.Tech/III year II sem(EC A, B &C sections)

Branch: Electronics and communication Engineering

Subject code & name: EC 307 HDL Programming Language

Name of the Faculty: Sri CH.Jayaram

S.NO	Topics to be covered	No.of Periods	Learning outcomes	Delivery Methods Black board/ LCD
	Unit I			
1	Introduction To Logic Design With Verilog	1	Understanding the basic design structure of Verilog	Black board
2	Structural Models Of Combination Logic	1	Learning how to write program in structural model	Black board
3	Logic Simulation, Design Verification, Test Methodology	2	Ability to learn basic concepts of simulation and verification	Black board
4	Propagation Delay	1	Learning how to introduce delay on HDL	Black board
5	Truth Table Models Of Combinational And Sequential Logic With Verilog Modules, Ports.	2	Understand how to design a module in verilog	Black board
6	Gate Types, Gate Delays,	1	Ability to learn about different type of primitives and delays	Black board
7	Dataflow Modelling, Continuous Assignments Delays,	1	Learning how to write program in dataflow model	Black board
8	Expressions, Operators, Operands,	1	Understanding about expressions and key terms	Black board
9	Operator Types	2	Learning about different type of operators	Black board
	Unit II			
10	Logic Design With Behavioral Models of Combinational And Sequential Logic	2	Understanding how to implement circuits in behavioral model	Black board
11	Behavioral modeling , data types for behavioral modeling	2	Learning what are the different type of data types	Black board
12	Behavioral models of combinational logic	1	Learning how to implement combinational circuits in behavioral model	Black board

13	Propagation delay and continuous assignments	1	Learning how to introduce delays and assignment statements	Black board
14	Lathes and level sensitive circuits in Verilog	2	Learning how to implement sequential circuits in behavioral model	Black board
15	Cyclic behavioral models of flip flops and latches	2	Learning how to implement flip flops	Black board
16	Cyclic behavior and edge detection	1	Learning how to implement circuits with cyclic behaviors	Black board
17	A comparison of styles for behavioral modeling.	1	Learning different styles for behavioral model	Black board
	Unit III			
18	Behavioral models of multiplexers, encoders and decoders	2	Learning how to implement circuits mux, decoders	Black board
19	Data flow model of a LFSR machines with multi cycle operations	1	Learning how to implement state machines	Black board
20	Algorithmic state machine charts for behavioral modeling	2	Learning how to implement Algorithmic state machine charts	Black board
21	ASMD charts	1	Learning how to draw ASMD chart for a state machine	Black board
22	Behavioral models of counters, shift registers and register files	2	Learning how to implement shift registers	Black board
23	Switch debounce, metastability, synchronizers for asynchronous signals	2	Learning basic concept of meta stability in Flip flops	Black board
	Unit IV			
24	Introduction to synthesis	2	Learning what is synthesis	Black board
25	Synthesis of combinational logic	1	Learning how to synthesize combinational circuits	Black board
26	Synthesis of sequential logic with latches	1	Learning how to synthesize sequential circuits	Black board
27	Synthesis of three state devices and bus interfaces	2	Learning how to synthesize three state devices	Black board
28	Synthesis of sequential logic with flip flops	2	Learning how to synthesize flip flops	Black board
29	Synthesis of explicit state machines registered logic.	2	Learning how to synthesize state machines	Black board
	UNIT V			
30	Programmable logic devices	1	Learning what are the type of PLDS	Black board
31	Storage devices.	4	Learning about different type of storage devices	Black board

32	Programmable logic array	2	Learning about the working of PLA	Black board
33	Programmable array logic	2	Learning about the working of PAL	Black board
34	Programmability of PLDs CPLDs	1	Learning about the working of PLD and CPLD	Black board

Signature of faculty

Signature of HOD

LESSON PLAN

Academic Year : 2018-2019

Year &Semester :B.Tech / III Year II SEM(EC A ,B & C SECTION)

Branch : Electronics and Communication Engineering

Subject Code &Name :EC 308 Graphical System Design

Name of Faculty : Mr.K.Ashok Kumar

S.No	Topics to be covered	No. of periods	Learning outcomes	Delivery Method Black board/ LCD
	UNIT – I			
1	Overview, Using LabVIEW in the Real World	01	Understand about LabVIEW Applications	LCD
2	The Evolution of LabVIEW	01	Understand About Evolution of LabVIEW	LCD
3	What Is Data Acquisition, Communication Using the Serial Port	02	Understand about Data Acquisition, Communication using the Serial port	LCD
4	Front Panels, Block Diagrams, LabVIEW Projects,	02	Learn about Panels and Projects	LCD
5	SubVIs, the Icon, and the Connector	01	Learn about Icon and Connector	LCD
6	Alignment Grid, Pull-Down Menus,	01	Learn about Alignment Grid and Menus	LCD
7	Floating Palettes, The Toolbar ,Pop-Up Menus, Help, Express VIs.	02	Understand about Palettes and Express VIs	LCD
8	Creating VIs, Basic Controls and Indicators	02	Learn about Basic controls and indictors	LCD
9	Wiring Up, Running the VI, Loading and Saving Vis	01	Learn about Loading and saving VIs	LCD
10	Debugging Techniques, Creating SubVIs, Documenting Your Work	02	Learn about Debugging and Documentation	LCD

		Unit II		
11	Two Loops, Shift Registers	01	Learn about Loops and Registers	LCD
12	The Case Structure, Dialogs	01	Learn about Case Structure	LCD
13	The Sequence Structure	01	Learn about Sequence structure	LCD
14	Flat or Stacked, Timing, The Timed Structures	01	Learn about Flat and timed Structure	LCD
15	The Formula Node, The Expression Node,	01	Learn about Formula and Expression Node	LCD
16	The While Loop + Case Structure Combination.	01	Learn about combination of Loop and Case structure	LCD
17	Creating Array Controls and Indicators, Using Auto-Indexing	01	Learn about creating array controls and Indicators	LCD
18	Two-Dimensional Arrays, Functions for Manipulating Arrays	01	Learn about Two Dimensional Array	LCD
19	Polymorphism, Compound Arithmetic	01	Understand about Polymorphism	LCD
20	All About Clusters, Interchangeable Arrays and Clusters	02	Learn about Clusters	LCD
21	Error Clusters and Error-Handling Functions.	01	Understand about Error Clusters and Error Handling Functions	LCD
		UNIT III		
22	Waveform Charts, Graphs, XY Graphs	02	Understand about charts and Graphs	LCD
23	Chart and Graph Components	01	Understand about Chart and Graph Components	LCD
24	Intensity Charts and Graphs Colour as a Third Dimension	02	Understand about Intensity Charts and Graphs	LCD
25	Time Stamps, Waveforms, and Dynamic Data	01	Understand about Time Stamps and Dynamic Data	LCD
26	Mixed Signal Graphs	01	Learn about Mixed signal Graphs	LCD
27	Exporting Images of Charts and Graphs	01	Learn about Exporting Images	LCD
28	Overview of Exploring Strings	01	Learn about Exploring Strings	LCD
29	More About Strings Using String Functions, Parsing Functions	02	Learn about String Functions and Parsing Functions	LCD

30	File Input/output	01	Understand about File Input/output	LCD
	UNIT IV			
31	Local, Global, and Shared Variables	02	Learn about Local and Global Variables	LCD
32	Property Nodes, Invoke Nodes	01	Learn about Property Nodes and Invoke Nodes	LCD
33	The Event Structure, Type Definitions	02	Learn about Event Structure	LCD
34	The State Machine and Queued Message Handler	02	Understand about State Machine	LCD
35	Messaging and Synchronization	02	Understand about Messaging and Synchronization	LCD
36	Structures for Disabling Code	01	Learn about Disabling Code	LCD
37	Halting VI and Application Execution	02	Analyze Application Execution	LCD
	UNIT V			
38	Data Acquisition DAQ and Other Data Acquisition Acronyms	01	Understand about Data Acquisition Acronyms	LCD
39	How to Connect Your Computer to the Real World Signals	02	Learn to Connect computer to real world signals	LCD
40	Selecting and Configuring DAQ Measurement Hardware.	02	Learn to Configure DAQ	LCD
41	Overview of advanced LabVIEW Features	01	Understand about advanced features	LCD
42	The LabVIEW Options Dialog	01	Understand about Options Dialog	LCD
43	Radices and Units	01	Understand about Radices and units	LCD
44	Automatically Creating a SubVI from a Section of the Block Diagram	02	Learn about automatic creation	LCD
	Total no. of periods	63		

K. Sudhakar
Signature of the Faculty

Signature of the HOD

R.V.R. & J.C.COLLEGE OF ENGINEERING
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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Lesson Plan for Computer Networks (EC309) (R16)

Academic Year: 2018-2019
Course Year &Semester: B.Tech / III Year II SEM (EC A B& C SECTION)
Name of Faculty: Smt T.Suneetha/ Sri N.Sudheer Kumar

S.No.	Topics to be covered	No.of Periods	Learning Outcomes	Delivery Methods
		UNIT - I		
1	Uses of Computer networks	1	List uses of Computer networks	Black Board
2	Network Hardware	2	Identify different types of Networks like LAN,MAN,WAN,& List and Compare networking devices like Hubs,Switches,Routers at different layers and Distinguish different networking topologies	Black Board
3	Network Software	1	Explain & correlate function of computer networks in terms of stack of layers	Black Board
4	OSI reference model	2	Explain OSI reference model as basic reference model in computer networks	Black Board
5	TCP/IP reference model	1	Explain TCP/IP reference model as mostly used reference model in nearly all computers now a days.	Black Board
6	Guided Transmission Media	2	Compare ,Contrast Twisted pair &Coax & Fiber Optic cables & their Limitations.	Black Board
7	Wireless Transmission	2	Describe Microwave &Infrared &Sky wave ,Ground wave, Ionosphere propagations	Black Board
		UNIT - II		
8	Data Link Layer design issues	1	Infer Data Link Layer design issues in terms of Connection oriented &Connection less Services &Reliable ,Unreliable Services	Black Board
9	Elementary Data link Protocols	1	Explain Elementary Data link Protocols like simplex & Stop and Wait	Black Board

10	Sliding window protocols	3	Demonstrate the need for ARQ(Automatic Repeat Request) &Explain Functionality of Sliding window protocols like Stop &Wait ARQ Go Back-N ARQ &Selective Repeat ARQ and their limitations.	Black Board
11	The channel Allocation problem.	1	Analyze the channel Allocation problem	Black Board
12	Multiple Access Protocols	2	Explain Different Multiple Access Protocols like ALOHA ,Slotted ALOHA,CSMA,CSMA/CD,CSMA/CA to solve channel Allocation problem	Black Board
13	Ethernet	1	List & Contrast different Ethernet Standards &Technologies which were developed to meet the market needs.	Black Board
14	Wireless LANs	1	Identify & Summarize the need for wireless connectivity & Wireless LANs &Protocols used	Black Board
15	Broadband wireless	1	Identify & Summarize the need for Broadband wireless to connect computers which are situated at a distance greater than 1KM,understands functionality of Broadband wireless	Black Board
16	Bluetooth	1	Identify & Summarize the need for Bluetooth Technology to connect computers which are situated at a distance less than 10 mt. understands functionality of Bluetooth in terms of piconet & Scatter net	Black Board
17	Data Link Layer Switching	1	Describe Data Link Layer Switching	Black Board
UNIT – III				
18	Network layer Design Issues	1	Describe Network layer Design Issues in terms of Connection oriented &Connection less Services Reliable ,Unreliable Services	Black Board
19	Routing Algorithms	4	Explain &Compare Routing Algorithms as Adaptive & Non Adaptive Algorithms.	Black Board
UNIT – IV				
20	Congestion Control Algorithms	2	Classify & Summarize Congestion Control Algorithms as Open loop & Closed loop.	Black Board
21	Quality of Service	1	List Traffic Descriptors, Traffic Profiles, Traffic shaping, Explains Leaky Token bucket Algorithms &their limitations.	Black Board

22	Internetworking	2	Appraise the need for Internetworking	Black Board
23	The IP Protocol, IP Address	2	Explain The IP Protocol & Distinguish IP Classes	Black Board
24	Internet Control Protocols	1	Identify the need for ICMP&IGMP to provide error control and group management provisions to IP Protocol	Black Board
25	OSPF, BGP	2	Describe the OSPF, BGP Routing Algorithms	Black Board
		UNIT –V		
26	Elements of Transport Protocols	1	Summarize the Elements of Transport Protocols	Black Board
27	TCP, UDP, RTP	4	Explain TCP, UDP, RTP protocols	Black Board
28	DNS	1	Infer the need for DNS an& its functionality in terms of name spaces &different Domains& servers	Black Board
29	Electronic Mail	2	Describe the functionality Electronic Mail	Black Board
30	The World Wide Web	1	Summarize the functionality World Wide Web up to Architecture level	Black Board
31	Multimedia	2	Outline the functionality Multimedia	Black Board
	Total Number of Periods	**50**		

Signature of Course Coordinator

Signature of the HOD

R.V.R & J.C. COLLEGE OF ENGINEERING, GUNTUR-19
(AUTONOMOUS)

DEPARTMENT OF ELECTRONICS & COMMUNICATIONS ENGINEERING

LESSON PLAN : Telecommunication switching systems (EC-311/D) (R16)

ACADEMIC YEAR : 2018-2019

COURSE YEAR &SEMESTER : III year II semester (EC-B &C sections)

NAME OF THE FACULTY : Sri U.RAMAKRISHNA/ N.PAVANKUMAR

S.NO	Topics to be covered	No.of Periods	Learning outcomes	Delivery Methods Black board/ LCD
		Unit I		
1	Evolution of telecommunications	1	Understand the basic elements of telephone switching system	Black board
2	Simple telephone communication basics of switching system	1	Understand basic elements of telephone switching system	Black board
3	Electronic space division switching	1	Understand time and spaced parameters of switched signal	Black board
4	stored program control centralized SPC, distributed SPC	1	Understand time and spaced parameters of switched signal	Black board
5	software architecture	1	Understand time and spaced parameters of switched signal	Black board
6	Two stage, three stage networks time division switching	2	Understand time and spaced parameters of switched signal	Black board
7	Basic time division time switching	1	Understand time and spaced parameters of switched signal	Black board
8	combination switching, three stage switching	2	Understand time and spaced parameters of switched signal	Black board
		Unit II		
9	Subscriber loop systems	1	Understand digital signal path in time and space traffic load system	Black board
10	switching hierarchy and routing	1	Understand digital	Black

			signal path in time and space traffic load system	board
11	Transmission plan	1	Understand digital signal path in time and space traffic load system	Black board
12	signaling techniques in-channel signaling, common channel signaling	2	Understand digital signal path in time and space traffic load system	Black board
13	Network traffic load and parameters grade of services	2	Understand digital signal path in time and space traffic load system	Black board
14	blocking probability	1	Understand digital signal path in time and space traffic load system	Black board
	Unit III			
15	Data communication codes bar codes	1	Understand concept of different codes	Black board
16	Character synchronization, data communication hardware data communication circuits	2	Understand concept of data link protocols in networks	Black board
17	Line control unit serial interface	2	Understand concept of data link protocols in networks	Black board
18	Introduction to data link Protocol functions, character-and bit oriented Data link protocols	1	Understand concept of data link protocols in networks	Black board
19	asynchronous data-link protocols	2	Understand concept of data link protocols in networks	Black board
20	Synchronous data link protocols, synchronous data-link control	2	Understand concept of data link protocols in networks	Black board
21	High level data link control, public switched data networks	2	Understand concept of data link protocols in networks	Black board
22	Asynchronous transfer mode	1	Understand concept of data link protocols in networks	Black board
	Unit IV			
23	Time division multiplexing T1 digital carrier north American digital hierarchy	2	Understand the concept of multiplexing techniques	Black board
24	Digital carrier line coding T carrier systems European digital carrier system	3	Understand the concept of multiplexing techniques	Black board

25	Digital carrier frame synchronization, bit versus word interleaving	3	Understand the concept of multiplexing techniques	Black board
26	Statistical TDM,FDM, FDM hierarchy	1	Understand the concept of multiplexing techniques	Black board
27	composite baseband signal, formation of a master group	1	Understand the concept of multiplexing techniques	Black board
	UNIT V			
28	What is ISDN,ISDN components, ISDN channel types basic and primary rates interfaces, ISDN protocols, ISDN features services and applications other ISDN initiatives	3	Analyze the data transfer techniques	Black board
29	What is dial up networking, analog modem concepts	2	Know the inherent facilities within the system	Black board
30	DSL services, cable modems, home networking concepts and issues	3	Analyze the data transfer techniques	Black board
31	What is network convergence, network issues and convergence effects of network, convergence business convergence at home	2	Know the inherent facilities within the system	Black board
Total classes		49		

Signature of course coordinator

N. Pavan Kumar

(N.PAVANKUMAR)

signature of HOD

(Dr.T.RANGA BABU)

R.V.R. & J.C.COLLEGE OF ENGINEERING, GUNTUR-19
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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Lesson Plan for Digital Signal Processing (EC310) (R16)

Academic Year: 2019-20
Course Year &Semester: B.Tech / III Year II SEM (EC A B& C SECTION)
Name of the faculty: Dr. A. Sudhakar

S.No	Topics to be covered	No. of periods	Learning Outcomes	Delivery Methods Black Board / LCD
	UNIT-I (DISCRETE SIGNALS AND SYSTEMS)			
1.	Introduction to digital signal processing, Advantages and applications	01	Understand need of Digital signal processing	Black Board
2.	Discrete time signals, Classification of systems	01	Understand types of discrete signals and systems	Black Board
3.	LTI system: Stability and causality	02	Analyze LTI system	Black Board
4.	Linear Convolution	02	Perform linear convolution	
5.	Frequency domain representation of discrete time signals and systems: Discrete Time Fourier Transform (DTFT)	01	Perform DTFT using definitions	Black Board
6.	Properties of DTFT	02	Apply properties in determining DTFT of a given signal	Black Board
	UNIT-II (Z-TRANSFORMS)			
7.	Z-transforms, Region of convergence	01	Perform ZT using definitions	Black Board
8.	Z-transform theorems and properties	04	Apply properties in determining ZT of a given signal	Black Board
9.	Parseval's relation ,Relation between Z-transform and Fourier transform of a sequence	01	Understand ZT relationship with FT	Black Board
10.	Inverse Z transform using Cauchy's integration theorem	01	Perform IZT using definitions	Black Board
11.	Partial fraction method	01	Perform IZT using partial fraction method.	Black Board
12.	Long division method	01	Perform IZT using long	Black Board

			division method.	
13.	One sided Z-transform and its Time shifting property	01	Perform unilateral ZT using definitions	Black Board
14.	Solution of difference equations using one sided Z-transform	02	Apply the principles of z-transforms to finite difference equations	Black Board
15.	Frequency response of a stable system	01	Analyze the stability of a system using Z-Transform.	Black Board
	UNIT-III (DFT AND FFT)			
16.	Discrete Fourier Series, Properties of DFS	03	Perform DFS using definitions	Black Board
17.	Discrete Fourier Transform, Properties of DFT	03	Apply properties in determining DFS of a given signal	Black Board
18.	Linear convolution using DFT	01	Determine convolution using DFT	Black Board
19.	Circular convolution	01	Perform circular convolution	Black Board
20.	Computations for evaluating DFT, Decimation in time FFT algorithms	02	Implement & Analyze FFT algorithms	Black Board
21.	Decimation in frequency FFT algorithm	02	Implement & Analyze FFT algorithms	Black Board
22.	Computation of inverse DIT-DFT	01	Implement & Analyze FFT algorithms	Black Board
23.	Computation of inverse DIF-DFT	01	Implement & Analyze FFT algorithms	Black Board
	UNIT-IV (IIR FILTER DESIGN TECHNIQUES)			
24.	Introduction, Properties of IIR filters	02	Understand IIR digital filters	Black Board
25.	Design of Digital Butterworth Filter using bilinear transformation	02	Design Butterworth Filter using bilinear transformation	Black Board
26.	Design of Chebyshev filters using bilinear transformation	02	Design Chebyshev filters using bilinear transformation	Black Board
27.	Design of Digital Butterworth Filter using Impulse invariance transformation method	01	Design Butterworth Filter using Impulse invariance	Black Board

			transformation method	
28.	Design of Chebyshev filters using Impulse invariance transformation method	01	Design Chebyshev filters using Impulse invariance transformation method	Black Board
29.	Design of digital filters using frequency transformation method	01	Design of digital filters using frequency transformation method	Black Board
UNIT-V (FIR FILTER DESIGN TECHNIQUES)				
30.	Introduction to characteristics of linear phase FIR filters,	02	Understand FIR digital filters	Black Board
31.	Frequency response, Comparison of IIR and FIR filters.	02	differentiate FIR & IIR digital filters	Black Board
32.	Designing FIR filters using windowing methods: Rectangular window	02	Design FIR filter using rectangular window	Black Board
33.	Hanning window	01	Design FIR filter using Hanning window	Black Board
34.	Hamming window	01	Design FIR filter using Hamming window	Black Board
35.	Generalized Hamming window	01	Design FIR filter using Generalized Hamming window	Black Board
36.	Bartlett triangular window	01	Design FIR filter using Bartlett triangular window	Black Board
	Total no.of periods	55		

D Jagadeesh

Signature of course coordinator
(D.JAGADEESH)

Signature of HOD
(Dr. T. RANGA BABU)

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Lesson Plan for Embedded Systems (EC424/B) (R16)

Academic Year: 2018-2019

Course Year &Semester: B.Tech / IV Year II SEM (EC A B& C SECTION)

Name of Faculty: Smt T.Suneetha

S.No	Topics to be covered	No. of Periods	Learning outcomes	Delivery Methods
		UNIT – I		
1	Introduction to embedded systems, design challenges	1	List Embedded Systems & define design metrics	Black Board
2	Processor technology, IC technology	1	Distinguish Processor Technologies &IC technologies available for Design Process	Black Board
3	Design technology	1	Distinguish Full custom, ASIC,PLD for Design process	Black Board
4	Tradeoffs	1	Identify compromises in different technologies	Black Board
5	Single purpose processor, RT level combinational logic, sequential logic(RT level)	2	Compare Single purpose processor specific features in terms of Architecture.	Black Board
6	Custom single purpose processor design, optimizing custom single purpose processors	2	Explain custom single purpose processor & propose optimization of Custom processor for specific Applications	Black Board
7	Basic architecture of General purpose processor, pipelining	1	Identify architecture of General purpose processor and Explain the concept of Pipelining	Black Board
8	Programmers view, development environment	1	Choose & Identify the Development tools required for a particular application	Black Board
9	ASIPS, microcontrollers and digital signal processors	1	Compare ASIPS,Microcontrollers & Digital signal processors	Black Board
		UNIT – II		
10	Models vs. languages of State machine and concurrent process models	01	Interpret &Relate different models available to capture the behavior of an Embedded system	Black Board
11	FSMD, using state machines, PSMM	01	Explain FSMD, PSMM	Black Board
12	Concurrent process model, concurrent processes	01	Compare & Contrast Sequential process model & Concurrent process model	Black Board

13	Communication and synchronization among processes	01	Explain Communication among processes in terms of shared Memory and Message Passing synchronization among processes in terms of semaphores and Mutexs	Black Board
14	Data flow model and real time systems	01	Explain Data flow model and real time systems	Black Board
15	Need for communication interfaces	01	Infer the need for communication interfaces	Black Board
16	RS232/UART	01	Explain RS232/UART	Black Board
17	RS422/RS485	01	Explain RS422/RS485	Black Board
18	USB, Infrared, IEEE 802.11	01	Outline USB, Infrared, IEEE 802.11	Black Board
19	Blue Tooth	01	Illustrate Blue tooth	Black Board
	UNIT – III			
20	Introduction to Linux kernel,	2	Identify Linux kernel & Distinguish with Traditional UNIX Kernel	Black Board
21	getting started with the kernel,	2	Summarize various kernel modules and configuration options	Black Board
22	Process management,	3	Outline process creation system calls	Black Board
23	Process scheduling.	3	Distinguish I/O bound process & Processor bound process & Infer importance of Time slice in Scheduling	Black Board
	UNIT – IV			
24	Priority inversion problem	1	Identify the reason for Priority inversion problem	Black Board
25	Priority inheritance protocol	1	Explain Priority inheritance protocol as solution to Priority inversion problem	Black Board
26	Commonalities of different Operating Systems	1	Compare Commonalities of different Operating Systems	Black Board
27	Differences of different Operating Systems	1	Distinguishe Differences of different Operating Systems	Black Board
28	Embedded OS	1	Identify Different types of Embedded OS.	Black Board
29	Real time OS, RT Linux	1	Identify different types Real time OS, RT Linux	Black Board
30	Hand held OS	1	Identify different types Hand held OS	Black Board
31	Introduction to Design technology, automation, synthesis	1	Infer the Importance of Design technology	Black Board
32	Parallel evolution of compilation and synthesis	1	Summarize Parallel evolution of compilation and synthesis	Black Board
33	Logic synthesis, RT synthesis	1	Describe Logic synthesis, RT synthesis	Black Board

34	Behavioral Synthesis, System Synthesis	2	Describe Behavioral Synthesis & System Synthesis	Black Board
35	HW / SW Co- design, Verification	1	Infer HW / SW Co- design, Verification	Black Board
36	Co-Simulation	1	Explain Co-Simulation	Black Board
	Total Number of Periods	**45**		

Suneetha
Signature of Course Coordinator

Signature of the HOD

R.V.R & J.C. COLLEGE OF ENGINEERING, GUNTUR-19
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DEPARTMENT OF ELECTRONICS & COMMUNICATIONS ENGINEERING

LESSON PLAN : OPTICAL COMMUNICATIONS (R16)EC 408

ACADEMIC YEAR : 2019-20

COURSE YEAR &SEMESTER : IV YEAR &VIII SEM

NAME OF THE FACULTY : Dr.T.Ranga Babu/ Dr.M.Satya Sai Ram/M.Sunitha

S.NO	Topics to be covered	No.of Periods	Learning outcomes	Delivery Methods Black board/ LCD
		Unit I		
1	Elements of an Optical Fiber transmission link	1	Learn the Optical Fiber transmission link	Black board
2	Advantages and applications of Optical Fiber	1	Compare the advantages and applications of fibers with copper cables	Black board
3	Ray Theory Transmission and problems	2	Learn the principle of ray theory and solve the problems	Black board
4	Fiber types	2	Learn different types of fibers	Black board
5	Modes of Propagation and problems	3	Learn different mode propagations in the fiber	Black board
6	Fiber materials.	1	Learn different fiber materials	Black board
		Unit II		
7	Attenuation	1	Learn the Causes for the fiber attenuation	Black board
8	Absorption	1	Learn the Causes for the fiber attenuation losses	Black board
9	scattering and bending losses in fibers	2	Learn scattering and bending losses	Black board
10	Intermodal and intramodal dispersion	2	Analyze the fiber dispersion	Black board
11	Splicing	1	Learn different fiber splicers	Black board

12	Connectors and loses	1	Analyze the connector loses of fibers	Black board
13	Fiber Optic couplers	1	Learn about different optical couplers	Black board
14	Fiber Optic Switches	1	Learn about different optical switches	Black board
Unit III				
15	General characteristics of sources and detectors	1	Learn the principles of optical sources and detectors	Black board
16	Light Emitting Diodes types	4	Learn different types of LEDs	Black board
17	LED Characteristics	4	Analyze the characteristics of different LEDs	Black board
18	Working of DH injection laser	1	Learn the operation DH laser	Black board
19	DFB laser	1	Learn the operation DFB laser	Black board
20	Threshold condition for lasing	1	Analyze the threshold condition for lasing	Black board
21	Pin and Avalanche Photodiode	2	Learn the working principle of PIN and avalanche photo diode	Black board
Unit IV				
22	Optical Transmitter Circuits	1	Learn the Optical Transmitter Circuits	Black board
23	Source limitations and LED drive circuits	1	Learn different source limitations and operation of LED drive circuit	Black board
24	Optical Receiver operation	1	Learn the Optical Receiver operation	Black board
25	Digital system transmission	1	Learn Digital system transmission in fibers	Black board
26	Error sources and Receiver configuration	1	Study different error sources in receiver	Black board
27	Preamplifier types	1	Learn about different preamplifiers	Black board
28	Digital receiver performance	1	Analyze the Digital receiver performance	Black board
29	Probability of error	1	Estimate the probability of error	Black board
30	System considerations	1	Learn different System considerations	Black board

31	Link power budget, rise time budget	1	Design the system configuration with link power and rise time budget	Black board
32	OTDM,WDM	1	Know about OTDM,WDM	Black board
		Unit V		
33	Attenuation	1	Learn the procedure to measure the attenuation	Black board
34	Refractive index	1	Learn the procedure to measure the refractive index	Black board
35	Dispersion losses	2	Learn the procedure to measure the refractive index	Black board
36	Optical amplifiers	1	Learn the different the optical amplifiers	Black board
37	SONET/SDH	2	Learn about optical networking - SONET/SDH	Black board
38	Optical interfaces	1	Learn the of optical interface	Black board
39	SONET/SDH rings	2	Learn the architecture of SONET/SDH rings	Black board
	Total classes	55		

(K.ASHOK KUMAR)
Course Co-ordinator

(Dr.T.RANGA BABU)
Professor&Head

R.V.R & J.C. COLLEGE OF ENGINEERING, GUNTUR-19
(AUTONOMOUS)

DEPARTMENT OF ELECTRONICS & COMMUNICATIONS ENGINEERING

LESSON PLAN FOR MOBILE AND CELLULAR COMMUNICATIONS EC-407 (R16)

ACADEMIC YEAR : **2019-20**

COURSE YEAR & SEMESTER: **IV BTech - II sem**

NAME OF THE FACULTY : P.V.Krishnakanth

S.NO	Topics to be covered	No.of Periods	Learning outcomes	Delivery Methods Black board/ LCD
		Unit-I		
1	Evolution of Mobile Radio Communication, Examples of Wireless Communication Systems. Paging system	1	understand evolution of Mobile communication and cell concept to improve capacity of the system.	Black board
2	Cellular concept: Frequency reuse	2-5	understand cellular concepts like frequency reuse, hand-off and Interference.	Black board
3	Channel Assignment strategies, Hand off strategies	6-7	understand cellular concepts like frequency reuse, hand-off and Interference.	Black board
4	Interference and System capacity, Improving coverage and capacity in cellular systems	8-10	understand cellular concepts like frequency reuse, hand-off and Interference.	Black board
		Unit-II		
5	Large Scale Fading :Free space propagation model: Three basic propagation mechanisms. Reflection Ground Reflection(Two-Ray)Model	11-13	apply knowledge of reflection, diffraction and scattering to calculate link budget using path loss models.	Black board
6	Diffraction scattering, Practica Link budget design using path loss models.	14-18	apply knowledge of reflection, diffraction and scattering to calculate link budget using path loss models.	Black board
7	Small Scale Fading : Multipath Propagation, Types of small scale fading. , Parameters of Mobile Multipath channels	19-20	apply knowledge of reflection, diffraction and scattering to calculate link budget using path loss models.	Black board
8	Fading effects due to multipath time delay, Spread and Doppler spread	21-22	apply knowledge of reflection, diffraction and scattering to calculate link budget using path loss models.	Black board

Unit-III				
9	Equalization :Fundamentals of Equalizers	24	understand the importance of Equalization and different diversity techniques	Black board
10	Linear equalizers, Nonlinear equalizers, Decision feedback equalizers	25-26	understand the importance of Equalization and different diversity techniques	Black board
11	MLSE	27	understand the importance of Equalization and different diversity techniques	Black board
12	Diversity Techniques :Space diversity: MRC	28-29	understand the importance of Equalization and different diversity techniques	Black board
13	EGC Selection diversity	30-31	understand the importance of Equalization and different diversity techniques	Black board
14	Polarization diversity, Frequency diversity, Time diversity	32-33	understand the importance of Equalization and different diversity techniques	Black board
Unit-IV				
15	Global System For Mobile (GSM) Historical overview, System overview, The air interface	34-35	know fundamentals of GSM. viz., channels, coding techniques, data transmission, services.	Black board
16	Logical and physical channels	36-37	know fundamentals of GSM. viz., channels, coding techniques, data transmission, services.	Black board
17	Synchronization, Coding, Equalizer	38-40	know fundamentals of GSM. viz., channels, coding techniques, data transmission, services.	Black board
18	Circuit-switched data transmission, Establishing a connection and handover, Services and billing	40-43	know fundamentals of GSM. viz., channels, coding techniques, data transmission, services.	Black board
Unit-V				
19	CDMA : Historical overview, System overview, Air interface	44-46	know fundamentals of CDMA. viz., channels, coding techniques, data transmission, services.	Black board
20	Coding, Spreading and Modulation	47-48	know fundamentals of CDMA. viz., channels, coding techniques, data transmission, services.	Black board
21	Logical and Physical channels, Handover.	49-50	know fundamentals of CDMA. viz., channels, coding techniques, data transmission, services.	Black board

Signature of course coordinator

Signature of HOD

R.V.R. & J.C.COLLEGE OF ENGINEERING
(Autonomous)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN FOR RADAR AND NAVIGATIONAL AIDS (EC410D) (R16)

ACADEMIC YEAR: 2019-2020

COURSE YEAR &SEMESTER: B.TECH / IV YEAR II SEM (EC A B& C SECTION)

NAME OF FACULTY: Dr.M.V.S.PRASAD/Dr.D.ESWARCHAITANYA / Ms. M.HIMAJA

S.No	Topics to be covered	No. of Periods	Learning Outcomes	Delivery Methods Black Board/LCD
		UNIT - I		
1.	Introduction to Radar	1	Learns about some basic concepts in Radar	Black Board
2.	Block Diagram of Pulse Radar	1	Learns about basic pulse radar system	Black Board
3.	Simple form of Radar equation	2	Learns about Radar range equation	Black Board
4.	Detection of signals in noise	1	Learns about the detection of signals in a noisy environment through a Radar	Black Board
5.	Receiver noise	2	Studies about impact of receiver noise on the detection of signals	Black Board
6.	Signal to noise ratio	2	Derives the Range equation interms of signal to noise ratio	Black Board
7.	Integration of Radar pulses	1	Learns about the need of integration of Radar pulses	Black Board
8.	RCS of multiple targets	1	Learns about the dependency of Radar range equation on RCS, Identifies the Radar cross section of the complex target	Black Board
9.	RCS of simple targets	1	Identifies the Radar cross section of the simple target	Black Board
10.	PRF and Range Ambiguities	1	Learns about the impact of PRF on range: like missed target and false alarm	Black Board

11.	Doppler Effect, Limitations of CW Radar	2	Studies about the principle of Doppler Effect & limitations of CW radar like time margins	Black Board
12.	FMCW Radar, Altimeter	1	Studies about modified CW radar and an additional topic is altimeter to measure the height of a target	Black Board
13.	Problems	1	Discussed about some problems	Black Board
		UNIT - II		
14.	MTI Radar	2	Learns about the radar which is used to discriminate the stationary and non stationary targets	Black Board
15.	Delay line cancellers	2	Learns about the additional concept in MTI radar which used to increase performance of a system	Black Board
16.	Frequency response of single delay line cancellers	1	Learns about structure and frequency response of Single Delay line canceller	Black Board
17.	Clutter Attenuation, MTI improvement factor, N-pulse delay line canceller	1	Derivation for CA,IF and also learns about the structure and frequency response of N-pulse delay line canceller	Black Board
18.	Non recursive and Recursive filters	1	Studies about structural difference of recursive and non recursive filters	Black Board
19.	Staggered PRF, Doppler filter banks	2	Learns about the multiple PRF's which is used for transmission and reception of signals.	Black Board
20.	**TRACKING:** Types of Tracking Radar Systems	1	Learns about Basic Tracking system and also various types of tracking radars	Black Board
21.	Sequential lobing,	2	Learns about Block diagram of sequential lobing and also how the steering of beam is different from Conical Scan	Black Board
22.	conical scan	2	Learns about Block diagram of Conical Scan and also how the steering of beam is different from Sequential Lobing	Black Board
23.	Mono pulse	2	Learns about the technique of Mono pulse tracking for amplitude	Black Board

	tracking (amplitude comparison)		comparison of two systems	
24.	Mono pulse tracking (phase comparison)	2	Learns about the technique of Mono pulse tracking for phase comparison of two systems	Black Board
			UNIT - III	
25.	Super heterodyne Receiver	1	Learns about block diagram of Super heterodyne Receiver	Black Board
26.	Types of Duplexers	2	Studies about Branch, Balanced and Circular type duplexers	Black Board
27.	Receiver protectors	2	Studies about Ferrite,diode,TR/ATR type protectors	Black Board
28.	Types of Displays,	2	Learns about A,B,C,D,E,PPI,R-Scope displays	Black Board
29.	Radomes	2	Learns about the Wall construction of Radome	Black Board
			UNIT - IV	
30.	**Electronic Warfare:** Objectives an definitions	2	Learns about the main objectives we need to identified in EW	Black Board
31.	Noise jamming	2	Learns about the Concept of Noise/Radar jamming	Black Board
32.	Types of Electronic counter measures	1	Learns about the Various types of ECM: Deception,jamming,Mechanical and Chemical	Black Board
33.	Electronic counter to counter measures	1	Learns about the Various types of ECCM:Anti Active and Anti passive	Black Board
34.	Stealth applications	1	Learns about the various applications in Deceiving and receiving of signals	Black Board
			UNIT - V	
35.	Elementary ideas of Navigation Aids	2	Some Introduction about need of Navigation	Black Board & LCD
36.	VOR, DME	1	Learns about Equipmental Setup and main specifications of VHF Omni directional Range and VHF with Distance Measuring equipment	Black Board & LCD

37.	DVOR, TACAN	2	Learns about Equipmental Setup and main specifications of DVOR and Tactical Air Navigation System which is used for portability purpose	Black Board & LCD
38.	MLS,ILS	1	Learns about Equipmental Setup and main specifications of Micro wave Landing and Instrument Landing system, used control the Air traffic	Black Board & LCD
39.	GPS ,Automatic Direction finder	2	Learns about Equipmental Setup and main specifications of GPS and also learns about the three segments:**USER,SPACE,CONTROL**	Black Board & LCD
40.	Hyperbolic Navigation (LORAN)	1	Learns about importance of Hyperbolic Navigation and Equipmental Setup and main specifications of LORAN	Black Board & LCD
41.	HyperbolicNavigation (DECA,OMEGA)	2	Learns about another hyperbolic Equipmental Setups and main specifications of DECA and OMEGA	Black Board & LCD
	Total Number of Periods	**62**		

Signature of Course Coordinator

Signature of the HOD

R.V.R. & J.C.COLLEGE OF ENGINEERING, GUNTUR-19
(AUTONOMOUS)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN

Academic Year: 2019-20
Year & Semester: B.Tech Third Semester [Second Year] (EC A,B & C Section)
Branch: Electronics & Communication Engineering
Subject Code & Name: EC 212 & Electronic Devices
Name of the faculty: Dr. J.Ravindranadh / Sri B.Lokeshwar

S.No	Topics to be covered	No. of Periods	Learning Outcomes	Delivery Methods Black Board /LCD
	UNIT – I (Junction-Diode Characteristics & Rectifiers)			
1.	The Open-circuited P-N junction	1	Understand semiconductor diode	Black Board
2.	The P-N Junction as a Diode	1	Understand semiconductor diode	Black Board
3.	he Current Components in a P-N Diode	2	Understand semiconductor diode	Black Board
4.	The Volt-Ampere Characteristic	1	Understand properties	Black Board
5.	Temperature dependence of the V/I characteristic	1	Understand properties	Black Board
6.	Diode resistance, Transition Capacitance	2	Analyze diode	Black Board
7.	Diffusion Capacitance	1	Analyze diode	Black Board
8.	Breakdown Diodes	1	Analyze Zener diode	Black Board
9.	Half wave rectifier, Full wave rectifiers	2	Analyze Half wave rectifier	Black Board
10.	Full wave rectifier with capacitor filter	2	Analyze Full wave rectifier with capacitor	Black Board
	UNIT – II (The Bipolar Transistor & The Junction Field-Effect Transistor)			
11.	The Junction Transistor	1	Understand BJT operation	Black Board
12.	Transistor Current Components	2	Understand BJT operation	Black Board
13.	Transistor as an Amplifier	1	Understand BJT application	Black Board
14.	Common Base configuration	2	Understand the CB configuration	Black Board
15.	The Common Emitter configuration	1	Understand the CE configuration	Black Board
16.	Common Collector configuration	1	Understand the CC	Black Board

17.	The Junction Field-Effect Transistor: Construction, operation	2	Understand JFET operation	Black Board
18.	Characteristics, The Pinch-off voltage, transconductance	2	Understand characteristics of JFET	Black Board
	UNIT – III (Transistor Biasing and Thermal Stabilization)			
19.	The operating point, Bias Stability	1	Analyze BJT at DC	Black Board
20.	Biasing techniques	4	Analyze BJT at DC	Black Board
21.	Stabilization Factors	1	Analyze BJT at DC	Black Board
22.	Stabilization against variations in I_{CO}, V_{BE} ,β	1	Analyze BJT at DC	Black Board
23.	Bias Compensation	1	Understand compensation techniques	Black Board
24.	Thermal runaway	1	Problem in BJT	Black Board
25.	Thermal Stability	1	Understand the condition for stability	Black Board
	UNIT – IV (Fundamentals of the Metal-Oxide-Semiconductor Field effect transistor)			
26.	The two terminal MOS structure	1	Understand MOS capacitor operation	Black Board
27.	Energy band diagrams, Depletion layer thickness	2	Understand MOS capacitor operation	Black Board
28.	Work function differences, Flat band voltage	1	Understand MOS capacitor operation	Black Board
29.	Threshold voltage, Charge distribution	1	Understand MOS capacitor operation	Black Board
30.	Capacitance –Voltage characteristics: Ideal C-V characteristics	1	Understand MOS capacitor characteristics	Black Board
31.	Frequency effects	1	Understand MOS capacitor characteristics	Black Board
32.	The basic MOSFET operation	1	Understand MOSFET operation	Black Board
33.	Current-voltage relationship-concepts	1	Understand MOSFET operation	Black Board
34.	Current-voltage relationship-Mathematical derivation	1	Understand properties	Black Board
35.	Transconductance, substrate bias effects	1	Understand properties	Black Board
36.	Non-ideal effects: channel length modulation, Velocity saturation	1	Understand properties	Black Board
	Total Number of Periods = 48			

B. Lokeshwar
Signature of Course Coordinator
B.LOKESHWAR

Signature of HOD
Dr.T.RANGA BABU

R.V.R & J.C. COLLEGE OF ENGINEERING, GUNTUR-19
(AUTONOMOUS)

DEPARTMENT OF ELECTRONICS & COMMUNICATIONS ENGINEERING

LESSON PLAN : Signals & Systems (R18)

ACADEMIC YEAR : 2019-20

COURSE YEAR &SEMESTER : Semester III [second year]

NAME OF THE FACULTY : K.Anil kumar/K.Sudhakar/P.Bala Prasanthi

S.NO	Topics to be covered	No.of Periods	Learning outcomes	Delivery Methods Black board/ LCD
			Unit I	
1	Introduction to signals and systems, Classification of signals and systems (both discrete and continuous)	3	Able to classify various signals	Black Board
2	Approximation of a function by a set of mutually orthogonal functions	2	Able to analyse signals with mutual orthogonal approach.	Black Board
3	Evaluation of mean square error, Orthogonality in complex functions,	2	Evaluate MSE and orthogonality.	Black Board
4	Trigonometric and Exponential Fourier series, Representation of a periodic function by Fourier series	3	Analyse fourier series expansion	Black Board
5	Alternate form of fourier series,symmetry conditions	3	Able to analyse symmetry conditions.	Black Board
6	Complex fourier spectrum	3	Analyse complex fourier transform and its	Black Board
			Unit II	
7	Fourier transform, fourier transform of some useful functions	3	Able to analyse the response of LTI system in time and frequency domain	Black Board
8	Singularity functions	1	Analyse singularity functions	Black Board
9	Properties of fourier transform	3	Analyse the properties of fourier transform	Black Board
10	Energy density spectrum	2	Analyse energy spectrum	Black Board
11	Impulse response representation of LTI systems,properties	2	Able to analyse the response of LTI system in time and frequency domain	Black Board

12	Frequency response of LTI systems	2	Able to analyse the response of LTI system in time and frequency domain	Black Board
13	Conditions for distortion less transmission	2	Able to understand the conditions for distortionless transmission	Black Board
14	Ideal lowwpass filter,frequency and impulse response of LPF	2	Able to analyse the response of lowpass filter	Black Board
15	Paley-Wiener criterion	1	Able to know about paley wiener criterion	Black Board
		Unit III		
16	Correlation and convolution	2	Able to understand correlation and convolution.	Black Board
17	Properties of correlation functions	2	Able to understand properties of correlation functions	Black Board
18	Sampling theorem and its applications	2	Analyse sampling theorem and its applications	Black Board
19	Ideal interpolator	3	Understand ideal interpolator	Black Board
20	Zero order hold and first order hold	2	Analyse zero order hold and first order hold circuits	Black Board
21	Aliasing and its effects	3	Analyse the effects of aliasing and its effects on signal reconstruction	Black Board
		Unit IV		
22	Laplace transform	2	Understand about necessity of laplace transform	Black Board
23	Region of convergence	2	Understand the existance of laplace transform	Black Board
24	The inverse laplace transform	2	Apply inverse laplace transform for various systems	Black Board
25	Properties of laplace transform	3	Apply the properties of laplace transforms	Black Board
26	problems	3	Analyse the system characteristics	Black Board
	Total classes	60		

(S.Ramesh Babu)
Course Co-ordinator

(Dr.T.RANGA BABU)
Professor&Head

R.V.R. & J.C.COLLEGE OF ENGINEERING
(Autonomous)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Lesson Plan for Electromagnetic Field Theory (EC215) (R18)

Academic Year: **2019-2020**

Course Year &Semester: **B.Tech / II Year I SEM (EC A B& C SECTION)**

Name of Faculty: **Dr. M.V.S. Prasad/ D. Jagadeesh/ K. Anil Kumar**

S.NO	Topics to be covered	No. of Periods	Learning outcomes	Delivery Methods Black board/LCD
		UNIT – I		
1	Introduction To The Electromagnetic Fields	01	Understand electric field	Black Board
2	Vector Algebra, Coordinate System	01	Understand electric field	LCD
3	Types Of Charge Distributions, Coulomb's Law	01	Understand electric field	Black Board
4	Problems On Coulomb's Law, Electric Field Intensity Due To A Point Charge	01	Understand electric field intensity	Black Board
5	Field Due To Different Charge Distribution	01	Understand electric field intensity	Black Board
6	Electric Flux Density, Problems	01	Understand electric flux intensity	Black Board
7	Gauss Law, Proof	01	Analyze gauss's law	Black Board
8	Application Of Guass Law to Point and line Charges.	01	Analyze gauss's law	Black Board
9	Maxwell's 1st Equation,divergence Theorem.	01	Analyze gauss's law	Black Board
10	Energy Epended In Moving A Charge In Electric Field	01	Understand work done	Black Board
11	Work Done To Move A Charge,line Integral	01	Understand work done	Black Board
12	Potential Diff, Potential	01	Understand potential	Black Board
13	Potential Due To A Point Charge, system of charges	01	Understand potential	Black Board
14	The Electric Dipole, Problem.	01	Analyze potential	Black Board
15	Energy Density In Electrostatic Fields.	01	Analyze work done	Black Board
		UNIT – II		
16	Current And Conductors, Problems.	01	Understand conductor properties	Black Board
17	Conductor Properties And Boundary Conditions, The Nature Of Dielectric Materials.	01	Understand conductor properties	Black Board
18	Dielectric Boundary Conditions.	01	Understand Boundary Conditions	Black Board
19	Capacitance , Parallel Plate And Coaxial Capacitance	01	Analyze different capacitors	Black Board
20	Capacitance Of A Two Wire Line.	01	Analyze different capacitors	Black Board
21	Derivation Of Laplace And Poisson's	01	Analyze different capacitors	Black Board

	Equations, Examples Of The Solution Of Laplace Equation.			
		UNIT – III		
22	The Steady Magnetic Field: Biot-savert's Law.	01	Understand magnetic field	Black Board
23	Magnetic Field Due To Infinite Length Current Carrying Conductor, surface	01	Understand magnetic field	Black Board
24	Ampere's Circuital Law,problems.	01	Understand Ampere's Law	Black Board
25	Applications Of Ampere's Law: Coaxial Cable.	01	Analyze Ampere's Law	Black Board
26	Applications Of Ampere's Law: Surface Currents,Solenoid, Toroid.	01	Analyze Ampere's Law	Black Board
27	Curl, Point Form Of Gauss Law, Magnetic Flux,Magnetic Flux Density.	01	Analyze Ampere's Law	Black Board
28	Scalar And Vector Magnetic Potentials.	01	Understand Magnetic Potentials	Black Board
29	Force On A Moving Charge, Problems.	01	Understand Force On Current Elements	Black Board
30	Force On Current Element, Problems.	01	Understand Force On Current Elements	Black Board
31	Force Between Differential Current Elements. The Nature Of Magnetic Materials.	01	Understand Force On Current Elements	Black Board
32	Force And Torque On A Closed Path.	01	Analyze Force On Current Elements	Black Board
33	Magnetization And Permeability, Magnetic Boundary Conditions. Potential Energy In Magnetic Fields.	01	Understand Magnetic Boundary Conditions	Black Board
		UNIT – IV		
34	Faraday's Law And Transformer Emf.	01	Understand Electromotive Force	Black Board
35	Motional Emf, Displacement Current, Inconsistency Of Ampere's Law, Modification Of Ampere's Law.	01	Understand Electromotive Force	Black Board
36	Maxwell's Equations In Point Form And Integral Form, Problems.	01	Analyze Electromotive Force	Black Board
37	Wave Equations For Free Space, Uniform Plane Wave Propagation.	01	Understand Plane Wave Propagation	Black Board
38	Uniform Plane Wave Propagation.	01	Understand Plane Wave Propagation	Black Board
39	Wave Equations For Conducting Medium.	01	Understand Plane Wave Propagation	Black Board
40	Sinusoidal Time Variations.	01	Understand Plane Wave Propagation	Black Board
41	Wave Propagation In Lossless Medium In Phasor Form.	01	Understand Plane Wave Propagation	Black Board
42	Conductors And Dielectrics.	01	Understand Plane Wave Propagation	Black Board
43	Wave Propagation In Dielectrics And Conductors In Terms Of Attenuation And Phase Constants.	01	Understand Plane Wave Propagation	Black Board
44	Polarization- Linear, Circular And Elliptical Polarization	01	Understand Plane Wave Propagation	Black Board
45	Direction Cosines.	01	Understand Plane Wave Propagation	Black Board

46	Reflection By A Perfect Conductor-normal Incidence	01	Analyze Plane Wave Propagation	LCD
47	Reflection By A Perfect Conductor-Oblique Incidence, reflection By A Perfect Dielectric- Normal Incidence.	01	Analyze Plane Wave Propagation	LCD
48	Reflection By Dielectric - Oblique Incidence	01	Analyze Plane Wave Propagation	Black Board
49	Brewster Angle, Problems	01	Analyze Plane Wave Propagation	Black Board
50	Poynting Theorem, Poynting Vector, Problems	01	Analyze Plane Wave Propagation	Black Board
	Total No.of periods	**53**		

Signature of Course Coordinater

Signature of the HOD

R.V.R. & J.C.COLLEGE OF ENGINEERING (Autonomous)
Chandramoulipuram, Chowdavaram, GUNTUR – 522 019.
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

1. TITLE OF THE COURSE WITH CODE NUMBER:

Course Code	:	**PS511**
Title of the Course	**:**	MODERN CONTROL THEORY
Year & semester	**:**	M.Tech. First Year &First Sem
Academic Year	**:**	2018-19
Periods per Week	**:**	4 P theory / week
Nature of the Course	**:**	Engineering Core
Name of Instructor	**:**	Dr. A.RamaKoteswaraRao
Designation	**:**	Associate Professor
E-mail	**:**	ramnitkkr@gmail.com,

Course Objectives:

Main objectives of this course are

1. To familiarize the students with the state space analysis of dynamic systems and observe their Controllability and Observability.
2. To make students understand the concepts of describing function analysis of nonlinear systems and analyze the stability of the systems
3. To familiarize the students with the concepts of optimal control.

Course Learning outcomes:

Upon completion of the course, student will be able to:

CO1: Evaluate the design of state space analysis
CO2: Evaluate the Controllability and Observability of State Model
CO3: Analyze non-linear control systems using describing functions.
CO4: Analyze the stability of Non-linear control systems using different techniques.
CO5: Evaluate the design of optimal control.

Content Delivery Methods:

M1: Lecture interspersed with discussion M2: Guest Lecture
M3: Tutorial M4: Field Visits
M5: Experimental (Models, Virtual, simulation) M6: Group Assignments, Other Pedagogical tools

LESSON PLAN

	Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
UNIT – I	1.	The concept of state, state variable analysis.	M.Gopal	Black Board	M1
	2.	State equations for dynamic systems	M.Gopal	Black Board	M1
	3.	Time invariance and Linearity	M.Gopal	Black Board	M1
	4.	Nonuniqueness of state model	M.Gopal	Black Board	M1
	5.	State diagrams for Continuous-Time State models	M.Gopal	Black Board	M1
	6.	Problems on state diagrams	M.Gopal	Black Board	M1
	7.	Linear Continuous time models for physical systems	M.Gopal	Black Board	M1
	8.	Problems on physical system modelling	M.Gopal	Black Board	M1, M3
	9.	Problems on physical system modelling	M.Gopal	Black Board	M1
	10.	Existence and uniqueness of Solutions to Continuous-Time State Equations	M.Gopal	Black Board	M1
	11.	Solutions of Linear Time Invariant Continuous-Time	M.Gopal	Black Board	M1

	Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
		State Equations			
	12.	State transition matrix and its properties	M.Gopal	Black Board	M1
	13.	Problems on State transition matrix	M.Gopal	Black Board	M1, M3
	14.	Problems on State transition matrix	Ogata.K	Black Board	M1, M3
UNIT – II	15.	General concept of controllability	M.Gopal	Black Board	M1
	16.	General concept of Observability	M.Gopal	Black Board	M1
	17.	Controllability tests for Continuous-Time Invariant Systems	M.Gopal	Black Board	M1
	18.	Observability tests for Continuous-Time Invariant Systems	M.Gopal	Black Board	M1
	19.	Problems on Controllability test	M.Gopal	Black Board	M1,M3
	20.	Problems on Observability test	M.Gopal	Black Board	M1
	21.	Controllability and Observability of State Model in Jordan Canonical form	M.Gopal	Black Board	M1
	22.	Controllability and Observability Canonical forms of State model.	M.Gopal	Black Board	M1
	23.	Problems on Jordan Canonical form	Ogata.K	Black Board	M1
UNIT – III	24.	Non Linear Systems Introduction	M.Gopal	Black Board	M1

	Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
	25.	Types of Non-Linearities : Saturation – Dead-Zone - Backlash – Jump Phenomenon etc.	M.Gopal	Black Board	M1
	26.	Singular Points	M.Gopal	Black Board	M1
	27.	Singular Points	M.Gopal	Black Board	M1
	28.	Introduction to Linearization of nonlinear systems	M.Gopal	Black Board	M1
	29.	Properties of Non-Linear systems	M.Gopal	Black Board	M1,M3
	30.	Describing function approach	M.Gopal	Black Board	M1
	31.	describing function analysis of nonlinear systems	M.Gopal	Black Board	M1
	32.	Derivation of describing functions for saturation nonlinearity	M.Gopal	Black Board	M1
	33.	Derivation of describing functions for dead-zone nonlinearity	M.Gopal	Black Board	M1
	34.	Derivation of describing functions for Back-Lash nonlinearity	M.Gopal	Black Board	M1, M3
	35.	Derivation of describing functions for combination of nonlinearities	M.Gopal	Black Board	M1, M3
	36.	Derivation of describing functions for combination of nonlinearities	M.Gopal	Black Board	M1, M3

	Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
UNIT-IV	37.	Stability in the sense of Lyapunov	M.Gopal	Black Board	M1
	38.	Lyapunov's stability and Lypanov's instability theorems	M.Gopal	Black Board	M1
	39.	Stability Analysis of the Linear continuous time invariant systems by Lyapunov second method	M.Gopal	Black Board	M1
	40.	Direct method of Lyapunov	M.Gopal	Black Board	M1
	41.	Generation of Lyapunov functions using Variable gradient method	M.Gopal	Black Board	M1
	42.	Generation of Lyapunov functions using Krasovskii's method	M.Gopal	Black Board	M1
	43.	Problems on Variable gradient method	M.Gopal	Black Board	M1
	44.	Problems on Variable gradient method	Ogata.K	Black Board	M1, M3
	45.	Problems on Krasovskii's method	M.Gopal	Black Board	M1
	46.	Problems on Krasovskii's method	Ogata.K	Black Board	M1,M3
	47.	Estimation of transients using Lyapunov functions	M.Gopal	Black Board	M1
	48.	Estimation of transients using Lyapunov functions	M.Gopal	Black Board	M1
	49.	Problems	M.Gopal	Black Board	M1
UNIT – V	50.	Introduction to optimal control	M.Gopal	Black Board	M1
	51.	Formulation of optimal control problem	M.Gopal	Black Board	M1

	Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
	52.	calculus of variations – fundamental concepts	M.Gopal	Black Board	M1
	53.	Problems	M.Gopal	Black Board	M1
	54.	variation of functionals	M.Gopal	Black Board	M1, M3
	55.	Fundamental theorem of Calculus of variations	M.Gopal	Black Board	M1
	56.	Boundary conditions –constrained minimization	M.Gopal	Black Board	M1
	57.	Hamiltonian method	Ogata.K	Black Board	M1
	58.	Linear Quadratic regulator	M.Gopal	Black Board	M1
	59.	Problems on LQR	M.Gopal	Black Board	M1,M3
	60.	Problems on LQR	M.Gopal	Black Board	M1,M3
	61.	Problems on LQR	Ogata.K	Black Board	M1,M3

R.V.R. & J.C.COLLEGE OF ENGINEERING (Autonomous)

Chandramoulipuram, Chowdavaram, GUNTUR – 522 019.

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

PS 512 Advanced Power system Analysis

LESSON PLAN (AY 2018-19)

Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
1	Course Objectives & Outcomes, Syllabus Discussion	Stagg G.Ward, El-Abiad	Power Point	M1
2	Matrices Properties	Stagg G.Ward, El-Abiad	Power Point	M1
3	Partitioning Of Matrices	Stagg G.Ward, El-Abiad	Power Point	M1
4	Introduction To Graph Theory	Stagg G.Ward, El-Abiad	Power Point	M1
5	Formation Of Incidence Matrices A^, A, B, B^	Stagg G.Ward, El-Abiad	Power Point	M1
6	Formation Of Incidence Matrices C,c^,k	Stagg G.Ward, El-Abiad	Power Point	M1
7	Numerical For Formation Of Incidence Matrices	Stagg G.Ward, El-Abiad	Power Point	M3
8	Concept Of Primitive Network & Interconnected Network, Equations	Stagg G.Ward, El-Abiad	Power Point	M1
9	Derivation For Ybus Using Singular Transformation	Stagg G.Ward, El-Abiad	Power Point	M1
10	Derivation For Ybr Using Singular Transformation	Stagg G.Ward, El-Abiad	Power Point	M1
11	Derivation For Zloop Using Singular Transformation	Stagg G.Ward, El-Abiad	Power Point	M1
12	Problem On Ybus Using Singular Transformation	Stagg G.Ward, El-Abiad	Black Board	M3
13	Problem On Ybr & Zloop	Stagg G.Ward, El-Abiad	Black Board	M3
14	Derivations For Ybr Using Non-singular Transformation	Stagg G.Ward, El-Abiad	Power Point	M1
15	Derivations For Zloop Using Non-singular Transformation	Stagg G.Ward, El-Abiad	Power Point	M1
16	Formation Of Ybus Using Direct Inspection Technique	Stagg G.Ward, El-Abiad	Power Point	M1
17	Problems On Ybus Using Inspection Technique	Stagg G.Ward, El-Abiad	Black Board	M3
18	Ybus With Tap Changing Transformer	Stagg G.Ward, El-Abiad	Power Point	M1
19	Numerical on Tap changing Transformer	Stagg G.Ward, El-Abiad	Black Board	M3
20	Modelling Of Phase Shifting Transformer	Stagg G.Ward, El-Abiad	Power Point	M1
21	Modelling Of Synchronous Machine, Load & Transmission Lines	Stagg G.Ward, El-Abiad	Power Point	M1
22	Modelling Of Three Phase Transmission Lines	J. Arrilaga and C.P.Arnold	Power Point	M1

Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
23	Formation Of Zbus Using Building Algorithm	Stagg G.Ward, El-Abiad	Power Point	M1
24	Branch Algorithm	Stagg G.Ward, El-Abiad	Power Point	M1
25-26	Addition Of Link Algorithm	Stagg G.Ward, El-Abiad	Power Point	M1
27	Problem On Zbus Formation Without Mutual Coupling	Stagg G.Ward, El-Abiad	Black Board	M3
28	Problem On Zbus With Mutual Coupling	Stagg G.Ward, El-Abiad	Black Board	M3
29	Modification Of Zbus Due To The Changes In Network	Stagg G.Ward, El-Abiad	Power Point	M1
30	Load Flow Studies, Gauss, G-s Load Flow Techniques	Stagg G.Ward, El-Abiad	Power Point	M1
31	Problem On Gauss Seidel Load Flow With Pq Buses	Stagg G.Ward, El-Abiad	Black Board	M3
32	Problem On Gslf With Acceleration Factor	Stagg G.Ward, El-Abiad	Black Board	M3
33	Gslf With Pv Bus	Stagg G.Ward, El-Abiad	Power Point	M1
34	Newton Raphson Load Flow Technique Rectangular Version	Stagg G.Ward, El-Abiad	Power Point	M1
35	Nrlf (polar Version)	Stagg G.Ward, El-Abiad	Power Point	M1
36	Problem On Nrlf (rectangular Version)	Stagg G.Ward, El-Abiad	Black Board	M3
37	Problem On Nrlf (rectangular Version)	Stagg G.Ward, El-Abiad	Black Board	M3
38	Problem On Nrlf(polar Version)	Stagg G.Ward, El-Abiad	Black Board	M3
39	Fdlf Technique & Numerical	Stagg G.Ward, El-Abiad	Power Point	M1
40	Fault Analysis, Symmetrical fault Algorithm	Stagg G.Ward, El-Abiad	Power Point	M1
41	Unsymmetrical faults, LG Fault	Stagg G.Ward, El-Abiad	Power Point	M1
42	LL, LL-G Faults	Stagg G.Ward, El-Abiad	Power Point	M1
43	Problems on symmetrical faults	Stagg G.Ward, El-Abiad	Black Board	M3
44-45	Problems on unsymmetrical faults	Stagg G.Ward, El-Abiad	Black Board	M3
46	Contingency Analysis Using Zbus	J.J.Grainger, W.D.Stevenson JR	Power Point	M1
47	Analysis Of Single And Multiple Contingencies	J.J.Grainger, W.D.Stevenson JR	Power Point	M1
48	Piece Wise Solution Of Interconnected Systems	J.J.Grainger, W.D.Stevenson JR	Power Point	M1
49	Analysis Of Single & Multiple Contingencies & System Reduction For Contingencies	J.J.Grainger, W.D.Stevenson JR	Power Point	M1
50	Problems On Contingency Analysis	J.J.Grainger, W.D.Stevenson JR	Black Board	M3

TEXT BOOKS:

1. Stagg G.Ward, El-Abiad : Computer methods in power system analysis, McGraw Hill, ISE, 1968.
2. J.J.Grainger, W.D.Stevenson JR, Power system analysis, TMH, Delhi 2007.
3. J. Arrilaga and C.P.Arnold: Computer modelling of electric power systems, John Wiley & Sons, N.Y.1983.

Content Delivery Methods:

M1: Lecture interspersed with discussion
M2: Guest Lecture
M3: Tutorial
M4: Field Visits
M5: Experimental (Models, Virtual, Simulation)
M6: Flipped class room

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Chandramoulipuram, Chowdavaram, GUNTUR – 522 019.
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING
PS 513 Advanced Power system protection

LESSON PLAN (AY 2018-19)

Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
1	Review of protective devices, Need for protection systems	Badri Ram and D.N.Vishwakarma	Power Point	M1
2	Nature and causes of faults, types of faults, effects of faults, fault statistics	Badri Ram and D.N.Vishwakarma	Power Point	M1
3	evolution of protective relays, essential qualities of protection	Badri Ram and D.N.Vishwakarma	Power Point	M1,M3
4	zones of protection, primary & back up protection	Badri Ram and D.N.Vishwakarma	Power Point	M1
5	**STATIC RELAYS:** Advantages of static relays-Basic construction of static relays	T.S. MadhavaRao	Power Point	M1
6	Level detectors-Replica impedance	T.S. MadhavaRao	Power Point	M1
7	Mixing circuits-General equation for two input phase and amplitude comparators	T.S. MadhavaRao	Power Point	M1
8	Duality between amplitude and phase comparators	T.S. MadhavaRao	Power Point	M1
9	**AMPLITUDE COMPARATORS**: Circulating current type and opposed voltage type	T.S. MadhavaRao	Power Point	M1
10-11	rectifier bridge comparators, Direct and Instantaneous comparators	T.S. MadhavaRao	Power Point	M1
12	**PHASE COMPARATORS:** Coincidence circuit type	T.S. MadhavaRao	Power Point	M1
13	block spike phase comparator, techniques to measure the period of coincidence	T.S. MadhavaRao	Power Point	M1
14	Integrating type-Rectifier and Vector product type	T.S. MadhavaRao	Power Point	M1
15	Phase comparators	T.S. MadhavaRao	Power Point	M1
16-17	**STATIC OVER CURRENT RELAYS:** basic principles Instantaneous over-current relay	Badri Ram and D.N.Vishwakarma	Power Point	M1
18-19	Time over-current relays, definite time and Inverse definite time over-current relays	Badri Ram and D.N.Vishwakarma	Power Point	M1
20	**DIFFERENTIAL RELAYS:** Analysis of Static Differential Relays	T.S. MadhavaRao	Power Point	M1
21	Static Relay schemes –Duo bias transformer differential protection	T.S. MadhavaRao	Power Point	M1
22	Harmonic restraint relay	T.S. MadhavaRao	Power Point	M1
23	Static impedance-reactance–MHO and angle impedance relay-	T.S. MadhavaRao	Power Point	M1
24	Sampling comparator –realization of reactance and MHO relay using sampling comparator.	T.S. MadhavaRao	Power Point	M1

Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
25-26	**Protection of Generators -** Percentage differential protection, Protection against stator internal faults, stator overheating protection;	Badri Ram and D.N.Vishwakarma	Power Point	M1
27	Rotor Protection – Field ground fault protection, loss of excitation protection; protection against motoring and protection against voltage regulator failure.	Badri Ram and D.N.Vishwakarma	Power Point	M1
28	**Transformer Protection:** Percentage differential protection, protection against magnetizing inrush current,	Badri Ram and D.N.Vishwakarma	Power Point	M1
29	Buchholz relay, over fluxing protection. **Bus Zone Protection:** Differential current protection, high impedance relay scheme, frame leakage protection.	Badri Ram and D.N.Vishwakarma	Power Point	M1
30	**MICROPROCESSOR BASED PROTECTIVE RELAYS:** Introduction, advantages	Badri Ram and D.N.Vishwakarma	Power Point	M1
31	Over current relays Block diagram and flowchart	Badri Ram and D.N.Vishwakarma	Power Point	M1
32	impedance relays-directional relay-reactance relay Block diagram and flowchart	Badri Ram and D.N.Vishwakarma	Power Point	M1
33	Generalized mathematical expressions for distance relays-measurement of resistance and reactance	Badri Ram and D.N.Vishwakarma	Power Point	M1
34	MHO and offset MHO relays-Realization of MHO characteristics-Realization of offset MHO characteristics	Badri Ram and D.N.Vishwakarma	Power Point	M1
35	Basic principle of Digital computer relaying	Badri Ram and D.N.Vishwakarma	Power Point	M1

TEXT BOOKS:

1. Badri Ram and D.N.Vishwakarma, "Power system protection and Switch gear", TMH publication New Delhi 1995.
2.T.S. MadhavaRao, Power system protection Static relays, TMH 2nd edition 1981

Content Delivery Methods:

M1: Lecture interspersed with discussion M2: Guest Lecture
M3: Tutorial M4: Field Visits
M5: Experimental (Models, Virtual, Simulation) **M6: Flipped class room**

R.V.R. & J.C.COLLEGE OF ENGINEERING (Autonomous)
Chandramoulipuram, Chowdavaram, GUNTUR – 522 019.
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING
PS 576 High Voltage Engineering & Insulation

LESSON PLAN (AY 2018-19)

Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
1	Course Objectives & Outcomes, Syllabus Discussion	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Black Board	M1
2	Ionization process	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Black Board	M1
3	Townsend's current growth equation	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Black Board	M1
4	current growth in the secondary processes	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Black Board	M1
5	Townsend's criterion for breakdown	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Black Board	M1
6	streamer theory of breakdown in gases	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Black Board	M1
7	Paschen's law, breakdown in non-uniform fields and corona discharge	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Black Board	M3
8	Liquid as Insulator, pure and commercial liquids	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Black Board	M1
9	breakdown in pure and commercial liquids	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Black Board	M1

Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
10	Intrinsic breakdown, electromechanical breakdown, thermal breakdown	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Black Board	M1
11	Breakdown of solid dielectrics in practice	High Voltage Engineering fundamentals by Kuffel and Zungel, Elsevier Publications	Black Board	M1
12	Breakdown in composite dielectrics	High Voltage Engineering fundamentals by Kuffel and Zungel, Elsevier Publications	Black Board	M3
13	Solid dielectrics used in practice	High Voltage Engineering fundamentals by Kuffel and Zungel, Elsevier Publications	Black Board	M3
14	Generation of high D.C.,	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Power Point	M1
15	Generation of high alternating voltages	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Power Point	M1
16	Definition of impulse voltages, circuits for producing impulse voltages	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Power Point	M1
17	Components of an impulse generator	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Black Board	M3
18	Generation of impulse currents	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH		M1

Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
19	Tripping and control of impulse generators	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Black Board	M3
20	Measurement of high d.c.voltages	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Power Point	M1
21	Measurement of high d.c.voltages	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Power Point	M1
22	Measurement of high a.c. and impulse voltages,	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Power Point	M1
23	Measurement of high d.c current	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Power Point	M1
24	Measurement of a.c. current	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Power Point	M1
25	Measurement of impulse current	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Power Point	M1
26	Measurement of D.C. resistivity,	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Black Board	M3
27	measurement of dielectric constant and loss factor	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Black Board	M3
28	partial discharge measurements	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Power Point	M1

Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
29	testing of insulators	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Power Point	M1
30	testing of bushing	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Black Board	M3
31	testing of circuits breakers	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Black Board	M3
32	testing of transformers and surge diverters	High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH	Black Board	M1
33	Natural causes for over voltages –	High Voltage Engineering fundamentals by Kuffel and Zungel, Elsevier Publications	Black Board	M1
34	Lightning phenomenon,	High Voltage Engineering fundamentals by Kuffel and Zungel, Elsevier Publications	Black Board	M1
35	Overvoltage due to switching surges, system faults and other abnormal conditions,	High Voltage Engineering fundamentals by Kuffel and Zungel, Elsevier Publications	Black Board	M3
36	Overvoltage due to switching surges, system faults and other abnormal conditions,	High Voltage Engineering fundamentals by Kuffel and Zungel, Elsevier Publications	Black Board	M3
37	Overvoltage due to switching surges, system faults and other abnormal conditions,	High Voltage Engineering fundamentals by	Black Board	M3

Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
		Kuffel and Zungel, Elsevier Publications		
38	Overvoltage due to switching surges, system faults and other abnormal conditions,	High Voltage Engineering fundamentals by Kuffel and Zungel, Elsevier Publications	Black Board	M3
39	Principles of Insulation Coordination on High voltage and Extra High Voltage power systems	High Voltage Engineering fundamentals by Kuffel and Zungel, Elsevier Publications	Black Board	M3
40	Principles of Insulation Coordination on High voltage and Extra High Voltage power systems	High Voltage Engineering fundamentals by Kuffel and Zungel, Elsevier Publications	Power Point	M1
41	Principles of Insulation Coordination on High voltage and Extra High Voltage power systems	High Voltage Engineering fundamentals by Kuffel and Zungel, Elsevier Publications	Power Point	M1
42	Principles of Insulation Coordination on High voltage and Extra High Voltage power systems	High Voltage Engineering fundamentals by Kuffel and Zungel, Elsevier Publications	Power Point	M1

TEXT BOOKS:

1. High Voltage Engineering by M.S.Naidu and V.Kamaraju – TMH.

2. High Voltage Engineering fundamentals by Kuffel and Zungel, Elsevier Publications

Content Delivery Methods:

M1: Lecture interspersed with discussion
M2: Guest Lecture
M3: Tutorial
M4: Field Visits
M5: Experimental (Models, Virtual, Simulation)
M6: Flipped class room

COURSE OBJECTIVES:

1. To impart the knowledge on breakdown mechanism in the insulators used in the power system network
2. To gain the knowledge on generations and measurement of D.C voltages, A.C voltages and impulse Voltages.
3. To find out various method of testing electrical apparatus used in the transmission and distribution.

COURSE OUTCOMES: Upon the completion of this course the student will be able to

1. Understand the breakdown mechanism of gas, liquid and solid insulators.
2. Know various methods of generating and measuring various types of voltages and currents.
3. Understand different methods of measuring various types of voltages and currents.
4. Gain knowledge on testing of various electrical apparatus.
5. Get an idea of insulation coordination and causes of over voltages at high voltage level.

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Chandramoulipuram, Chowdavaram, GUNTUR – 522 019.
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING
PS 581 DISTRIBUTION SYSTEMS PLANNING & AUTOMATION

LESSON PLAN (AY 2018-19)

Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
1	Introduction to distribution systems and planning of DS	Turan Gonen	Power Point	M1
2-3	Planning and forecast techniques	Turan Gonen	Power Point	M1
4	Present and future role of computers in distribution system planning	Turan Gonen	Power Point	M1
5	Load characteristics and Load models	Turan Gonen	Power Point	M1
6	Problems on load characteristics	S. Sivanagaraju and V. Sankar	Power Point	M1
7	Load growth – tariffs, problems on tariffs	S. Sivanagaraju and V. Sankar	Power Point	M1
8	Tutorial on load characteristics and tariffs	S. Sivanagaraju and V. Sankar		M1,M3
9	**Deign of sub transmission lines and distribution substations:** Introduction – sub transmission systems	Turan Gonen	Power Point	M1
10	distribution substation – Substation bus schemes , description and comparison of switching schemes	Turan Gonen	Power Point	M1
11-12	substation location and rating	Turan Gonen	Power Point	M1
13	Application of network flow techniques in rural distribution networks to determine optimum location of sub-station	Turan Gonen	Power Point	M1
14	**Design considerations on primary systems:** Introduction	Turan Gonen	Power Point	M1
15	types of feeders - voltage levels	Turan Gonen	Power Point	M1
16	Radial type feeders - feeders with uniformly distributed load and non uniformly distributed loads	Turan Gonen	Power Point	M1
17	**Design considerations of secondary systems:** Introduction	Turan Gonen	Power Point	M1
18	secondary voltage levels	Turan Gonen	Power Point	M1
19	Secondary banking - existing systems improvement	Turan Gonen	Power Point	M1
20-21	**Voltage drop and power loss calculations:** Three phase primary lines - non 3 phase primary lines - 4 wire multi grounded primary lines	Turan Gonen S. Sivanagaraju and V. Sankar	Power Point	M1
22	copper loss – Distribution feeder costs	S. Sivanagaraju and V. Sankar	Power Point	M1
23	loss reduction and voltage improvement in rural distribution networks	S. Sivanagaraju and V. Sankar	Power Point	M1
24-25	Problems	S. Sivanagaraju and V. Sankar	Power Point, Tutorial	M1,M3
26	**Distribution system Protection:** Basic definitions - over current protection devices - fuses, automatic circuit	S. Sivanagaraju and V. Sankar	Power Point	M1

Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
	reclosures, automatic line sectionalizers - objectives of distribution system protection			
27	coordination of protective devices - Fuse to Fuse coordination, Fuse to circuit breaker coordination, Reclosure to circuit breaker coordination.	S. Sivanagaraju and V. Sankar	Power Point	M1
28	**Applications of Capacitors to distribution systems:** Effect of series and shunt capacitors - Power factor correction	Turan Gonen	Power Point	M1
29-30	Problems	S. Sivanagaraju and V. Sankar	Tutorial	M3
31	economic justification for capacitors – a computerized method to determine the economic power factor - Procedure to determine the best and optimum capacitor location	Turan Gonen	Power Point	M1
32	**Distribution System Voltage Regulation:** Basic definitions - Quality of service - voltage control	Turan Gonen	Power Point	M1
33	Methods of voltage control, line drop compensation	Turan Gonen	Power Point	M1
34	**Distribution Automation:** Introduction – description – benefits	S. Sivanagaraju and V. Sankar	Power Point	M1
35	distribution automation components – distribution SCADA – distribution management system – functions of DMS-	S. Sivanagaraju and V. Sankar	Power Point	M1
36	Distribution management- Data dependency and sustainability	S. Sivanagaraju and V. Sankar	Power Point	M1
37	Functional requirements of DSCADA – DA/Management functionalities	S. Sivanagaraju and V. Sankar	Power Point	M1
38	Mapping of Function Vs Benefit	S. Sivanagaraju and V. Sankar	Power Point	M1
39	**Communication systems for DA:** Introduction	S. Sivanagaraju and V. Sankar	Power Point	M1
40	Communication requirements – Communication Systems used	S. Sivanagaraju and V. Sankar	Power Point	M1

Turan Gonen —Electric Power Distribution Engineering, 3rd Edition, CRC Press-2014

S. Sivanagaraju and V. Sankar, —Electrical distribution and automation, Dhanpat rai & Co – 2006.

Content Delivery Methods:

M1: Lecture interspersed with discussion
M2: Guest Lecture
M3: Tutorial
M4: Field Visits
M5: Experimental (Models, Virtual, Simulation)
M6: Flipped class room

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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

1. TITLE OF THE COURSE WITH CODE NUMBER:

Course Code	:	**PS511**
Title of the Course	**:**	AI Techniques for PS applications
Year & semester	**:**	M.Tech. First Year &Second Sem
Academic Year	**:**	2018-19
Periods per Week	**:**	4 P theory / week
Nature of the Course	**:**	Engineering Core
Name of Instructor	**:**	Dr. A.RamaKoteswaraRao
Designation	**:**	Associate Professor
E-mail	**:**	ramnitkkr@gmail.com,

Course Objectives:

Main objectives of this course are

1. To provide students with strong foundation on the classification of architectures of artificial neural networks.
2. To enable the students to have a fair knowledge about genetic algorithm.
3. To enable the students to have a fair knowledge about Fuzzy logic and fuzzy logic controllers.

Course Learning outcomes:

Upon completion of the course, student will be able to:

CO1: Get an idea of artificial neural networks and algorithms.
CO2: To gain the knowledge of production of best generations by using different genetic operators.
CO3: Get the complete idea of fuzzy logic controllers.
CO4: Get the idea of fault diagnosis and load forecasting.
CO5: Get the knowledge of applications of fuzzy logic.

Content Delivery Methods:

M1: Lecture interspersed with discussion M2: Guest Lecture
M3: Tutorial M4: Field Visits
M5: Experimental (Models, Virtual, simulation) M6: Group Assignments, Other Pedagogical tools

LESSON PLAN

	Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
UNIT – I	1.	Introduction to Neural Networks	Rajasekharan and Pai	Black Board	M1
	2.	Humans and Computers	Rajasekharan and Pai	Black Board	M1
	3.	Organization of the Brain	Chennakesava R Alavala	Black Board	M1
	4.	Biological Neuron	Rajasekharan and Pai	Black Board	M1
	5.	Biological and Artificial Neuron Models	Chennakesava R Alavala	Black Board	M1
	6.	neural network architectures	Rajasekharan and Pai	Black Board	M1
	7.	Knowledge representation	Rajasekharan and Pai	Black Board	M1
	8.	learning process-learning tasks	Rajasekharan and Pai	Black Board	M1
	9.	Feed Forward Neural Networks	Rajasekharan and Pai	Black Board	M1
	10.	Perceptron Models: Discrete, Continuous and Multi-Category	Chennakesava R Alavala	Black Board	M1
	11.	Training Algorithms: Discrete and Continuous Perceptron Networks	Rajasekharan and Pai	Black Board	M1
	12.	Perception Convergence theorem	Chennakesava R Alavala	Black Board	M1
	13.	Limitations of the Perceptron Model, Applications	Rajasekharan and Pai	Black Board	M1

	Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
	14.	ANN paradigm-back propagation	Rajasekharan and Pai	Black Board	M1
	15.	RBF algorithms-Hope field networks	Rajasekharan and Pai	Black Board	M1
UNIT – II	16.	Genetic algorithms-introduction	Rajasekharan and Pai	Black Board	M1
	17.	Encoding-fitness function	Rajasekharan and Pai	Black Board	M1
	18.	Reproduction operators	Rajasekharan and Pai	Black Board	M1
	19.	Genetic modelling	Rajasekharan and Pai	Black Board	M1
	20.	Genetic operator-Selection	Rajasekharan and Pai	Black Board	M1
	21.	Genetic operator-Selection methods	Rajasekharan and Pai	Black Board	M1
	22.	Genetic operator-cross over	Rajasekharan and Pai	Black Board	M1
	23.	Genetic operator-mutation	Rajasekharan and Pai	Black Board	M1
	24.	Generational cycle	Rajasekharan and Pai	Black Board	M1
	25.	Convergence of genetic algorithm	Rajasekharan and Pai	Black Board	M1
UNIT – III	26.	Classical AND Fuzzy Sets	Rajasekharan and Pai	Black Board	M1
	27.	classical sets - properties	Rajasekharan and Pai	Black Board	M1

	Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
	28.	Operations and relations	Rajasekharan and Pai	Black Board	M1
	29.	Fuzzy sets	Rajasekharan and Pai	Black Board	M1
	30.	Membership, Uncertainty, Operations, properties	Chennakesava R Alavala	Black Board	M1
	31.	fuzzy relations, cardinalities	Rajasekharan and Pai	Black Board	M1
	32.	membership functions	Rajasekharan and Pai	Black Board	M1
	33.	Fuzzy Logic System Components Fuzzification	Chennakesava R Alavala	Black Board	M1
	34.	Membership value assignment	Rajasekharan and Pai	Black Board	M1
	35.	Development of rule base and decision making system	Rajasekharan and Pai	Black Board	M1
	36.	Defuzzification to crisp sets	Rajasekharan and Pai	Black Board	M1
	37.	Defuzzification methods	Chennakesava R Alavala	Black Board	M1
	38.	Defuzzification methods	Chennakesava R Alavala	Black Board	M1
	39.	Defuzzification methods	Chennakesava R Alavala	Black Board	M1
UNIT-IV	40.	Neural network applications	Rajasekharan and Pai	Black Board	M1
	41.	Process identification	Rajasekharan and Pai	Black Board	M1
	42.	Problem Formulation	Rajasekharan and Pai	Black Board	M1
	43.	Problem Formulation	Rajasekharan and Pai	Black Board	M1
	44.	Function Approximation	Rajasekharan and Pai	Black Board	M1
	45.	control and Process Monitoring	Rajasekharan and Pai	Black Board	M1
	46.	fault diagnosis	Rajasekharan and Pai	Black Board	M1
	47.	load forecasting	Rajasekharan and Pai	Black Board	M1
	48.	Neural Network Toolbox	Rajasekharan and Pai	Black Board	M1

	Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
	49.	Neural Network Toolbox	Rajasekharan and Pai	Black Board	M1
	50.	Neural Network Toolbox	Rajasekharan and Pai	Black Board	M1
	51.	Neural Network Toolbox	Rajasekharan and Pai	Black Board	M1
UNIT – V	52.	Fuzzy logic applications	Rajasekharan and Pai	Black Board	M1
	53.	Fuzzy logic control	Rajasekharan and Pai	Black Board	M1
	54.	Problem Formulation	Rajasekharan and Pai	Black Board	M1
	55.	Problem Formulation	Rajasekharan and Pai	Black Board	M1
	56.	Fuzzy classification specific applications to power systems load frequency control	Rajasekharan and Pai	Black Board	M1
	57.	Fuzzy Application to fault diagnosis	Rajasekharan and Pai	Black Board	M1
	58.	Fuzzy logic toolbox	Rajasekharan and Pai	Black Board	M1
	59.	Fuzzy logic toolbox	Rajasekharan and Pai	Black Board	M1
	60.	Fuzzy logic toolbox	Rajasekharan and Pai	Black Board	M1

Ps 573 Advanced Microprocessors & Microcontrollers A-Y 2018-19

M.Tech

Lecture No.	Learning Objectives	Topics to be covered	Chapter in the textbook/ reference	**Teaching aid**	**Delivery methods**
1.	to know the Introduction to microcomputers and microprocessors	Introduction to microcomputers and microprocessors	D.V.HALL	Black Board	M1
2.	to know the Architecture of 8086 family	Architecture of 8086 family	A.K.RAY& D.V.HALL	Black Board	M1
3.	to know the Architecture of 8086 family	Architecture of 8086 family	A.K.RAY& D.V.HALL	Black Board	M1
4.	will be able to use Addressing modes	Addressing modes	A.K.RAY	Black Board	M1, M3
5.	will be able to use Addressing modes	Addressing modes	A.K.RAY	Black Board	M1, M3
6.	will be able to use Instruction description	Instruction description	D.V.HALL	Black Board	M1, M3
7.	will be able to use Instruction description	Instruction description	D.V.HALL	Black Board	M1, M3
8.	will be able to use Instruction description	Instruction description	D.V.HALL	Black Board	M1, M3
9.	will be able to use Instruction description	Instruction description	D.V.HALL	Black Board	M1, M3
10.	will be able to use Assembler directives of 8086 microprocessors	Assembler directives of 8086 microprocessors	A.K.RAY & Inter net	Black Board	M1, M3
11.	to use Assembler directives of 8086 microprocessors	Assembler directives of 8086 microprocessors	A.K.RAY & Inter net	Black Board	M1, M3

12.	to use Assembler directives of 8086 microprocessors	Assembler directives of 8086 microprocessors	A.K.RAY & Inter net	Black Board	M1, M3
13.	to debug their assembly language programs.	programs for use with an assembler	A.K.RAY	Black Board	M3
14.	to use Writing and using procedures and assembler macros	Writing and using procedures and assembler macros	A.K.RAY	Black Board	M1
15.	to know the Architecture of 80386 family	Architectural features of 80386	A.K.RAY	Black Board	M1
16.	to know the Architecture of 80386 family	Architectural features of 80386	A.K.RAY	Black Board	M1
17.	to know the Architecture of 80486 family	Architectural features of 80486	A.K.RAY	Black Board	M1
18.	to know the Architecture of Pentium processor	Architectural features of Pentium processor	A.K.RAY	Black Board	M1
19.	to know the Architecture of Pentium pro processor	Introduction to Pentium pro processor	A.K.RAY	Black Board	M1
20.	To understand Minimum mode system	Minimum mode system	A.K.RAY	Black Board	M1
21.	To understand Addressing memory and ports in microcomputer system	Addressing memory and ports in microcomputer system	D.V.HALL	Black Board	M1
22.	To understand 8086 interrupts and interrupt responses	8086 interrupts and interrupt responses	D.V.HALL	Black Board	M1
23.	To understand 8086 interrupts and interrupt responses	8086 interrupts and interrupt responses	D.V.HALL	Black Board	M1
24.	To understand 8086 interrupts and interrupt responses	8086 interrupts and interrupt responses	D.V.HALL	Black Board	M1

25.	To understand 8086 interrupts and interrupt responses	8086 interrupts and interrupt responses	D.V.HALL	Black Board	M1
26.	To understand Programmable parallel ports	Programmable parallel ports	D.V.HALL	Black Board	M1
27.	To understand Handshake IO, interfacing	Handshake IO, interfacing	D.V.HALL	Black Board	M1
28.	To understand Handshake IO, interfacing	Handshake IO, interfacing	D.V.HALL	Black Board	M1
29.	To understand Microprocessor to keyboards	Microprocessor to keyboards	D.V.HALL	Black Board	M1
30.	To understand DAC principle of operation	DAC principle of operation	A.K.RAY& D.V.HALL	Black Board	M1
31.	To understand pecifications and different types of DACs andADCs interfacing	specifications and different types of DACs and interfacing	A.K.RAY& D.V.HALL	Black Board	M1
32.	To understand specifications and different types of ADCs and interfacing	specifications and different types of ADCs and interfacing	A.K.RAY& D.V.HALL	Black Board	M1, M3
33.	To understand Programmable peripheral devices 8254	Programmable peripheral devices 8254	A.K.RAY	Black Board	M1
34.	To understand Programmable peripheral devices 8254	Programmable peripheral devices 8254	A.K.RAY	Black Board	M1

35.	To understand Programmable peripheral devices 8259	Programmable peripheral devices 8259	A.K.RAY	Black Board	M1
36.	To understand Programmable peripheral devices 8259	Programmable peripheral devices 8259	A.K.RAY	Black Board	M1
37.	To understand Programmable peripheral devices 8251	Programmable peripheral devices 8251	A.K.RAY	Black Board	M1
38.	To understand DMA data transfer To understand RS232 communication	DMA data transfer	D.V.HALL	Black Board	M1
39.	To understand standard and maximum mode of 8086 operation	standard and maximum mode of 8086 operation	A.K.RAY	Black Board	M1
40.	TUTORIAL	TUTORIAL		Black Board	M1
41.	will be able to learn Introduction to microcontrollers, comparing microprocessors and microcontrollers	Introduction to microcontrollers, comparing microprocessors and microcontrollers	Ayala&mazidi	Black Board	M1
42.	will be able to learn Architecture of 8051microcontroller, hardware ,input pins, output pins ports and external	Architecture of 8051microcontroller, hardware ,input pins, output pins ports and external	Ayala&mazidi	Black Board	M1

	memory, counters and timers	memory, counters and timers			
43.	will be able to learn pin configuration of 8051microcontroller, hardware ,input pins, output pins , ports and external memory, counters and timers	pin configuration of 8051microcontroller, hardware ,input pins, output pins , ports and external memory, counters and timers	Ayala&mazidi	Black Board	M1
44.	will be able to learn Addressing modes of 8051 microcontroller, Instruction set of 8051 microcontroller	Addressing modes of 8051 microcontroller, Instruction set of 8051 microcontroller	Ayala&mazidi	Black Board	M1
45.	will be able to learn Serial data input and output and interrupts	Serial data input and output and interrupts	Ayala&mazidi	Black Board	M1
46.	will be able to learn Instruction set of 8051 microcontroller 56.Tutorial	Instruction set of 8051 microcontroller 56.Tutorial	Ayala&mazidi	Black Board	M1
47.	will be able to learn simple programs using 8051 microcontroller	simple programs using 8051 microcontroller	Ayala&mazidi	Black Board	M1
48.	will be able to learn Interfacing a stepper motor Interfacing a temperature sensor	Interfacing a stepper motor Interfacing a temperature sensor	Ayala&mazidi	Black Board	M1
49.	Interfacing a ADC Interfacing a DAC.	Interfacing a ADC Interfacing a DAC.	Ayala&mazidi	Black Board	M1

R.V.R. & J.C.COLLEGE OF ENGINEERING (Autonomous)
Chandramoulipuram, Chowdavaram, GUNTUR – 522 019.
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING
PS 522 POWER SYSTEM STABILITY

LESSON PLAN (AY 2018-19)

Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
1	Introduction to Power system stability, Objectives & Outcomes	Prabha kundur	Power Point	M1
2	Stability classification, Definitions, Stability Limit,	Prabha kundur	Power Point	M1
3	Derivation On Power Angle Equation	Prabha kundur	Power Point	M1
4	Problem On Steady State Stability Limit	Prabha kundur	Black Board	M3
5-6	Tutorial Problems	Prabha kundur	Black Board	M3
7	Stability Limit Evaluation	Prabha kundur	Power Point	M1
8	Steady State Stability Limit-analytical Method	Prabha kundur	Power Point	M1
9	Analytical Method	Prabha kundur	Power Point	M1
10	Problem On Analytical Method	Prabha kundur	Black Board	M3
11-12	Tutorial Class	Prabha kundur	Black Board	M3
13	Sending End Power Circle Diagram, Analytical Method	Prabha kundur	Power Point	M1
14	Graphical Method Of Steady State Stability Limit	Prabha kundur	Power Point	M1
15	Problem On Graphical Method	Prabha kundur	Power Point	M1
16	Drawing Receiving Power Circle And Determination Of Phase modifier Capacity	Prabha kundur	Power Point	M1
17	Voltage Stability, Voltage Collapse, Prevention Of Voltage Collapse	Prabha kundur	Power Point	M1
18	Voltage Stability Analysis Using Pv Curves	Prabha kundur	Power Point	M1
19	Voltage Stability Assessment Using Qv Curves	Prabha kundur	Power Point	M1
20	Swing Equation Derivation & Relation Between M And H	Prabha kundur	Power Point	M1
21	Problems On Swing Equation	Prabha kundur	Black Board	M3
22	Problem On Swing Equation	Prabha kundur	Black Board	M3
23	Equal Area Criterion Concept	Prabha kundur	Power Point	M1
24	Sudden Change In Mechanical Power Input (equal Area Criterion Application)	Prabha kundur	Power Point	M1
25	Sudden Loss Of Transmission Line (e.a.c)	Prabha kundur	Power Point	M1
26	Problems On Sudden Change & Loss Of T.line	Prabha kundur	Black Board	M3
27	Short Circuit At One End Of The Transmission Line	Prabha kundur	Power Point	M1
28	Short Circuit Away From Line Ends	Prabha kundur	Power Point	M1
29-31	Problems On Calculating Critical Clearing Angle	Prabha kundur	Black Board	M3
33	Line Reclosure Using Equal Area Criterion	Prabha kundur	Power Point	M1
33	Problem On Stability Assessment Using Equal Area Criterion	Prabha kundur	Black Board	M1
34	Point By Point Method Of Solving Swing Equation	Prabha kundur	Power Point	M1
35	Sustained Fault Case Using Point By Point Method Of Solving Swing Equation	Prabha kundur	Power Point	M1
36-38	Problems On Point By Point Method	Prabha kundur	Black Board	M3
39	Transient Stability Assessment Using Modified Euler's Method	Prabha kundur	Power Point	M1

Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
	And Gauss Seidel Method			
40	Effect On Stability Due To Losses, Governor Action, inertia, saturation.	Kimbark E.W. Vol-III	Power Point	M1
41	Effect On Stability Due To SCR, saliency, damper windings, methods of grounding.	Kimbark E.W. Vol-III	Power Point	M1
42	Methods Of Improving Stability Due To high speed fault clearing, reduction of transmission system reactance, regulated shunt compensation.	Prabha kundur	Power Point	M1
43	Methods Of Improving Stability Due To dynamic breaking, reactor switching, single pole switching, steam turbine fast valving.	Prabha kundur	Power Point	M1
44	Methods Of Improving Stability Due To generator tripping, load shedding, High speed excitation systems.	Prabha kundur	Power Point	M1
45	Methods Of Improving Stability Due To HVDC transmission links, SVC.	Prabha kundur	Power Point	M1

1. Prabha Kundur., "Power System Stability and Control" Tata McGraw Hill

2. Kimbark E.W., "Power System Stability and Control – Vol.III, Synchronous Machines", John Wiley & Sons.

Content Delivery Methods:

M1: Lecture interspersed with discussion
M2: Guest Lecture
M3: Tutorial
M4: Field Visits
M5: Experimental (Models, Virtual, Simulation)
M6: Flipped class room

LESSON PLAN

Subject Code & Name: EE405 (R16) INDUSTRIAL MANAGEMENT

S. No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)
				L	T	
1	Introduction With Students	To have a familiarization with students	BB	1		1
2	Syllabus, Course Objectives and Course Outcomes	To understand the overview of syllabus	BB	1		2
3	**UNIT – I** Management	To understand basic concepts of Management	BB	1		3
4	Management Features	To evaluate the features of Management	BB	1		4
5	Management Functions	To understand basic functions of Management	BB	1		5
6	Scientific Management	To evaluate basic concepts of Scientific Management	BB	2		7
7	Administrative Principles	To understand basic administrative principles of Management	BB	2		9
8	Business	To be familiar with basic business concepts	BB	1		10
9	Sole Proprietorship	To understand concepts of Sole Proprietorship	BB	1		11
10	Partnership	To familiarize with Partnership elements	BB	2		13
11	Joint Stock Company	To understand basic concepts of Joint Stock Company	BB	2		15
12	Public Limited Versus Private Limited Companies	To evaluate differences between Public and Private companies	BB	1		16
13	**UNIT – II** Interest, Simple Interest, Compound Interest	To understand basic concepts of Interest	BB	2		18
14	Annuity Method	To understand methods of Cash Flow	BB	1		19
15	Present Worth Method	To understand methods of Cash Flow	BB	1		20

16	Future Worth Method	To understand methods of Cash Flow	BB	1		21
17	Depreciation Methods	To Evaluate methods of Depreciation	BB	1		22
18	Depreciation Methods	To Evaluate methods of Depreciation	BB	1		23
19	Quiz I	To analyse students' knowledge in I, II Units	BB	1		24
20	**UNIT – III** Human Resource Management	To understand concepts of Human Resource Management	BB	1		25
21	Job Analysis	To evaluate concepts of Job analysis	BB	1		26
22	Human Resource Planning	To understand concepts of Human Resource Planning	BB	1		27
23	Recruitment	To understand sources of Recruitment	BB	2		29
24	Selection, Placement, Induction	To understand process of Selection, Placement and Induction	BB	1		30
25	Training And Development	To evaluate methods of Training and Development	BB	1		31
26	Performance Appraisal	To understand methods of Performance appraisal	BB	2		33
27	Job Evaluation	To evaluate the nature of Job Evaluation	BB	1		34
28	Career Planning And Development	To understand process for Career Planning and Career Development	BB	1		35
29	Stress Management	To identify different types of Stress and measures to remove it	BB	1		36
30	Stress Management	To identify different types of Stress and measures to remove it	BB	1		37
31	Motivation	To understand basic concepts of Motivation	BB	1		38
32	Motivation Theories	To evaluate the theories of Motivation	BB	1		39
33	Motivation Theories	To evaluate the theories of Motivation	BB	1		40

34	Leadership	To understand basic concepts of Leadership	BB	1		41
35	Leadership Styles	To evaluate the styles of Leadership	BB	1		42
36	Leadership Styles	To evaluate the styles of Leadership	BB	1		43
37	**UNIT – IV** Materials Management	To understand basic concepts of Materials Management	BB	1		44
38	Purchasing, Procurement, Vendor Rating	To evaluate the procedure for Purchasing, Procurement and Vendor Rating		1		45
39	Inventory Management	To understand basic concepts of Inventory Management	BB	1		46
40	Inventory Management Methods	To evaluate the methods of Inventory Management	BB	2		48
41	Marketing	To understand basic functions of Marketing Management	BB	1		49
42	Product Life Cycle	To evaluate the stages of Product Life Cycle	BB	2		51
43	Channels Of Distribution	To understand types of Channels of Distribution	BB	1		52
44	Channels Of Distribution	To understand types of Channels of Distribution	BB	1		53
45	Advertising	To evaluate the advantages and disadvantages of Advertising	BB	2		55
46	Sales Promotion	To analyze the methods of Sales Promotion	BB	2		57
47	Marketing Research	To understand types of Marketing Research	BB	2		59
48	Quiz II	To analyse students knowledge in III, IV Units	BB	1		60

Course Instructor

Signature of the HOD:

Dr. K. CHANDRA SEKHAR
Professor & HOD, EEE Dept.
R.V.R & J.C. College of Engg.
Chowdavaram, GUNTUR-522 019.

PT

ELECTRIC DRIVES (EE 406) –R16
LESSION PLAN

Lecture No.	Learning Objectives	Topics to be covered	Chapter in the textbook/ reference
1.	Introduction to the topics and chapters to be discussed in the course	Introduction to Electric drives	G.K. Dubey
2.	To discuss the importance and advantages of electric drive.	Advantages of electric drives, types of electric drives	G.K. Dubey
3.	To study the types of electric drives and its components	Components of electric drives, status of dc and ac drives	G.K. Dubey
4.	To study the speed torque conventions of electric drives	Fundamental torque equations, speed torque conventions	G.K. Dubey
5.	To study multi quadrant operation of drives	Multi quadrant operation of drives	G.K. Dubey
6.	To discuss the equivalent values of drive parameters & components of load torques	Equivalent values of drive parameters	G.K. Dubey
7.	To discuss the equivalent values of drive parameters & components of load torques	Components of load torques, Nature and classification of load torques	G.K. Dubey
8.	To solve problems of all the above analysis	Problems on above topic	G.K. Dubey
9.	To study the modes of operation of electric drives	Modes of operation of drive	G.K. Dubey
10.	To discuss the closed loop control of drives.	Speed control and drive classification	G.K. Dubey
11.	To discuss the closed loop control of drives.	Closed loop control of drives	G.K. Dubey
12.	To solve problems of all the above analysis	Problems on above topic	G.K. Dubey
13.	To study the performance of dc motor drives	Introduction to dc motors and their performance	G.K. Dubey
14.	To discuss the starting of dc motor drives.	Starting methods of dc motor drives	G.K. Dubey
15.	To discuss braking methods of dc motor drives.	Braking methods of dc motor drives	G.K. Dubey
16.	To study the speed control methods of dc motor drives	Speed control methods of dc motor drives	G.K. Dubey
17.	To solve problems of all the above analysis	Problems on above topic	G.K. Dubey
18.	To solve problems of all the above analysis	Problems on above topic	G.K. Dubey
19.	To discuss the 1- phase fully and half controlled rectifier control of separately excited dc motor.	Single phase fully and half controlled rectifier control of separately excited dc motor	G.K. Dubey
20.	To discuss the 3-phase fully and half controlled rectifier control of separately excited dc motor.	Three phase fully and half controlled rectifier control of separately excited dc motor	G.K. Dubey
21.	To discuss the Dual converter control of separately excited dc motor.	Dual converter control of separately excited dc motor	G.K. Dubey
22.	To solve problems of all the above analysis	Problems on above topic	G.K. Dubey
23.	To solve problems of all the above analysis	Problems on above topic	G.K. Dubey
24.	To discuss the comparison of conventional and static ward-leonard schemes.	Comparison of conventional and static ward Ward-Leonard schemes	G.K. Dubey

25.	To study the rectifier control control of dc series motor.	Rectifier control of dc series motor	G.K. Dubey
26.	To solve problems of all the above analysis	Problems on above topic	G.K. Dubey
27.	To study the chopper control of separately excited dc motors	Chopper control of separately excited dc motors	G.K. Dubey
28.	To study the Chopper control of dc series motor.	Chopper control of series motor	G.K. Dubey
29.	To solve problems of all the above analysis	Problems on above topic	G.K. Dubey
30.	To solve problems of all the above analysis	Problems on above topic	G.K. Dubey
31.	To study the performance of three phase induction motor	Introduction to three phase induction motor	G.K. Dubey
32.	To study the operation of 3-phase induction motor drives with unbalanced source voltages	Operation with unbalanced source voltages and single phasing	G.K. Dubey
33.	To study the operation of 3-phase induction motor drives with unbalanced rotor impedances	Operation with unbalanced rotor impedances	G.K. Dubey
34.	To discuss the starting methods of induction motor drives.	Starting methods of induction motor	G.K. Dubey
35.	To discuss the braking methods of induction motor drives.	Braking methods of induction motor	G.K. Dubey
36.	To solve problems of all the above analysis	Problems on above topic	G.K. Dubey
37.	To discuss the Transient analysis of induction motor drives.	Transient analysis of induction motor	G.K. Dubey
38.	To discuss the variable frequency control from voltage and current sources	Variable frequency control from voltage and current sources	G.K. Dubey
39.	To understand the eddy current drives.	Eddy current drives, rotor resistance control of induction motor	G.K. Dubey
40.	To study the rotor resistance control and slip power recovery of induction motor drives	Slip power recovery, variable speed constant frequency generation	G.K. Dubey
41.	To solve problems of all the above analysis	Problems on above topic	G.K. Dubey
42.	To study the performance of synchronous motors	Introduction to synchronous motors	G.K. Dubey
43.	To study the operation of synchronous variable speed drives.	Synchronous variable speed drives	G.K. Dubey
44.	To discuss the braking of synchronous motor.	Braking of synchronous motor	G.K. Dubey
45.	To solve problems of all the above analysis	Problems on above topic	G.K. Dubey
46.	To understand the switched reluctance motor	Switched reluctance motor drives	G.K. Dubey
47.	To understand the switched brush less dc motors.	Brush less dc motor drives	G.K. Dubey
48.	To study the stepper motors	Stepper motor	G.K. Dubey
49.	To study the variable reluctance motor.	Variable reluctance motor	G.K. Dubey
50.	To solve problems of all the above analysis	Problems on above topic	G.K. Dubey

COURSE INSTRUCTOR

HOD/EEE

Dr. K. CHANDRA SEKHAR
Professor & HOD, EEE Dept.
R.V.R & J.C. College of Engg.
Chowdavaram, GUNTUR-522 019

Subject Code & Name: EE 111, Mathematics – 1

Lesson plan

S. No.	Topics to be covered	No. of Periods	Learning Out Comes	Delivery Methods Black Board/ LCD
1.	Characteristic equation	1	1	Black Board
2.	Eigen values,eigen vectors	1	1	
3.	Problems	1	1	
4.	Cayley Hamilton theorem	1	1	
5.	Problems	1	1	
6.	diagonalisation	1	1	
7.	Problems	1	1	
8	Canonical form	1	1	
9.	Sequences,series problems	1	1	
10.	Problems	1	1	
11.	Tests of convergence	1	1	
12.	problems	1	1	
13.	Fourier series	1	1	
14.	Problems	1	1	
15.	Problems	1	1	
16.	Evolutes and involutes	1	2	
17.	Problems	1	2	
18.	Evaluation of improper integrals	1	2	
19.	Problems	1	2	Black Board
20.	Integrals without infinite limits of integration	1	2	
21.	Mulitple integrals,double integrals	1	2	
22.	problems	1	2	
23.	Change of order	1	2	
24.	Problems	1	2	
25.	Change of variables,areas	1	2	
26.	problems	1	2	
27.	Triple integrals,problems	1	2	
28.	Volumes , problems	1	2	
29	Beta and gamma functions	1	2	
30.	Problems	1	2	
31.	Vector calculus introduction	1	3	
32.	Gradient,divergence and curl	1	3	
33.	Problems	1	3	

34.	Identities,problems	1	3	
35.	problems	1	3	
36.	problems	1	3	
37.	Line integrals	1	3	
38.	Problems,Green's theorem	1	3	
39.	Surface integrals,problems	1	3	
40.	Stoke's theorem,problems	1	3	
41.	Gauss divergence theorem	1	3	
42.	problems	1	3	
43.	Problems	1	3	
44.	Problems	1	3	
45.	Problems	1	3	
46.	Ordinary differential equations,linear and Bernoulli	1	4	
47.	Problems	1	4	
48.	Exact equations	1	4	
49.	problems	1	4	
50.	Problems	1	4	
51.	problems	1	4	Black Board
52.	Method of variation of parameters	1	4	
53.	Problems	1	4	
54.	Cauchy and Legendre equations	1	4	
55.	problems	1	4	
56.	Partial differential equaitons	1	4	
57.	Linear equations	1	4	
58.	Problems	1	4	
59.	Charpit's method	1	4	
60.	problems	1	4	

Signature of Course Instructor

Signature of the HOD

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EC/EE/ME 112 & CS/CE/IT 122 - ENGINEERING CHEMISTRY
(R-18 Regulations)

LESSON PLAN AND DELIVERY

UNIT-I: Molecular structure, Intermolecular forces and Energy systems 15 Hrs.	**No of periods**
Salient Features of Valence Band Theory, Limitations	1
Crystal field theory-salient features,	1
Energy level diagrams-tetrahedral and octahedral complexes,	2
Crystal field stabilization energies, magnetic properties.	1
Inter molecular forces- ionic, dipolar, Vander Waal's interaction	1
Hydrogen bonding, critical Phenomena-Andrew's isotherms of CO_2,	2
Derivation of critical constants from Vander Waal's equation.	2
Brief introduction to Electro Chemistry, Electrode potential, electrochemical series, Nernst equation and its applications.	2
Batteries-Primary (Dry cell) and secondary (Lead acid),	1
Lithium battery (Li-MnO_2) advantages, Fuel cell (H_2-O_2 cell).	2
UNIT-II: Water Chemistry and Corrosion 15 Hrs	
Introduction to Water Chemistry-WHO standards	1
Municipal water treatment-Removal of suspended impurities-Sedimentation, Coagulation and Filtration.	2
Disinfection of water by chlorine, Break point chlorination, Dechlorination,	2
Purification by ion-exchange method and reverse osmosis.	2
Corrosion-Introduction, Electrochemical theory of corrosion,	1
Galvanic corrosion, differential aeration corrosion,	2
Factors-temperature, pH, overvoltage.	2
Cathodic protection by sacrificial anodic method and impressed current method.	1
Electroplating (Cu), Electrolessplating (Ni).	2
UNIT-III:Organic reactions and Polymers 15 Hrs.	
Types of organic reactions-Substitution (SN^1 and SN^2), Elimination (E1 and E2)	2
Addition-Markownikoff's rule and anti-Markownikoff's rule,	2
Cyclisation (Diel's Alder reaction), Synthesis of aspirin.	1
Polymers-Functionality, Degree of Polymerization,	1
Tacticity-Addition and condensation polymerization,	1
Relationship between Structure and Properties of polymers (Strength, Crystallinity, Elasticity, Plastic Deformation,	2

Glass transition temperature (T_g)), Factors affecting T_g. Conducting polymers: Introduction, Examples, General applications, Mechanism of conduction in polyacetylene.	2 2
UNIT-IV: Spectroscopic techniques and its applications 15 Hrs.	
Introduction to UV-VIS Spectroscopy, Derivation ofBeer-lamberts Law and Applications and limitations, colorimetric determination of Fe (III) UV-VIS spectroscopy – electronic transitions, shifts-blue and red, Block diagram - brief introduction of components, Applications – purity and differentiation of conjugated and non-conjugated dienes. ..... IR Spectroscopy–condition to be IR active, vibrational modes of–AB_2, Block diagram-brief introduction of components, IR spectrum of CO_2 and H_2O molecules, General applications. Fluorescence and its applications in medicine.	2 1 2 1 1 2 2 2 2

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EE 113 ENGLISH FOR COMMUNICATION(R-18)
LESSON PLAN (AY 2018-19)

Lecture No.	Learning Objectives	Topics to be covered	Chapter in the textbook / reference	Delivery methods
1	Introduction	The importance of English Language & Communication Skills (LSRW skills)	Syllabus book	Lecture
2	To enrich students' vocabulary.	Synonyms & Antonyms	Text books – 1 & 2	Lecture
3	Students understand how to form words and to make more meaning out of them.	Prefixes & Suffixes	Text book – 1	Lecture
4	Practice gives more familiarity with vocabulary.	Exercises on 'Synonyms"	Text book – 1	Lecture
5	Students get familiarized with more words.	Exercises on 'Synonyms" and 'Antonyms"	Text books – 1 & 2	Lecture
6	Familiarity with more unknown words helps students to speak and write in a better way.	'Synonyms" & 'One-word substitution'	Text book – 1	Lecture
7	To help develop students' more understanding of the topic.	'Synonyms" & 'Antonyms" exercises	Text book – 1 & model papers.	Lecture
8	It develops students' writing skills	Proposal Writing & One-word substitution.	Text book – 1	Lecture
9	Students focus on specific writing skills to succeed in their profession.	Proposal Writing	Text book – 1	Lecture
10	More practice with the topic & examples strengths the understanding skills of students	Proposal Writing – examples.	Text book – 1	Lecture
11	Students' speaking skills are assessed.	Activity: JAM	Text book – 1	Lecture
12	Students' writing skills and speaking skills are tested	Proposal Writing & JAM	Text book – 1	Lecture
13	Students' writing skills are assessed and errors are rectified.	Proposal Writing	Text book – 1	Lecture
14	Students' writing skills are focussed on and proper training is given.	E-mail Writing	Text book – 1	Lecture
15	Students learn to distinguish Formal E-mail writing from Informal E-mail writing	E-mail Writing	Text book – 1	Lecture
16	Students' presentation skills on E-mail writing are improved	E-mail Writing	Text book – 1	Lecture
17	Students' formal correspondence in their profession will be improved	E-mail Writing	Text book – 1	Lecture
18	Students understand the very basic form of every word and its corresponding relation with other words	Root Words	Text book – 1	Lecture
19	Students get exposed to various kinds of tenses and their structures.	Tenses	Text book – 1	Lecture
20	Students can form meaningful sentences understanding various structures of Tenses.	Tenses	Text book – 1	Lecture
21	Proper use of tense for writing sentences structurally and meaningfully strengthens one's writing skills.	Tenses	Text book – 1	Lecture
22	Students understand their mistakes committed in their presentation and that can be discussed only to avoid in their next presentation.	Mid-1 scripts distributed.	Text book – 1	Lecture

23	It helps students to present their thoughts clearly whether an idea is definite or indefinite	Articles	Text book – 1	Lecture
24	The usage of Articles in one's writing/speaking gives great clarity on one's thoughts	Articles	Text book – 1	Lecture
25	It allows a learner to closely understand the relation between subject and its verb .	Subject-Verb concord	Text book – 1	Lecture
26-29	Understanding a subject and its corresponding verb helps learner to form the right beginning of a sentence.	Subject-Verb concord	Text book – 1	Lecture
30	It helps learner to be alert and active in the class/at home to understand comprehensively what the content in the text is about	Note-Making and Note-Taking	Text book – 1	Lecture
31	Writing a paragraph helps learner to focus his/her attention on varieties of sentences with the use of various tenses in them.	Paragraph Writing	Text book – 1	Lecture
32	It teaches students how to synthesize ideas and thoughts in a coherent and logical order	Essay Writing	Text book – 1	Lecture
33	It helps learners to revise and recollect about what they have learnt so far.	Revision	Text book – 1	Lecture

Content Delivery Method: Lecture Method

Course Instructor

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Subject Code & Name: EE 111, Mathematics – I (R18)

LESSON PLAN

S. No.	Topics to be covered	No. of Periods	Learning Out Comes	Delivery Methods Black Board/ LCD
1.	Characteristic equation	1	1	Black Board
2.	Eigen values,eigen vectors	1	1	
3.	Problems	1	1	
4.	Cayley Hamilton theorem	1	1	
5.	Problems	1	1	
6.	diagonalisation	1	1	
7.	Problems	1	1	
8	Canonical form	1	1	
9.	Sequences,series problems	1	1	
10.	Problems	1	1	
11.	Tests of convergence	1	1	
12.	problems	1	1	
13.	Fourier series	1	1	
14.	Problems	1	1	
15.	Problems	1	1	
16.	Evolutes and involutes	1	2	
17.	Problems	1	2	
18.	Evaluation of improper integrals	1	2	
19.	Problems	1	2	Black Board
20.	Integrals without infinite limits of integration	1	2	
21.	Mulitple integrals,double integrals	1	2	
22.	problems	1	2	
23.	Change of order	1	2	
24.	Problems	1	2	
25.	Change of variables,areas	1	2	
26.	problems	1	2	
27.	Triple integrals,problems	1	2	
28.	Volumes , problems	1	2	
29	Beta and gamma functions	1	2	
30.	Problems	1	2	
31.	Vector calculus introduction	1	3	
32.	Gradient,divergence and curl	1	3	
33.	Problems	1	3	
34.	Identities,problems	1	3	
35.	problems	1	3	

36.	problems	1	3	
37.	Line integrals	1	3	
38.	Problems,Green's theorem	1	3	
39.	Surface integrals,problems	1	3	
40.	Stoke's theorem,problems	1	3	
41.	Gauss divergence theorem	1	3	
42.	problems	1	3	
43.	Problems	1	3	
44.	Problems	1	3	
45.	Problems	1	3	
46.	Ordinary differential equations,linear and Bernoulli	1	4	
47.	Problems	1	4	
48.	Exact equations	1	4	
49.	problems	1	4	
50.	Problems	1	4	
51.	problems	1	4	Black Board
52.	Method of variation of parameters	1	4	
53.	Problems	1	4	
54.	Cauchy and Legendre equations	1	4	
55.	problems	1	4	
56.	Partial differential equaitons	1	4	
57.	Linear equations	1	4	
58.	Problems	1	4	
59.	Charpit's method	1	4	
60.	problems	1	4	

COURSE INSTRUCTOR

HOD/EEE

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EE-122 ENGINEERING PHYSICS (R-18)
LESSON PLAN (AY 2018-19)

Lecture No.	Topics to be covered	Chapter in the textbook / reference	Delivery methods
1	Course Objectives And Course Outcomes	Syllabus Copy	M1
2	Fundamental Aspects Of Oscillations And Waves	Text book – 1	M1
3	Mechanical And Electrical Simple Harmonic Oscillators	Text book – 1	M1
4	Free, Damped, Forced, Resonant Oscillations, Quality Factor And Frictional Forces	Text book – 1	M1
5	Damped Harmonic Oscillator	Text book – 1	M1
6	Conditions For Under Damped, Over Damped And Critical Damped Oscillations & Energy and Power Dissipations In Damped Harmonic Oscillator	Text book – 1	M1
7	Methods Of Describing The Damping Of An Oscillator	Text book – 1	M1
8	Forced Oscillations	Text book – 1	M1
9	Analogy With Electrical Circuit	Text book – 1	M1
10	Comparison Of Impedance And Phase Difference Of Mechanical And Electrical Oscillators	Text book – 1	M1
11	Impedance (Mechanical And Electrical) And Differences Between Free And Forced Vibrations	Text book – 1	M1
12	Transverse Vibrations On A Stretched String	Text book – 1	M1
13	Overtones And Harmonics And Solving Of Problems	Text book – 1	M1
14	Wave Equation In One- And Three-Dimensions	Text book – 1	M1
15	Standing Waves And Their Eigen Frequencies	Text book – 1	M1
16	Reflection And Transmission Of Waves On A String At A Boundary	Text book – 1	M1
17	Velocity Of Longitudinal Waves	Text book – 1	M1
18	Matching Of Impedances	Text book – 1	M1
19	Basics Of Interference	Text book – 1	M1,
20	Cosine Law	Text book – 1	M1
21	Newton's Rings - Diameters Of Bright And Dark Rings	Text book – 1	M1
22	Fraunhofer Diffraction At Single Slit	Text book – 1	M1
23	Diffraction At 'n' Parallel Slits	Text book – 1	M1
24	Diffraction At Circular Aperture	Text book – 1	M1
25	Rayleigh's Criterion For The Limit Of Resolution	Text book – 1	M1
26	Michelson's Interferometer - Principle, Construction And Working	Text book – 1	M1
27	Lasers - Introduction And Einstein's Theory	Text book – 1 & Reference Book – 2	M1
28	Population Inversion , Pumping And Basic Components Of A Laser Oscillator	Text book – 1 & Reference Book –	M1

		2	
29	Helium-Neon Laser And Its Essential Components	Text book – 1 & Reference Book – 2	M1
30	Working Of Helium-Neon Laser With Energy Level Diagram	Text book – 1 & Reference Book – 2	M1
31	Laser Characteristics And Applications	Text book – 1 & Reference Book – 2	M1
32	Construction And Working Of Nd:YAG Laser	Text book – 1& Reference Book – 2	M1
33	Dual Nature Of Radiation, Heisenberg's Uncertainty Principle And Its Verification And Schroedinger's Time Dependent And Independent Wave Equations	Text book – 1	M1
34	Particle In A Potential Box	Text book – 1	M1
35	Calculation Of 'A' By Using Normalisation Condition And Conclusions	Text book – 1	M1
36	Linear Harmonic Oscillator	Text book – 1	M1
37	Quantum Tunnelling - Qualitative Analysis	Text book – 1	M1
38	Solving Of A Problem And Alpha-Decay - An Application For Tunnelling Effect	Text book – 1	M1
39	Scanning Tunnelling Microscope and Probability Interpretation	Text book – 1	M1
40	Failures Of Classical Free Electron Theory And Quantum Free Electron Theory (Qualitative Treatment)	Text book – 1	M1
41	Kronig-Penney Model	Text book – 1	M1
42	Brillouin Zones, Effective Mass Of An Electron, Fermi-Dirac Distribution Function And Fermi Level In Semiconductors	Text book – 1& Reference Book – 1	M1
43	Density Of States And Calculation Of Density Of Electrons	Text book – 1& Reference Book – 1	M1
44	Calculation Of Density Of Holes And Expression For Intrinsic Carrier Concentration	Text book – 1& Reference Book – 1	M1
45	Variation Of Fermi Level With Concentration And Temperature In Extrinsic Semiconductors And Drift And Diffusion Currents	Text book – 1& Reference Book – 1	M1
46	PN-Junction And Expression For Internal Potential Barrier and IV-Characteristics	Text book – 1& Reference Book – 1	M1
47	Brief Review Of The Syllabus	Text book – 1& Reference Books–1 and 2	M1

Content Delivery Method:

M1: Lecture interspersed with discussion

Course Instructor

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EE123:Programming for problem solving(R18)

LESSON PLAN & DELIVERY:

UNIT NO.	Topics to be covered	Methodology	Proposed no. of periods to be utilized
Unit – I	Introduction: Computer Fundamentals: Basic computer block diagram & it's Components. Hardware / Software	Lecture Presentation	3
	Algorithm, characteristics of an algorithm, Examples.	Lecture Presentation	2
	Flowchart, symbols used in flowchart. Examples.	Lecture Presentation	2
	Short history of C, Basic structure of C, simple 'C' program, C language features.	Lecture Presentation	1
	C-Tokens: C-character set, different types of tokens.	Lecture Presentation	1
	Rules to declare variables, keywords. Data types and sizes, Type qualifiers.	Lecture Presentation	2
	Constants and their forms of representation. Declaration and initialization of variables.	Lecture Presentation	2
	Operators and Expressions: Arithmetic, Relational, Logical, Assignment, Conditional, increment, decrement, Bitwise and other operators with Example programs	Lecture Presentation	3
	Type-conversion rules, Coercion, Statements, Preprocessor directives; I/O functions and other library functions.	Lecture Presentation	2
Unit – II	Conditional Statements: Blocks, if-else, else-if, nested if-else statements, else-if ladder, Switch statements.	Lecture Presentation	3
	C programs on Conditional Statements, C program on computation of Income-tax, C program on Computation of Electricity bill.	Lecture Presentation	3
	Iterative Statements: Loop, Repetition Statement, Types of Iterative Statements. While loop, programs on while loop.	Lecture Presentation	3
	Do-while loop, programs on do-while loop, for loop, programs on for	Lecture	4

	loop, break, continue and programs on break and continue statements.	Presentation	
	Arrays: Single and multidimensional Arrays, Character array as a string. String functions, Programs using arrays and string manipulation.	Presentation Demonstration	7
Unit – III	Functions: What is a function, need of functions, types of functions, function definition, function prototype, Types of user-defined functions, programs on user-defined functions, Parameter passing mechanisms, recursion, iteration Vs recursion, types of recursion, Simple recursive and non-recursive programs.	Presentation Demonstration	6
	Scope & Extent: Define scope & extent, different storage classes, scope rules for storage classes, Multi-file compilation.	Presentation Demonstration	3
Unit – IV	Structures: Declaring and using structures, operations on structures, structures and arrays, array of structures, structure within structure, user defined data types, pointers to structures. Programs on operations of complex numbers, rational numbers.	Presentation Demonstration	9
	Self-referential structures, define union, union Vs structure.	Presentation Demonstration	2
	Pointers: Pointers declarations, Pointer expressions, Pointer parameters to functions. Pointers, Pointers and arrays, Pointer arithmetic, character array of pointers.	Presentation Demonstration	4
	Dynamic memory allocation, DMA functions, array of pointers, pointer to an array, example programs, programs on insertion sort, bubble sort, linear search, binary search.	Presentation Demonstration	6
	Files: What is a file, modes of file, Sequential file- handling functions, Random-access file-handling functions, file error handling-functions, Programs using file functions, Command-line arguments, file copy using Command-line arguments.	Presentation Demonstration	7

COURSE INSTRUCTOR

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EE124 Electrical circuits(R18)

Content Delivery Methods:

M1: Lecture interspersed with discussion
M2: Guest Lecture
M3: Tutorial
M4: Field Visits
M5: Experimental (Models, Virtual, simulation)
M6: Group Assignments

LESSON PLAN

Lecture No.	Learning Objectives	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
1	Introduction to the topics and chapters to be discussed in the course	Basic definition of the unit of Charge, Voltage, Current, Power and Energy	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
2	To narrate the detailed classification of elements and sources with their characteristics.	Circuit concept. Active and Passive circuit elements; Ideal, Practical	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
3	To narrate the detailed classification of elements and sources with their characteristics.	Dependent sources and their V-I characteristics.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
4	To Study voltage and current division of the elements	Source transformation, Voltage and Current division	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
5	To Study V-I characteristics	V-I characteristics of Passive elements.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
6	To Study series & parallel elements	Series / parallel combination.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
7	To Study the star-delta transformation	Star Delta transformation	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
8	To Study the star-delta transformation	Star Delta transformation	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
9	To Obtain the expressions for energy stored in inductors and capacitors	Energy stored in Inductors and Capacitors	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
10	To Define Kirchhoff's voltage and current law and its application to circuits	Kirchhoff's Voltage law and Kirchhoff's Current law.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
11	To Define Kirchhoff's voltage and current law and its application to circuits	Kirchhoff's Voltage law and Kirchhoff's Current law.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
12	To understand Mesh Analysis	Mesh analysis, problems	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1, M3
13	To understand Super mesh Analysis	Mesh and Nodal Analysis,problems	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1, M3
14	To understand Nodal Analysis	Mesh and Nodal Analysis,problems	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1, M3
15	To understand Super nodal Analysis	Mesh and Nodal Analysis,problems	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1, M3
16	To Define Instantaneous, Peak, Average and RMS values of various waveforms and Crest factor, Form factor	Instantaneous, Peak, Average and RMS values of various waveforms; Crest factor, Form factor	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1

	of different waveforms.				
17	To Define Instantaneous, Peak, Average and RMS values of various waveforms and Crest factor, Form factor of different waveforms.	Instantaneous, Peak, Average and RMS values of various waveforms; Crest factor, Form factor	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
18	To Describe the concept of phase and phase difference	Concept of phase and phase difference in sinusoidal waveforms	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
19	To Explain the Phase relation between voltage and current in pure resistor, Inductor and capacitor	Phase relation in pure resistor, Inductor and capacitor;	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
20	To Explain the Phase relation between voltage and current in pure resistor, Inductor and capacitor	Phase relation in pure resistor, Inductor and capacitor;	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
21	To Explain the Phase relation between voltage and current in pure resistor, Inductor and capacitor	Phase relation in pure resistor, Inductor and capacitor;	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
22	To Develop the Impedance diagram, phasor diagram	Impedance diagram, phasor diagram for series circuits.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
23	To Develop the Impedance diagram, phasor diagram	Impedance diagram, phasor diagram for series circuits.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
24	To Develop the Impedance diagram, phasor diagram	Impedance diagram, phasor diagram for parallel circuits.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
25	To Develop the Impedance diagram, phasor diagram	Impedance diagram, phasor diagram for parallel circuits.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
26	To calculate active, reactive power and complex powers.	Calculation of active, reactive power and complex powers.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
27	To calculate active, reactive power and complex powers.	Calculation of active, reactive power and complex powers.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
28	To calculate active, reactive power and complex powers.	Calculation of active, reactive power and complex powers.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
29	To calculate active, reactive power and complex powers.	Calculation of active, reactive power and complex powers.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
30	To calculate active, reactive power and complex powers.	Calculation of active, reactive power and complex powers. power factor.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
31	To Define Network theorems	Superposition theorem	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
32	To Define Network theorems	Superposition theorem	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
33	To Define Network theorems	Thevenin's theorem	William H. Hayt,	Black Board	M1

			Jack E. Kemmerly and Steven M. Durbin		
34	To Define Network theorems	Thevenin's theorem	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
35	To Define Network theorems	Norton's theorem	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
36	To Define Network theorems	Norton's theorem	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
37	To Define Network theorems	Maximum power transfer theorem	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
38	To Define Network theorems	Reciprocity, Compensation theorems, Tellegan's and Millman's theorems	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
39	To Define Network theorems	Application of theorems to AC circuits	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
40	To Describe the concept of series and parallel resonance	Series resonance, resonant frequency, Impedance and phase angle, voltages and currents, Q factor, magnification	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
41	To Describe the concept of series and parallel resonance	Series resonance, resonant frequency, Impedance and phase angle, voltages and currents, Q factor, magnification	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
42	To Describe the concept of series and parallel resonance	Series resonance, resonant frequency, Impedance and phase angle, voltages and currents, Q factor, magnification	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
43	To State the bandwidth, resonant frequency and Q factor and its formulae application to circuits	Bandwidth and Q factor and its effect on bandwidth, magnification	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
44	To Discuss about magnification of series and parallel resonance circuits	parallel resonance, resonant frequency, variation of impedance with frequency , Q factor, magnification	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
45	To draw reactance curves in parallel resonance.	Reactance curves in parallel resonance	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
46	To Study the Steady state and transient response, DC and Sinusoidal response of R-L, R-C and R-L-C circuits.	Steady state and transient response to R-L circuit.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
47	To Study the Steady state and transient response, DC and Sinusoidal response of R-L, R-C and R-L-C circuits.	Steady state and transient response to R-C circuit.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
48	To Study the Steady state and transient response, DC and Sinusoidal response of R-L, R-C and R-L-C circuits.	Steady state and transient response to R-L-C circuit.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
49	To Study the Steady state and transient response, DC and Sinusoidal response of R-L, R-C and R-L-C circuits.	Steady state and transient response to parallel R-L circuit.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1

50	To Study the Steady state and transient response, DC and Sinusoidal response of R-L, R-C and R-L-C circuits.	Steady state and transient response to parallel R-C circuit.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
51	To Study the Steady state and transient response, DC and Sinusoidal response of R-L, R-C and R-L-C circuits.	Steady state and transient response to parallel R-L-C circuit.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
52	To Revise Laplace Transforms of typical signals	Laplace Transforms of typical signals	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
53	To Obtain the Laplace Transforms of periodic functions, Inverse transforms of that functions	Laplace Transforms of periodic functions, Inverse transforms	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
54	To State and prove the initial and final value theorems	Intitial and final value theorems	Sudhakar and Shyam Mohan SP	Black Board	M1
55	To Explain the Application of Laplace transforms related to circuits	Application of Laplace transforms in circuit analysis	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
56	To Study the Steady state and transient response, DC and Sinusoidal response of R-L, R-C and R-L-C circuits.	Steady state and transient response to parallel R-L circuit laplace approach.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
57	To Study the Steady state and transient response, DC and Sinusoidal response of R-L, R-C and R-L-C circuits.	Steady state and transient response to parallel R-L circuit laplace approach.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
58	To Study the Steady state and transient response, DC and Sinusoidal response of R-L, R-C and R-L-C circuits.	Steady state and transient response to parallel R-C circuit laplace approach.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
59	To Study the Steady state and transient response, DC and Sinusoidal response of R-L, R-C and R-L-C circuits.	Steady state and transient response to parallel R-L-C circuit laplace approach.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1
60	To Study the Steady state and transient response, DC and Sinusoidal response of R-L, R-C and R-L-C circuits.	Steady state and transient response to parallel R-L-C circuit laplace approach.	William H. Hayt, Jack E. Kemmerly and Steven M. Durbin	Black Board	M1

COURSE INSTRUCTOR

HOD/EEE

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EE211 :: Electrical Circuit Analysis(R18)

Lesson Plan

Topics to be covered	No Of Hours Required	Chapter in the textbook/ reference	Teaching aid	CO Mapping
Unit-I				
Poly phase Systems				
Introduction to Circuit Theory – Review of problems with 1-φ system	1	A.Sudhakar and Shyammohan	Black Board	CO-1
Advantages of 3-φ systems, Generation of 3-φ voltages, phase sequence	1	A.Sudhakar and Shyammohan	Black Board	CO-1
Star delta connections, Interconnection of 3-φ sources and loads	1	A.Sudhakar and Shyammohan	Black Board	CO-1
Voltage, Current and Power in 3-φ Y & Δ connected systems	2	A.Sudhakar and Shyammohan	Black Board	CO-1
Analysis of 3-φ balanced circuits Y Loads, Δ Loads	2	A.Sudhakar and Shyammohan	Black Board	CO-1
Analysis of 3-φ unbalanced circuits Y Loads, Δ Loads	1	A.Sudhakar and Shyammohan	Black Board	CO-1
3-φ 3 wire unbalanced systems - Y/Δ Transformation	1	A.Sudhakar and Shyammohan	Black Board	CO-1
3-φ 3 wire unbalanced systems - KVL Method	1	A.Sudhakar and Shyammohan	Black Board	CO-1
3-φ 3 wire unbalanced systems - Millman's method	1	A.Sudhakar and Shyammohan	Black Board	CO-1
3-φ power measurement by two wattmeter method - theory	1	A.Sudhakar and Shyammohan	Black Board	CO-1
3-φ power measurement by two wattmeter method - Problems	2	A.Sudhakar and Shyammohan	Black Board	CO-1
Tutorial	1			
Unit-II				
Network Functions				
Definitions of poles,zeros,transfer function, significance of network functions	1	A.Sudhakar and Shyammohan	Black Board	CO-2
Network functions for one port and two port networks	1	A.Sudhakar and Shyammohan	Black Board	CO-2
poles & zeros of two port networks	1	A.Sudhakar and Shyammohan	Black Board	CO-2
Restrictions on pole and zero locations for driving point & transfer functions	1	A.Sudhakar and Shyammohan	Black Board	CO-2
Time domain behavior	2	A.Sudhakar and	Black Board	CO-2

from pole-zero plot		Shyammohan		
Fourier Series				
Trigonometric, exponential Fourier series	2	M.E. Vanvalkenberg	Black Board	CO-2
Representation of periodic functions by Fourier series	2	M.E. Vanvalkenberg	Black Board	CO-2
Fourier transforms definition, Fourier transforms of simple functions	2	M.E. Vanvalkenberg	Black Board	CO-2
Applications to circuit analysis	2	M.E. Vanvalkenberg	Black Board	CO-2
Tutorial	1	M.E. Vanvalkenberg	Black Board	CO-2
Unit-III				
Two port Networks				
Definition of two port network, open circuit impedance(Z) parameters	1	A.Sudhakar and Shyammohan	Black Board	CO-3
Short circuit admittance (Y) parameters	1	A.Sudhakar and Shyammohan	Black Board	CO-3
Transmission (ABCD) & Inverse transmission parameters	1	A.Sudhakar and Shyammohan	Black Board	CO-3
hybrid(h),Inverse Hybrid parameters	1	A.Sudhakar and Shyammohan	Black Board	CO-3
Tutorial	1	A.Sudhakar and Shyammohan	Black Board	CO-3
Inter relation between parameters	2	A.Sudhakar and Shyammohan	Black Board	CO-3
image parameters	1	A.Sudhakar and Shyammohan	Black Board	CO-3
Inter connection of two port networks- cascade, series & parallel	1	A.Sudhakar and Shyammohan	Black Board	CO-3
Coupled circuits				
Definitions of self and mutual inductance, coefficient of coupling	1	M.E. Vanvalkenberg	Black Board	CO-3
dot convention, circuit equations in time domain and frequency domain	1	M.E. Vanvalkenberg	Black Board	CO-3
Solution of coupled circuits	1	M.E. Vanvalkenberg	Black Board	CO-3
Series & Parallel connections of two coupled coils	1	M.E. Vanvalkenberg	Black Board	CO-3
Single tuned circuits	1	M.E. Vanvalkenberg	Black Board	CO-3
Double tuned circuits	1	M.E. Vanvalkenberg	Black Board	CO-3
UNIT-IV				
Filters				
Introduction, Applications	1	A.Sudhakar and	Black Board	CO-4

		Shyammohan		
Low pass, High pass Filters	1	A.Sudhakar and Shyammohan	Black Board	CO-4
Band pass Filters	1	A.Sudhakar and Shyammohan	Black Board	CO-4
Frequency response	1	A.Sudhakar and Shyammohan	Black Board	CO-4
Constant k and m-derived filters	2	A.Sudhakar and Shyammohan	Black Board	CO-4
Network Synthesis				
Hurwitz Polynomial	1			
Properties of the positive real functions	1	A.Sudhakar and Shyammohan	Black Board	CO-4
Synthesis of RC,RL & LC driving point impedances	2	A.Sudhakar and Shyammohan	Black Board	CO-4
Synthesis of RL,RC admittances	2	A.Sudhakar and Shyammohan	Black Board	CO-4
Cauer method of synthesis	1	A.Sudhakar and Shyammohan	Black Board	CO-4
Foster method of synthesis	1	A.Sudhakar and Shyammohan	Black Board	CO-4
Tutorial	1	A.Sudhakar and Shyammohan	Black Board	CO-4

COURSE INSTRUCTOR

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PVm

EE212_Electronic Devices & Circuits

LESSON PLAN

M1: Lecture interspersed with discussion M2: Guest Lecture

M3: Tutorial M4: Field Visits

M5: Experimental (Models, Virtual, and simulation) M6: Group Assignments

Lecture No.	Topics to be covered	Chapter in the textbook/ reference	Teaching aid	Delivery methods
1.	Review Of Semiconductor Physics	T1	Black Board	M1
2.	Review Of Semiconductor Physics (contd.)	T1	Black Board	M1
3.	Basic Structure Of Pn Junction	T1	Black Board	M1
4.	Forward And Reverse Bias Of Pn-junction	T1,R	Black Board	M1
5.	V-I Characteristics Of Pn-junction Diode	T1,R	Black Board	M1
6.	Diode Current Equation	T1	Black Board	M1
7.	Generation And Recombination Currents	T1	Black Board	M1
8.	Junction Capacitances	T1	Black Board	M1, M3
9.	Junction Breakdown	T1	Black Board	M1
10.	Zener Diode As Voltage Regulator	T1	Black Board	M1,M3
11.	Zener Diode As Voltage Regulator (contd.)	T1	Black Board	M1,M3
12.	Tunnel Diode	T1	Black Board	M1
13.	Clippers	T2	Black Board	M1
14.	Two Level Clippers	T2	Black Board	M1
15.	Clampers	T2	Black Board	M1
16.	Applications Of Clippers And Clampers	T2	Black Board	M1
17.	Rectifiers: Introduction , H W R, F W R	T2	Black Board	M1
18.	F W R With C Filter	T1,T2	Black Board	M1
19.	B J T: Introduction, Construction	T1	Black Board	M1
20.	Transistor Action, Currents	T1	Black Board	M1
21.	Modes Of Operation, As An Amplifier & Switch	T1,R	Black Board	M1, M3
22.	Hybrid Pi Equivalent Circuit Model, C B Configuration	T1	Black Board	M1
23.	Early Effect And C E Config.	T1,R	Black Board	M1
24.	CC Configuration, Photo Transistor	T1,R	Black Board	M1
25.	Dc Biasing Of B J T : Q-point, Fixed Bias	T2,R	Power point presentation	M1,M6
26.	Emitter Stabilised Bias	T2,R	Power point presentation	M1,M6
27.	C-B Bias And Self Bias	T2,R	Power point presentation	M1,M6
28.	Stability Factors, Bias Compensation	T2,R	Black Board	M1,M6
29.	Problems On Biasing	T2,R	Black Board	M1,M6
30.	Thermal Runaway	T2,R	Black Board	M1
31.	J F E T: Construction And Operation	T1	Black Board	M1
32.	J F E T: Characteristics And Parameters	T1	Black Board	M1
33.	D-M O S F E T	T1	Black Board	M1
34.	E-M O S F E T	T1	Black Board	M1
35.	B J T Amplifier: Basic, Analog Signal & Linear Amplifier	T1	Black Board	M1
36.	B J T Linear Amplifiers & Equivalent Models	T1	Black Board	M1
37.	Small Signal Equivalent Circuit Of B J T	T1	Black Board	M1

38.	C E Amplifier	T1	Black Board	M1
39.	Problems	T1	Black Board	M1
40.	C C Amplifier	T1	Black Board	M1
41.	C B Amplifier	T1	Black Board	M1
42.	Multi-stage Amplifiers	T1	Black Board	M1
43.	Problems	T1	Black Board	M1
44.	F E T Amplifiers: Introduction, Ac Equivalent Circuit	T1	Black Board	M1
45.	C S – Amplifier	T1	Black Board	M1
46.	Common-drain (source-follower) Amplifier	T1	Black Board	M1
47.	Common Gate Amplifier	T1	Black Board	M1
48.	F E T Multi-stage Amplifiers	T1	Black Board	M1
49.	Frequency Response: Amplifier Frequency Response	T1	Black Board	M1
50.	System Transfer Function	T1	Black Board	M1
51.	Effect Of Coupling Capacitors	T1	Black Board	M1
52.	Effect Of Bypass Capacitors	T1	Black Board	M1
53.	Effect Of Bypass Capacitors Alone	T1	Black Board	M1
54.	Effect Of Bypass Capacitors With Coupling Capacitors	T1	Black Board	M1
55.	Frequency Response Of B J T	T1	Black Board	M1
56.	Frequency Response Of F E T	T1	Black Board	M1
57.	High Frequency Response Of Transistor Circuits	T1	Black Board	M1

COURSE INSTRUCTOR

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R.V.R.&J.C. College of Engg. Department of E.E.E. Chowdavaram, Guntur

EE213:DC Machines (R18)

Content Delivery Methods:

M1: Lecture interspersed with discussion
M2: Guest Lecture
M3: Tutorial
M4: Field Visits
M5: Experimental (Models, Virtual, simulation)
M6: Group Assignments

LESSON PLAN

Lecture No.	Learning Objectives	Topics to be covered	Chapter in the textbook/ reference	**Teaching aid**	**Delivery methods**
1.	Introduction to the topics and chapters to be discussed in the course	Introduction	J.B.Gupta	Black Board	M1
2.	Identifying the properties of magnetic circuits	Simple magnetic circuit, magnetic circuits with air gap,	J.B.Gupta	Black Board	M1
3.	Identifying the properties of magnetic circuits	Air-gap fringing fields,Magnetic equivalent circuit	J.B.Gupta	Black Board	M1
4.	Undertake tutorials on the analysis of all the above	Tutorial - 1		Black Board	M1, M3
5.	To identify the types of magnetic materials &their properties	Properties of magnetic materials, Hysteresis and eddy current losses,permanent magnetic materials	J.B.Gupta	Black Board	M1
6.	To identify the field energy	Energy in magnetic system field energy	Nagarath and Kothari	Black Board	M1
7.	Identifying different parameters responsible for emf induced in ac machines	mechanical force	Nagarath and Kothari	Black Board	M1
8.	Undertake tutorials on the analysis of all the above	Tutorial - 2		Black Board	M1, M3
9.	To calculate the torques in the system	Mechanical energy, torques in system with permanent magnets,	Nagarath and Kothari	Black Board	M1
10.	To calculate the torques in the system	Mechanical energy, torques in system with permanent magnets,	Nagarath and Kothari	Black Board	M1
11.	Identifying different types of systems	Single excited systems	Nagarath and Kothari	Black Board	M1
12.	Undertake tutorials on the analysis of all the above	Tutorial - 3		Black Board	M1, M3
13.	Identifying different types of systems	Doubly excited systems	Nagarath and Kothari	Black Board	M1
14.	Identifying different types of systems	Doubly excited systems	Nagarath and Kothari	Black Board	M1
15.	Identifying different types of systems	Doubly excited systems	Nagarath and Kothari	Black Board	M1
16.	Undertake tutorials on the analysis of all the above	Tutorial - 4		Black Board	M1, M3
17.	To understand the principle and parts of D.C machine	Principle and constructional features of dc generators	Bimbhra	Black Board	M1
18.	To understand the principle and parts of D.C machine	Principle and constructional features of dc generators	Bimbhra	Black Board	M1
19.	To identify the windings	Types of winding	J.B.Gupta	Black Board	M1
20.	Undertake tutorials on the analysis of all the above	Tutorial - 5		Black Board	M1, M3

21.	To identify the windings	Types of winding	J.B.Gupta	Black Board	M1
22.	To identify the windings	Types of winding	J.B.Gupta	Black Board	M1
23.	To identify the windings	Types of winding	J.B.Gupta	Black Board	M1
24.	Undertake tutorials on the analysis of all the above	Tutorial - 6		Black Board	M1, M3
25.	To understand the concept of synchronous power	Types of generators, efficiency	J.B.Gupta	Black Board	M1
26.	To explain parallel operation of alternators	Problems on above topic	J.B.Gupta	Black Board	M1
27.	To practice numerical problems on two parallel alternators	Problems on above topic	J.B.Gupta	Black Board	M1
28.	Undertake tutorials on the analysis of all the above	Tutorial - 7		Black Board	M1, M3
29.	To identify the effect of armature reaction effect	Armature reaction	Bimbhra	Black Board	M1
30.	To know the commutation	Commutation & interpoles	Bimbhra	Black Board	M1
31.	To identify the effect of armature reaction	Problems on above topic	Bimbhra	Black Board	M1
32.	To understand the effect of armature reaction	Problems on above topic	Bimbhra	Black Board	M1
33.	Undertake tutorials on the analysis of all the above	Tutorial - 8		Black Board	M1, M3
34.	To study the performance characteristics	No load & load characteristics of d.c generators, applications	J.B.Gupta	Black Board	M1
35.	To study the performance characteristics	No load & load characteristics of d.c generators, applications	J.B.Gupta	Black Board	M1
36.	To study the performance characteristics	No load & load characteristics of d.c generators, applications	J.B.Gupta	Black Board	M1
37.	Undertake tutorials on the analysis of all the above	Tutorial - 9		Black Board	M1, M3
38.	To study the performance characteristics	No load & load characteristics of d.c generators, applications	J.B.Gupta	Black Board	M1
39.	To study the performance characteristics	No load & load characteristics of d.c generators, applications	J.B.Gupta	Black Board	M1
40.	Undertake tutorials on the analysis of all the above	Tutorial - 10		Black Board	M1, M3
41.	To identify the paralleling of generators	Parallel Operation of D.C Generators, Load sharing	J.B.Gupta	Black Board	M1
42.	To identify the paralleling of generators	Parallel Operation of D.C Generators, Load sharing	J.B.Gupta	Black Board	M1
43.	To identify the paralleling of generators	Problems on above topic	J.B.Gupta	Black Board	M1
44.	Undertake tutorials on the	Tutorial - 11		Black Board	M1, M3

	analysis of all the above				
45.	To understand Principle of operation, characteristics & Applications of DC motors	Different types of Motors and their characteristics	Nagarath and Kothari, Bimbhra	Black Board	M1
46.	To understand Principle of operation, characteristics & Applications of DC motors	Different types of Motors and their characteristics	J.B.Gupta	Black Board	M1
47.	To understand Principle of operation, characteristics & Applications of D.C motors	Different types of Motors and their characteristics	J.B.Gupta	Black Board	M1
48.	To understand Principle of operation, characteristics & Applications of D.C motors	Problems on above topic	10.2 Nagarath and Kothari	Black Board	M1
49.	To understand Principle of operation, characteristics & Applications of D.C motors	Problems on above topic	10.2 Nagarath and Kothari	Black Board	M1
50.	To understand the speed control of D.C motors	Speed control of D.C shunt motors	Nagarath and Kothari	Black Board	M1
51.	To understand the speed control of D.C motors	Speed control of D.C series motors.	Nagarath and Kothari	Black Board	M1
52.	Undertake tutorials on the analysis of all the above	Tutorial-12		Black Board	M1, M3
53.	To understand the speed control of D.C motors	Numarical problems	Nagarath and Kothari	Black Board	M1
54.	Undertake tutorials on the analysis of all the above	Tutorial - 12		Black Board	M1, M3
55.	To know the operation of starters	Starters and their design	J.B.Gupta	Black Board	M1, M3
56.	To know the operation of starters	Starters and their design	J.B.Gupta	Black Board	M1, M3
57.	To know the operation of starters	Numarical problems	J.B.Gupta	Black Board	M1, M3
58.	To identify the Losses and Efficiency of D.C Motor	Losses and Efficiency of Motor	B.L.Theraja, vol-II	Black Board	M1, M3
59.	To identify the Losses and Efficiency of D.C Motor	Swinburne's &Hopkinson's Test	B.L.Theraja vol-II	Black Board	M1, M3
60.	To test the machine	Swinburne's &Hopkinson's Test	B.L.Theraja vol-II	Black Board	M1, M3
61.	To test the machine	Retardation and field test	B.L.Theraja vol-II	Black Board	M1, M3
62.	To test the machine	Retardation and field test	B.L.Theraja vol-II	Black Board	M1, M3
63.	To test the machine	Problems on above topics	B.L.Theraja vol-II	Black Board	M1, M3
64.	To test the machine	Problems on above topics	B.L.Theraja vol-II	Black Board	M1, M3

V. Sarayu
COURSE INSTRUCTOR

HOD/EEE

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EE214:Electromagnetic field theory(R18)

Content Delivery Methods:

M1: Lecture interspersed with discussion
M2: Guest Lecture
M3: Tutorial
M4: Field Visits
M5: Experimental (Models, Virtual, simulation)
M6: Group Assignments

LESSON PLAN

Period	Unit	Learning objectives	TOPICS TO BE COVERED	Chapter in the text book/reference	Teaching aid	Delivery method
1.	UNIT-I	To know about electromagnetics	Introduction	Mathew NO Sadiku		
2.		To understand Coulomb's law in vector form	Coulomb's law in vector form	Mathew NO Sadiku	Black Board	M1
3.		To understand Concept of electric field intensity, E	Concept electric field intensity, E	Mathew NO Sadiku	Black Board	M1
4.		To understand Field due to point(s) charge distributions (superposition)	Field due to point(s) charge distributions (superposition)	Mathew NO Sadiku	Black Board	M1
5.		To understand Field due to continuous volume charge distribution (line)	Field due to continuous volume charge distribution (line)	Mathew NO Sadiku	Black Board	M1
6.		To understand Field due to continuous volume charge distribution (surface)	Field due to continuous volume charge distribution (surface)	Mathew NO Sadiku	Black Board	M1
7.		To understand Field due to continuous volume charge distribution (volume)	Field due to continuous volume charge distribution (volume)	Mathew NO Sadiku	Black Board	M1
8.		To understand Electric flux density, D	Electric flux density, D	Mathew NO Sadiku	Black Board	M1
9.		To understand Gauss's law and its application (Maxwell's first equation for electrostatic fields)	Gauss's law and its application (Maxwell's first equation for electrostatic fields)	Mathew NO Sadiku	Black Board	M1
10.		To understand Gauss's law and its application	Gauss's law and its application	Mathew NO Sadiku	Black Board	M1
11.		To understand Energy expended in moving a point charge in an electric field	Energy expended in moving a point charge in an electric field	Mathew NO Sadiku	Black Board	M1
12.		To understand Definition of potential and P.D	Definition of potential and P.D	Mathew NO Sadiku	Black Board	M1
13.		To understand Potential field of a point charge	Potential field of a point charge	Mathew NO Sadiku	Black Board	M1
14.		To understand Potential field of a system of charges	Potential field of a system of charges	Mathew NO Sadiku	Black Board	M1
15.		To understand Potential gradient (Maxwell's second equation for electrostatic fields)	Potential gradient (Maxwell's second equation for electrostatic fields)	Mathew NO Sadiku	Black Board	M1
16.		To understand Field due to dipole	Field due to dipole	Mathew NO Sadiku	Black Board	M1
17.		To understand Energy density in electro	Energy density in electro static field	Mathew NO Sadiku	Black Board	M1

		static field				
18.		Review of above topics	problems	Mathew NO Sadiku		
19.		Review of above topics	problems	Mathew NO Sadiku	Black Board	M1
20.		Review of above topics	problems	Mathew NO Sadiku	Black Board	M1
21.		Review of above topics	Problems	Mathew NO Sadiku	Black Board	M1
22.	UNIT-II	To understand Nature dielectric materials	Nature dielectric materials	Mathew NO Sadiku	Black Board	M1
23.		To understand Boundary conditions for perfect dielectric material and conductor	Boundary conditions for perfect dielectric material and conductor	Mathew NO Sadiku	Black Board	M1
24.		To understand Capacitance concept	Capacitance	Mathew NO Sadiku	Black Board	M1
25.		To understand Calculation of capacitance for several geometries	Calculation of capacitance for several geometries	Mathew NO Sadiku	Black Board	M1
26.		To understand Calculation of capacitance for several geometries	Calculation of capacitance for several geometries	Mathew NO Sadiku	Black Board	M1
27.		To understand Poisson's and Laplace's equations	Poisson's and Laplace's equations	Mathew NO Sadiku	Black Board	M1
28.		To understand Solution of Laplace's equation	Solution of Laplace's equation	Mathew NO Sadiku	Black Board	M1
29.		To understand Current and current density (J,J)	Current and current density (J,J)	Mathew NO Sadiku	Black Board	M1
30.		To understand Current continuity equation	Current continuity equation	Mathew NO Sadiku	Black Board	M1
31.		To understand Conductor properties	Conductor properties	Mathew NO Sadiku	Black Board	M1
32.		Review of above topics	Problems	Mathew NO Sadiku	Black Board	M1
33.		Review of above topics	Problems	Mathew NO Sadiku	Black Board	M1
34.		Review of above topics	Problems	Mathew NO Sadiku	Black Board	M1
35.	UNIT-III	To understand Introduction to steady magnetic fields and Biot-Savart's law	Introduction to steady magnetic fields and Biot-Savart's law	Mathew NO Sadiku	Black Board	M1
36.		To understand Ampere' circuital law Maxwell's third equation	Ampere' circuital law Maxwell's third equation	Mathew NO Sadiku	Black Board	M1
37.		To understand Magnetic flux an Magnetic flux density (H,B)	Magnetic flux an Magnetic flux density (H,B)	Mathew NO Sadiku	Black Board	M1
38.		To understand Scalar and Vector magnetic potentials (A,V_m)	Scalar and Vector magnetic potentials (A,V_m)	Mathew NO Sadiku	Black Board	M1
39.		To understand Force on moving charges, differential current element and between differential current elements	Force on moving charges, differential current element and between differential current elements	Mathew NO Sadiku	Black Board	M1
40.		To understand Force and torque on a closed	Force and torque on a closed circuit	Mathew NO Sadiku	Black Board	M1

		circuit				
41.		To understand Nature of magnetic materials	Nature of magnetic materials	Mathew NO Sadiku	Black Board	M1
42.		To understand Magnetization and permeability	Magnetization and permeability	Mathew NO Sadiku	Black Board	M1
43.		To understand Magnetic boundary conditions	Magnetic boundary conditions	Mathew NO Sadiku	Black Board	M1
44.		To understand Potential energy in magnetic fields	Potential energy in magnetic fields	Mathew NO Sadiku	Black Board	M1
45.		Review of above topics	Problems	Mathew NO Sadiku	Black Board	M1
46.		Review of above topics	Problems	Mathew NO Sadiku	Black Board	M1
47.		Review of above topics	problems	Mathew NO Sadiku	Black Board	M1
48.	UNIT-IV	To understand Introduction to time varying fields and Faraday's law Maxwell's first equation of TVF	Introduction to time varying fields and Faraday's law Maxwell's first equation of TVF	Mathew NO Sadiku	Black Board	M1
49.		To understand Displacement current (modification of Ampere's law) I_D. Maxwell's second equation of TVF	Displacement current (modification of Ampere's law) I_D. Maxwell's second equation of TVF	Mathew NO Sadiku	Black Board	M1
50-52		To understand Introduction to wave and uniform plane wave	Introduction to wave and uniform plane wave	Mathew NO Sadiku, EC Jordan and KG Balmain	Black Board	M1
53-55		To understand Wave propagation in free space(loss less) – general case	Wave propagation in free space(loss less) –general case	Mathew NO Sadiku, EC Jordan and KG Balmain	Black Board	M1
56		To understand Wave propagation in lossy dielectrics and good conducting media – special cases	Wave propagation in lossy dielectrics and good conducting media – special cases	Mathew NO Sadiku, EC Jordan and KG Balmain	Black Board	M1
57		To understand Skin effect	Skin effect	Mathew NO Sadiku, EC Jordan and KG Balmain	Black Board	M1
58		To understand Polarization	Polarization	Mathew NO Sadiku, EC Jordan and KG Balmain	Black Board	M1
59		Review of above topics	Problems	Mathew NO Sadiku, EC Jordan and KG Balmain	Black Board	M1
60		Review of above topics	Problems	Mathew NO Sadiku, EC Jordan and KG Balmain	Black Board	M1

COURSE INSTRUCTOR

HOD/EEE

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Chowdavaram, GUNTUR

R.V.R.&J.C. College of Engg. Department of E.E.E.

EE215:Basic Civil & Mechanical Engineering (R18)

Content Delivery Methods:

M1: Lecture interspersed with discussion **M2: Guest Lecture**
M3: Tutorial **M4: Field Visits**
M5: Experimental (Models, Virtual, simulation) **M6: Group Assignments**

LESSON PLAN

Lecture No.	Learning Objectives	Topics to be covered	Textbook/ reference	Teaching aid	Delivery methods
1.	Introduction to the topics	Introduction		Black Board	M1
2.	Unit-I Surveying	Objectives, and classification	Dr. K. Arora	Black Board	M1
3.		Fundamental principles	Dr. K. Arora	Black Board	M1
4.	Measurement of distance	Chaining a line on flat surface	Dr. K. Arora	Black Board	M1
5.		Instruments used for chaining	Dr. K. Arora	Black Board	M1
6.		Direct and, indirect ranging	Dr. K. Arora	Black Board	M1
7.		Obstakils for chaining	Dr. K. Arora	Black Board	M1
8.		Measurement of area	Dr. K. Arora	Black Board	M1
9.	Measurement of angles	Instruments for angle measurement	Dr. K. Arora	Black Board	M1
10.		Thedolite and field adjustments.	Dr. K. Arora	Black Board	M1
11.	Levelling	definitions	Dr. K. Arora	Black Board	M1
12.		Height of instrument method	Dr. K. Arora	Black Board	M1, M3
13.		Problems on levelling	Dr. K. Arora	Black Board	M1, M3
14.	Building Materials	Stones typesand properties	S S Bhavikatti	Black Board	M1
15.		Uses and advantages	S S Bhavikatti	Black Board	M1
16.		Bricks classes based on quality	S S Bhavikatti	Black Board	M1
17.		Cement,-Types	S S Bhavikatti	Black Board	M1
18.		Properties of OPC	S S Bhavikatti	Black Board	M1
19.		Sand and cement mortar	S S Bhavikatti	Black Board	M1
20.		Uses of mortar	S S Bhavikatti	Black Board	M1
21.	Unit-2 Building components	Parts of building and its functions	S S Bhavikatti	Black Board	M1
22.		Basic requirements of building	S S Bhavikatti	Black Board	M1
23.		Brick masonry construction	S S Bhavikatti	Black Board	M1
24.		Stone masonry construction	S S Bhavikatti	Black Board	M1
25.	Foundations	Types of foundations and its suitability	S S Bhavikatti	Black Board	M1
26.	Engineering mechanics And solid mechanics	Force and units	Dr.B.C.Punmia	Black Board	M1
27.		Hooke's law and elasticity	Dr.B.C.Punmia	Black Board	M1, M3
28.		Problems on stresses and strains	Dr.B.C.Punmia	Black Board	M1, M3
29.		Bending moment diagram for SS beam	Dr.B.C.Punmia	Black Board	M1, M3
30.		Shear force diagram for SS beam	Dr.B.C.Punmia	Black Board	M1, M3
31.		Bending moment and shear force diagram for cantilever beams	Dr.B.C.Punmia	Black Board	M1
32.		Torsion and problems	Dr.B.C.Punmia	Black Board	M1, M3

Unit-III				
Boilers				
Classification	1	Shanmugam G and Palanichamy M.S, "Basic Civil and Mechanical Engineering	Black Board	CO-3
Working of Babcock-Wilcox water tube boiler	1		Black Board/ projector	CO-3
Working of Cochran Fire tube boiler	1		Black Board/ projector	CO-3
Differences between Fire tube and Water tube boilers	1		Black Board/ projector	CO-3
Turbines				
Water Turbines – Classification	1	RK Bansal "Fluid Mechanics and Hydraulic Machines"	Black Board	CO-3
Construction and working of Pelton wheel turbine	1		Black Board/ projector	CO-3
Construction and working of Francis turbine	1		Black Board/ projector	CO-3
Construction and working of Kaplan turbine	1		Black Board/ projector	CO-3
Pumps – construction and working of Reciprocating and Centrifugal pumps.	1		Black Board/ projector	CO-3
Construction and working of Centrifugal pumps.	1		Black Board/ projector	CO-3
UNIT-IV				
Thermal Systems				
I.C Engines - Classification of IC Engines, Components in I.C engine	1	V Ganesan "Internal combustion engines"	Black Board/ projector	CO-4
working principle of SI engines	1		Black Board/ projector	CO-4
working principle of CI engines	1		Black Board/ projector	CO-4
Comparison of 2 stroke & 4 stroke engine and SI & CI engines, Applications.	1		Black Board/ projector	CO-4
Refrigeration – Principle of vapor compression and absorption system, Layout of typical domestic refrigerator	2		Black Board/ projector	CO-4
Air Conditioning – summer and winter air conditioning systems.	2		Black Board/ projector	CO-4
Transmission of Power				
Transmission of Power, Belt Drives,	1	Shantha Kumar S R J., "Basic Mechanical Engineering	Black Board/ projector	CO-4
Types of Belts, Materials, Velocity Ratio	1		Black Board/ projector	CO-4
Ratio of Tensions, Flat Belt, V-Belt	1		Black Board/ projector	CO-4
Rope Drives	1		Black Board/ projector	CO-4
Gear Drives - Types, Speed Ratio, Materials	1		Black Board/ projector	CO-4
Simple problems in Transmission of Power by Belt drives	2		Black Board/ projector	CO-4

COURSE INSTRUCTOR

HOD/EEE

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EE216:Digital Electroniocs (R18)
LESSON PLAN

Period	Unit	Learning objectives	TOPICS TO BE COVERED	Chapter in the text book/reference	Teaching aid	Delivery method
1.	UNIT-I	To know about need and importance of learning Digital Electronics	Introduction	M Morris Mano		
2.		To understand different number systems	Number systems and conversion from one system to another	M Morris Mano	Black Board	M1
3.		To understand Concept ofsigned and unsigned numbers and complement of numbers	Signed and unsigned numbers and r's and (r-1)'s complement	M Morris Mano	Black Board	M1
4.		To understand addition and subtraction using r's and (r-1)'s complement	R's and (r-1)'s complement, codes	M Morris Mano	Black Board	M1 M6
5.		To understand different codes	Different codes and their importance	M Morris Mano	Black Board	M1 M3
6.		To understand Boolean Algebra	Boolean algebra	M Morris Mano	Black Board	M1 M3
7.		To understand Boolean Theorems and Functions	Boolean Theorems and Functions	M Morris Mano	Black Board	M1
8.		To understand Canonical Formulas, Manipulation of Boolean Formulas	Canonical Formulas, Manipulation of Boolean Formulas	M Morris Mano	Black Board	M1
9.		To understand Logic gates	Different Logic Gates and their truth tables	M Morris Mano	Black Board	M1
10.		To understand Combinational Networks, Incomplete Boolean Functions and Don't Care Conditions	Combinational Networks, Incomplete Boolean Functions and Don't Care Conditions	M Morris Mano	Black Board	M1
11.		To understand Additional Boolean Operations	Additional Boolean Operations and Logic Gates	M Morris Mano	Black Board	M1
12.		To understand additional Logic Gates	additional Logic Gates	M Morris Mano	Black Board	M1
13.		To understand Universal Gates and implementing other gates with them	Universal Gates and implementing other gates with them	M Morris Mano	Black Board	M1
14.		To understand Karnaugh maps and advantages of it	Karnaugh maps and advantages of it	M Morris Mano	Black Board	M1
15.		To understand how to obtain Minimal Expressions for Complete Boolean Functions using K-Maps(2,3 and 4 variable)	Minimal Expressions for Complete Boolean Functions using K-Map (2,3 and 4 variable)	M Morris Mano	Black Board	M1
16.		To understand how to obtain Minimal Expressions for Complete Boolean Functions using K-Map(5 variable)	Minimal Expressions for Complete Boolean Functions using K-Map (5 variable)	M Morris Mano	Black Board	M1 M6
17.		To understand how to obtain Minimal Expressions for InComplete Boolean Functions using K-Map(2,3 and 4 variable)	Minimal Expressions for InComplete Boolean Functions using K-Map (2,3 and 4 variable)	M Morris Mano	Black Board	M1 M6

18.		To understand how to obtain Minimal Expressions for InComplete Boolean Functions using K-Map(5 variable)	Minimal Expressions for InComplete Boolean Functions using K-Map (5 variable)	M Morris Mano		
19.		To understand Quine-McCluskey Method and its advantages over former method	Introduction to Quine-McCluskey Method and its advantages over former method	M Morris Mano	Black Board	M1
20.		To understand how to Generate Prime Implicants and Prime Implicates	Generating Prime Implicants and Prime Implicates	M Morris Mano	Black Board	M1 M6
21.		To understaod Prime Implicants / Prime Implicates Tables and Irredundant Expressions	Prime Implicants / Prime Implicates Tables and Irredundant Expressions	M Morris Mano	Black Board	M1 M6
22.		To understand Prime Implicants /Prime Implicates Table Reductions	Prime Implicants /Prime Implicates Table Reductions	M Morris Mano	Black Board	M1
23.		To understand Decimal Method for Obtaining Prime Implicants	Decimal Method for Obtaining Prime Implicants	M Morris Mano	Black Board	M1
24.	UNIT-II	To understand EX-OR, EX-NOR Circuits, General design procedure for Combinational logic circuits	EX-OR, EX-NOR Circuits, General design procedure for Combinational logic circuits	M Morris Mano and A. Anand Kumar	Black Board	M1
25.		To understand Binary adders	Binary half adder and Full adder	M Morris Mano and A. Anand Kumar	Black Board	M1
26.		To understand Binary subtractors	Half and full subtractors	M Morris Mano and A. Anand Kumar	Black Board	M1
27.		To understand Decimal adders	Decimal adders	M Morris Mano and A. Anand Kumar	Black Board	M1
28.		To understand Comparators	Comparators.	M Morris Mano and A. Anand Kumar		
29.		To understand Decoders	Decoders	M Morris Mano and A. Anand Kumar		
30.		To understand Encoders	Encoders	M Morris Mano and A. Anand Kumar		
31.		To understand Multiplexers	Multiplexers	M Morris Mano and A. Anand Kumar		
32.		To Design of BCD to 7 Segment Decoder	Design of BCD to 7 Segment Decoder	M Morris Mano and A. Anand Kumar		
33.		To design Parity Generator and Checker, Carry look ahead adders	Parity Generator and Checker, Carry look ahead adders	M Morris Mano and A. Anand Kumar		
34.		To design BCD Adder / Subtractor	BCD Adder / Subtractor	M Morris Mano and A. Anand Kumar		
35.	UNIT-III	To understand Latches, Timing Considerations,	Latches, Timing Considerations,	M Morris Mano and A. Anand Kumar	Black Board	M1
36.		To understand Characteristic Table, Characteristic Equation, Excitation table, State table and State diagrams for	Characteristic Table, Characteristic Equation, Excitation table, State table and State diagrams for SR, JK	M Morris Mano and A. Anand Kumar	Black Board	M1

		SR, JK				
37.		To understand Master Slave JK	Master Slave JK	M Morris Mano and A. Anand Kumar	Black Board	M1
38.		To understand D and T Flip-flops	D and T Flip-flops	M Morris Mano and A. Anand Kumar	Black Board	M1
39.		To Convert from one type of Flip-flop to another	Conversion from one type of Flip-flop to another	M Morris Mano and A. Anand Kumar	Black Board	M1
40.		To understand Sequential Circuits	Introduction to sequential circuits	M Morris Mano and A. Anand Kumar	Black Board	M1
41.		To understand Shift Registers	Shift registers	M Morris Mano and A. Anand Kumar	Black Board	M1
42.		To design Counters	Counters	M Morris Mano and A. Anand Kumar	Black Board	M1
43.		To Design Ripple counters	Design of ripple counters	M Morris Mano and A. Anand Kumar	Black Board	M1
44.		To design Synchronous counters	Synchronous counters	M Morris Mano and A. Anand Kumar	Black Board	M1
45.		To Analyse and Synthesize Sequential Circuits	Analysis and Synthesis of Sequential Circuits	M Morris Mano and A. Anand Kumar	Black Board	M1
46.		To design Sequence Generator	Sequence Generator	M Morris Mano and A. Anand Kumar	Black Board	M1
47.		To Design Sequence Detector	Sequence Detector	M Morris Mano and A. Anand Kumar	Black Board	M1 M6
48.	UNIT-IV	To understand IC logic families	IC logic Families Introduction	M Morris Mano	Black Board	M1
49.		RTL, DTL	RTL, DTL	M Morris Mano	Black Board	M1
50.		To understand TTL, ECL, MOS	TTL, ECL, MOS	M Morris Mano	Black Board	M1
51.		CMOS and IIL families and comparison of different families	CMOS and IIL families and comparison of different families	M Morris Mano	Black Board	M1
52.		To understand Programmable Logic Devices and ROM	Programmable Logic Devices and ROM	M Morris Mano	Black Board	M1
53.		To understand	Programmable Logic Arrays (PLA),	M Morris Mano	Black Board	M1
54.		To understand Programmable Array Logic (PAL).	Programmable Array Logic (PAL).	M Morris Mano	Black Board	M1
55.		Review of above topics	Problems	M Morris Mano	Black Board	M6
56.		Review of above topics	Problems	M Morris Mano	Black Board	M6

COURSE INSTRUCTOR

HOD/EEE

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Chowdavaram, GUNTUR-522 019.

COURSE: ENVIRONMENTAL SCIENCE COURSE CODE: MC 002

(ACTIVITY BASED – ECE/EEE/ME BRANCHES)

LESSON PLAN

S. No.	THEME OF THE ACTIVITY	LOCATION & TYPE OF ACTIVITY	REMARKS
1	"Beat the Plastic Pollution"	Campus premises: Identified and listed the types of plastic items used excessively and dumped in and around the campus	Steps to reduce, reuse and recycle plastics were initiated on the campus and at homes
2	Kitchen garden	Cultivation of Green leafy vegetables in the allotted plots	Group activity extended till the end of semester and the produce harvested
3	Plantation on campus	Ornamental and fruit yielding plants were planted on the campus	Maintenance of the saplings including watering and weeding
4	Water shed management and rain water harvestment	Visit to local water shed in the nearby village 'Yanamadala'	Understood the importance of watershed for local agricultural needs and the maintenance activities needed
5	Generation of Electricity from spoilt vegetables	Class room activity demonstrating the power generation	Understand the importance of alternative sources of energy
6	Solid waste management	Visit to the local composting unit in yanamadala village	Discussion and enlisting of steps for effective solid waste management on the campus
7	Guest lecture on Sustainable development and biodiversity	Prof. P. Brahmaji Rao, HOD – Environmental Science, ANU delivered guest lecture on	Students collected information on biodiversity

		sustainable development	and its conservation methods
8	Environmental legislation, acts and case studies	Seminars by Student groups - Topic: Environmental Acts	Appreciated the enactment of laws for environmental protection and felt the need for effective implementation
9	Field visit to local mining site	Stone quarrying from the neighbouring hills of the campus was observed and learnt the ill effects of mining on environment and biodiversity	Enlisted the measures to overcome the ill effects of mining which included plantation, local people's participation etc.
10	Climate Change – Global warming, acid rain and ozone depletion	Seminars by student groups on Envronmental pollution, biodiversity and climate change related case studies	Listed measures to be adopted for preventing climate change
11	Guest lecture on Sustainable development and climate change	Prof. M. Chandrasekhar, Head of the department of environmental engineering, NIT - Warangal	Students prepared a report on the causes and effects of different types of pollution and climate change

K. Sekhar

Course Instructor

Signature of HOD

Dr. K. CHANDRA SEKHAR
Professor & HOD, EEE Dept.
R.V.R & J.C. College of Engg.
Chowdavaram, GUNTUR-522 019.

LESSON PLAN

Dr. A.S.K (IT)

Academic Year : 2019-2020

Year & Semester : B.Tech / IV Year II SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT-461 (R16) PROJECT WORK

Name of Faculty : Dr.A.Sri krishna

Week	Work Plan	Learning Out comes	Hours Required / LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review/ Remarks (By HOD)
Week1	Choose your topic	The idea/concept which forms the basis for their project shall be presented to the guide and concerned in-charge and shall get the approval for continuation..	3	3			
Week2	Do your research.	Able to understand the background of the topic and the current thinking, as well as finding out what future research is considered necessary in the area.	3	6			
Week3	Implementation of the project.	The implementation and the testing done	3	9			
Week4	Develop an outline with presentation and report preparation.	Over all presentation of the work carried out and the results found out for the valuation under the internal assessment and submission of the project with presentation and report preparation.	3	12			
Week5	Review I	Introduction, Descriptive or explanatory paragraphs following the introduction,	3	15			

		setting the background or theme.					
Week6	**Review II**	Methodology, Analysis and conclusion of the paper.	3	18			
Week7	**Writing a Research Report**	Able to Submit The Project Report using the guidelines given in Course file.	3	21			

A. Srikrishna

Signature of the Faculty

A. Srikrishna

Signature of the HOD:

Date:

Vamsi Sir (MBA)

LESSON PLAN FOR R-16 REGULATIONS

AcademicYear : 2018-2019
Year&Semester : 2018 & IVth Year & First Semester
Branch : B.Tech IT
Subject Code&Name : IT/CS 407 : Industrial Engineering & Management
Nameof Faculty : P.Vamsi Krishna

Unit No.	Topic of syllabus to be covered	Learning Outcome	Teaching Mode BB/ OHP/ LCD	Hours Required		Total no. of Hours (Cumulative)	Expected date of Completion (for eachUnit) By HOD	Review/ Remarks (By HOD)
				Lectures	Tutorial			
I	Management Concept	Introduction	BB	1		1		
I	Managerial Roles	Roles of a Manager	BB	1		2		
I	Managerial Skills	Skill does every manager need	BB	1		3		
I	Brief treatment of managerial functions	Managerial Functions	LCD	1		4		
I	Scientific Principles of Management	Principles of Management	BB	1		5		
I	Administrative Principles of Management	Principles of Management	BB	1		6		

I	Salient features of sole proprietorship	Business Organisation features:Sole proprietorship	BB	1		7		
I	Partnership	Partnership business features	BB	1		8		
I	Joint Stock Company	Joint stock company importance	BB	1		9		
I	Private limited and Public limited companies	Differences of Public ltd vs Pvt ltd companies	BB/LCD	1		10		
II	Objectives of Financial Management	Various objectives	BB/LCD	1		11		
II	Concept of interest	Interest and its importance	BB	1		12		
II	compound interest	Importance and problems	BB	1		13		

II	equivalent cash flow diagram	cash flow diagram importance	BB	1		14		
II	The annual equivalent method	Annual worth method derivation and its problems	BB	1		15		
II	present worth method	Present worth method derivation and its problems	BB	1		16		
II	future worth method	Future worth method derivation and its problems	BB	1		17		
II	Depreciation	Purpose and its importance	BB	1		18		
II	Types of depreciation	Depreciation types	BB	1		19		
II	Common methods of depreciation	Various methdos	BB	1		20		

II	The straight line method	Problems relating to straight line method	BB	1		21		
II	Declining balance method	Declining balance method and its problems	LCD	1		22		
II	Sum of the year's digits method.	Sum of the year's digits method and its problems	BB	1		23		
III	Functions of Human Resource Management	Various functions of HRM	LCD	1		24		
III	Job Analysis	Importance of Job analysis	LCD	1		25		
III	Human Resources Planning	Manpower planning analysis	LCD	1		26		
III	Brief treatment of Recruitment,	Recruitment importance	LCD	1		27		

III	Selection	Selection process	BB	1		28		
III	Placement	Process relating to the placement	BB	1		29		
III	Induction & Orientation	Orientaton significance	BB	1		30		
III	Training and Development	Methods dealing with Training and development	BB	1		31		
III	Performance Appraisal	Performance appraisal methods	BB	1		32		
III	Job Evaluation	Job evaluation methods	BB	1		33		
III	Career Planning and Development	Career planning and development methods	BB	1		34		

III	Stress Management	Stress management importance	BB	1		35		
III	Compensation	Different types of compensation structure	BB	1		36		
III	Motivation and Leadership	Motivation importance and need for leadership	BB	1		37		
III	Theories of motivation	Theories of learning in motivation	BB	1		38		
III	Theories of motivation	Theories of learning in motivation	BB	1		39		
III	Styles of Leadership	Leadership styles parameter	BB	1		40		
III	Styles of Leadership	Leadership theories and styles	BB	1		41		

IV	Functions of Materials Management	Functions of MM	BB	1		42		
IV	Material Requirement Planning	MRP importance	BB	1		43		
IV	Purchasing	Purchasing methods	BB	1		44		
IV	Objectives of Purchasing	Objectives of purchasing	BB/LCD	1		45		
IV	Source Selection	Source selection	BB	1		46		
IV	Procurement Methods	Methods of procurement	BB/LCD	1		47		
IV	Vendor Rating	Vendor rating methods	LCD	1		48		

IV	Inventory Management	Inventory management importance	BB	I		49		
IV	EOQ	EOQ derivatioin	BB/ LCD	I		50		
IV	EOQ	EOQ problems	BB	I		51		
IV	EPQ	EQP problems	BB	I		52		
IV	ABC Analysis,VED,FSN analysis	ABC analysis problems and others	BB	I		53		
V	Functions of Marketing	Marketing functions	BB	I		54		
V	Marketing Mix	4P's of marketing	BB	I		55		

V	Product life cycle	Stages of Product life cycle	BB	I		56		
V	Channels of distribution	Distribution channels	BB	I		57		
V	Marketing Segmentation	Segmentation of marketing	BB/LCD	I		58		
V	Advertising & Sales promotion	Advertising and sales promotion schemes	BB/LCD	I		59		
V	Market Research	Marketing research significance	BB/LCD	I		60		

BB Black Board **LCD**: PowerPointPresentation **OHP**: Over HeadProjector

Signature of the Faculty

Signature of theHOD :

IT101 (R16) DIFFERENTIAL EQUATIONS AND TRANSFORMS

Dr. Bala Murugan

Academic Year: 2016-2017

Year & Semester: B. Tech / I Year I SEM (ITA Section)

Branch: Information Technology

Subject Code & Name: IT101 (R16) DIFFERENTIAL EQUATIONS AND TRANSFORMS

Name of Faculty: Dr. K.S. Balamurugan

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture (L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** Definition-Formation of differential equation	Learn to find the differential equation for the given curve	BB	2		2	09-08-2016	09-08-2016		
2	Equations of first order and first degree: Linear equations, Bernoulli's equation.	Learn to solve Linear and Bernoulli's Equations.	BB	2		4	12-08-2016	12-08-2016		
3	Exact differential equations	Learn to solve Exact differential equations	BB	1		5	16-08-2016	16-08-2016		
4	Equations reducible to exact equations.	Learn to solve non exact equations	BB	3		8	17-08-2016	20-08-2016		

5	**UNIT - II** Definitions–Operator D–Rules for finding the complementary function	Learn to find the complementary function	BB	2		10	30-08-2016	30-08-2016		
6	Rules for finding the particular integral	Learn to find the particular integral	BB	2		12	31-08-2016	31-08-2016		
7	Higher Order Linear Differential Equations With Constant Coefficients	Learn to solve Higher Order Linear DE with constant coefficients	BB	3		15	02-09-2016	07-09-2016		
8	Method Of Variation Of Parameters	Learn to solve second order linear DE with constant coefficients using method of variation of parameters	BB	2		17	09-09-2016	10-09-2016		
9	Cauchy's and Legendre's Linear Equation	Learn to solve Cauchy's and Legendre's Linear Equation	BB	2		19	16-09-2016	21-09-2016		
10	**UNIT – III** Introduction To Partial Differential Equations	Understand the introduction of Partial Differential Equations	BB	1		20	4-10-2016	4-10-2016		
11	Formation of P D E	Learn to form P D E for the given curve	BB	2		22	5-10-2016	7-10-2016		
12	Solution of P D E By Direct Integration	Learn to solve PDE by the method of direct integration	BB	1		23	8-10-2016	8-10-2016		
13	Linear P D E of First Order	Learn to solve Linear P D E of First Order	BB	3		26	18-10-2016	19-10-2016		

14	Homogeneous Linear P D E With Constant Coefficients	Learn to solve Homogeneous Linear P D E With Constant Coefficients	BB	3		29	25-10-2016	25-10-2016		
15	**UNIT – IV** Introduction To Laplace Transforms	Learn Basics of Laplace transforms	BB	1		30	26-10-2016	26-10-2016		
17	L T of Elementary Functions	Learn to find LT of elementary functions	BB	1		31	01-11-2016	01-11-2016		
18	Properties of Laplace Transforms	Learn to find LT of derivatives & integrals of functions	BB	3		34	05-11-2016	05-11-2016		
19	Inverse Laplace Transforms	Learn to solve inverse Laplace Transforms	BB	2		36	08-11-2016	08-11-2016		
20	Convolution theorem	Learn to solve inverse Laplace Transforms using Convolution theorem	BB	1		37	09-11-2016	09-11-2016		
20	**UNIT – V** Fourier transforms	Learn to find Fourier transforms for the given functions	BB	5		42	18-11-2016	18-11-2016		
21	Convolution theorem and Parseval's Identity	Learn the applications of Fourier transforms	BB	2		44	22-11-2016	22-11-2016		

Signature of the Faculty

Signature of the HOD:
Date:

IT102 (R16) Engineering Physics

Dr. K. Surendranath

Academic Year : 2016-2017

Year & Semester : B.Tech / I Year I SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT102 (R16) Engineering Physics

Name of Faculty : Dr.A.G.K.Moorthy/ Dr.K.Surendranath

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT – I Ultrasonics** Properties, production of Ultrasonics by Magnetostriction and Pizeo electric method	Introduce the main objective of the course and explain the Properties of Ultrasonics and production	BB	5		5	16-08-2016	16-08-2016		
2	Detection, general applications	Integrating optics and acoustics, general Industrial applications		3		8	19-08-2016	20-08-2016		
3	Pulse Echo And Imaging Concepts	Concept of NDT testing and imaging in medical field	BB&LCD	3		11	22-08-2016	22-08-2016		

4	Unit II : Physical Optics: Intro To Interference	Concept of superposition of light	BB	1		12	23-08-2016	23-08-2016		
5	Optical Reversibility And Stokes Principle	Conservation of light energy concept	BB	1		13	24-08-2016	24-08-2016		
6	Derivation Of Cosine Law In Thin Films	Quantitative way of learning	BB	1		14	29-08-2016	29-08-2016		
7	Wedge Shaped Film_ Derivation	Application of Interference in Thin films	BB	1		15	30-08-2016	30-08-2016		
8	Newton Rings Derivation & Explanation	Familiarizing the concept of measuring wavelength	BB	1		16	31-08-2016	31-08-2016		
9	Intro To Diffraction, Diff. Of Fresnel And Frauhn Hoffer Diffraction	Understanding the concept of Diffraction	BB	1		17	06-09-2016	06-09-2016		
10	Problems On Newton Rings And Wedge Shaped Film	Solving skills	BB	1		18	07-09-2016	07-09-2016		
11	Sigle Slit , Qualitative And Quantitative Treatment	Understanding the concept with mathematical modelling	BB	2		19	12-09-2016	12-09-2016		
12	N-slit Theory , Plane Transmission grating	Understanding the concept to multislit diffraction and application	BB	2		21	17-09-2016	17-09-2016		
13	Introduction To Polarization	Polarization of light	BB	1		22	19-09-2016	19-09-2016		
14	Double Refraction & Calcite Crystal	**Understand of double refraction shown by naturally available crystal**	**BB and Demonstration**	**2**		**23**	21-09-2016	21-09-2016		

15	Nicol Prism, Polarizer And Analyzer	Understanding the way to construct Nicol prism	BB	1		24	21-09-2016	21-09-2016		
16	Production And Detection Of Circular And Elliptically Polarized Lights	Experimental technique involved in producing the polarized lights	BB	2		26	24-09-2016	24-09-2016		
17	**UNIT-III** : Intro To Lasers, Absorption, Spontaneous & Stimulated Emission	Familiarizing in emission and absorption mechanism	BB	1		27	03-10-2016	03-10-2016		
18	Pumping Mechanisms, Intro To Einstien Co-Efficients and its relevence	**Understanding the concept of laser predicted by Einstien**	**BB**	**2**		**29**	05-10-2016	05-10-2016		
19	Meta Stable State, Three, Four Energy Level System	Understanding the necessity of metastable state	BB	1		30	08-10-2016	08-10-2016		
20	Components Of Laser, Properties Of Laser	Understand basic components of Laser	BB	1		31	17-10-2016	17-10-2016		
21	He-Ne Laser	Familiarizing the Gas laser functioning mechanism	BB	1		32	18-10-2016	18-10-2016		
22	Nd-YAG Laser	Understanding the function of Solid state Laser	BB	1		33	19-10-2016	19-10-2016		
23	Semi Conductor Laser : Direct Band Gap Semi Conductors	Understanding the need of direct band gap semiconductors for optoelectronic devices	BB	1		34	24-10-2016	24-10-2016		

24	Energy Diagrams Of P-n Junction Diode and Construction Of Homo junction Laser	Understanding Semi conductor laser	BB	1		35	25-10-2016	25-10-2016		
25	Holography	Understanding the concept of producing 3D image with out lenses	BB	1		36	31-10-2016	31-10-2016		
26	Applications Of Holography And Lasers	understanding the significant applications in various fields	BB	1		37	31-10-2016	31-10-2016		
27	Intro To Optical .fibers, TIR, Classification Of Optical fibers	Understanding the light guiding principle	BB	1		38	01-11-2016	01-11-2016		
28	Numerical Aperture, Acceptance Angle, V-number, Differences Among Different Op.fibers and applications	Understanding important parameters in Optical fiber, classification and applications	BB	2		40	02-11-2016	02-11-2016		
29	**Unit-IV** Debroglei Hypothesis, Matterwaves, Intro To Davison & Germer Expt.	Understanding particle duaility and experiment	BB	1		41	05-11-2016	05-02-2019		
30	D&G Expt. And Result Discussion. Heisenberg Uncertinity Principle , Single Slit Verification	Understanding basic formalism of quantum mechanics with uncertainity principle	BB	1		42	07-11-2016	07-11-2016		
31	Schrodinger Wave Eqn. Derivation	Understanding the derivation of Wave equation to solve stationary state	BB	1		43	08-11-2016	08-11-2016		

		problems								
32	Physical Significance Of Wave Fn. And Particle In a Box	**Understanding the probabilistic approach to wave function and application to wave equation**		**1**		**44**		14-11-2016	14-11-2016	
33	Tunneling Effect	Understanding the tunnel effect and its applictions	BB	1		45	16-11-2016	16-11-2016		
34	Unit V: Induced Electric Fields, Faraday's Law	Understanding the concept electromagnetism	BB	1		46	17-11-2016	17-11-2016		
35	Non Existence Of Mono Poles Modified Ampere's Law, Maxwell Equations, Wave Eqn. In Free Space	Derivation of of Maxwell's equations	BB	1		47	21-11-2016	21-11-2016		
36	Poynting Theorem	Understanding the energy radiating per unit area by conservation of energy principle	BB	1		48	22-11-2016	22-11-2016		
37	Problems on Poynting theorem	Familiarizing with concept by doing problems	BB	1		49	23-11-2016	23-11-2016		

Signature of the Faculty

Signature of the HOD:
Date:

RVR & JC COLLEGE OF ENGINEERING :: CHOWDAVARAM 522 019

IT104 SUB: ENVIRONMENTAL STUDIES R16

LESSON PLAN

Content Delivery Methods

M1: Lecture interspersed with discussion
M2: Guest Lecture
M3: Tutorial
M4: Field Visits
M5: Experimental (Models, Virtual, simulation)
M6: Group Assignments

Lesson Plan

Topics to be covered	No. of Periods	Text Book/ Reference Book	Delivery Methods
UNIT - I			
Introduction to Environmental studies – Meaning, Multidisciplinary nature, Scope and Importance	03	Anubha Kaushik and C.P.Kaushik, Suresh K. Dhameja	M1
Natural resources – Forest resource: Uses, Over exploitation, Deforestation; Big dams and their effects on tribals and forests	02	-do-	M1, M4
Water resource - Use and over-utilization of surface and ground water, floods and droughts, Water logging and salinity, Conflicts over water.	03	-do-	M1
Mining and their impacts; Renewable and Non-renewable sources of energy	04	-do-	M1, M4-M6
Land resource – Land degradation; Soil erosion: Prevention and Conservation; Effects of Modern agriculture	03	-do-	M1,M3
Ecosystems – Structure and functions	03	-do-	M1,M4
Types of ecosystems – Forest, grassland, aquatic and desert	02	-do-	M1,M4
UNIT - II			
Definition, Values of biodiversity, Bio-geographical classification of India, Threats to biodiversity	03	Anubha Kaushik and C.P.Kaushik, Suresh K. Dhameja	M1
India – a Mega diversity nation; Hot spots of Biodiversity, Conservation of biodiversity	04	-do-	M1
Endemic and Endangered species of India; IUCN classification	01	-do-	M1
Causes, effects and control of air and	04	-do-	M1,M4

Dr. Sobha

water pollution			
Thermal, nuclear, noise pollutions	02	-do-	M1
Soil pollution and solid waste management	02	-do-	M1,M4
UNIT - III			
From unsustainable to sustainable development, Population growth and environment, Green revolution	04	Anubha Kaushik and C.P.Kaushik, Suresh K. Dhameja	
Rain water harvesting, watershed management, cloud seeding	02	-do-	
Resettlement and rehabilitation of people - problems and concerns,	01	-do-	
Environmental Impact Assessment	01	T Benny Joseph	
Global warming &Green house effect, Acid rain, Ozone layer depletion.	04		
UNIT - IV			
Prevention and Control of Water pollution & Air Pollution act, Environmental protection act, Wild life protection act, Forest Conservation act.	05	Anubha Kaushik and C.P.Kaushik	M1,M6
Stockholm Conference 1972, Earth Summit 1992. Copenhagen Summit 2009.	02	T Benny Joseph	M1,M6
Chipko movement, Narmada BachaoAndolan, Silent Valley Project, Madhura Refinery and Taj Mahal, Chernobyl Nuclear Disaster, Ralegaon Siddhi, Florosis and Bhopal Tragedy.	05	Anubha Kaushik and C.P.Kaushik, Suresh K. Dhameja, R. Rajagopalan	M1,M2,M6
Total number of periods	**60**		

K. Lokha

Signature of the Faculty

A. Srikanth

Signature of the HoD
Date:

Sri with a Rangaraya (Mech)

IT 106 (R16) MECHANICS FOR ENGINEERS

Academic Year: 2016-2017
Year & Semester: B.Tech / I Year I Sem (IT A Section & IT B Section)
Branch: Information Technology
Subject Code & Name: IT 106 (R16) MECHANICS FOR ENGINEERS
Name of Faculty: K Snehita / J Rangaraya Chowdary

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board (BB)/LCD Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading / Lagging	Review/ Remarks (By HOD)
				L	T					
1.	**UNIT - I** Concurrent Forces in a Plane: Principles of statics	Apply principles of mechanics to determine the resultant of several forces acting on a plane.	BB	1		1	17/08/2016	17/08/2016		
2.	Composition and resolution of forces		BB	1		2	18/08/2016	18/08/2016		
3.	Equilibrium of concurrent forces in a plane, method of projections		BB/LCD	1		3	20/08/2016	20/08/2016		
4.	Problems		BB		2	5	20/08/2016	22/08/2016		
5.	Non Concurrent Forces in a Plane		BB	1		6	22/08/2016	24/08/2016		
6.	Method of moments.		BB	1		7	24/08/2016	29/08/2016		
7.	Problems		BB		2	9	29/08/2016	30/08/2016		
8.	Couple, equilibrium of parallel forces in a plane, resultant		BB/LCD	1		10	30/08/2016	01/09/2016		

9.	Problems		BB		2	12	01/09/2016	02/09/2016		
10.	Equilibrium of general case of forces in a plane		BB	1		13	02/09/2016	09/09/2016		
11.	Problems		BB		2	15	09/09/2016	14/09/2016		
12.	Plane trusses-method of joints	Determine the axial	BB/ LCD	1		16	14/09/2016	15/09/2016		
13.	Problems	forces in the members of simple trusses using method of joints.	BB		3	19	15/09/2016	16/09/2016		
14.	**UNIT – II** Centroid and Centre of Gravity: Concept of centroid and Centre of gravity	Determine the centroids and center of gravity of mathematical	BB/ LCD	1		20	16/09/2016	17/09/2016		
15.	Centroids of simple figures from basic principles	ly definable areas as well as composite	BB	2		22	17/09/2016	19/09/2016		
16.	Centroids of composite plane figures	areas of standard geometrical shapes.	BB	2		24	19/09/2016	21/09/2016		
17.	Friction: Types of friction, laws of friction	Analyze the problems involving dry	BB/LCD	1		25	21/09/2016	23/09/2016		
18.	Simple contact friction,	frictional contact and	LCD	1		26	23/09/2016	24/09/2016		
19.	Problems	wedge	BB		2	28	24/09/2016	03/10/2016		
20.	Wedge friction.	friction	BB/LCD	1		29	03/10/2016	05/10/2016		

21.	Problems		BB		1	30	05/10/2016	06/10/2016		
22.	**UNIT – III** Moment of Inertia of Plane Figures: Moment of inertia of a plane figure with respect to an axis in its plane, polar moment of inertia	Calculate the moment of inertia of composite areas and material bodies of standard shapes.	BB	1		31	06/10/2016	07/10/2016		
23.	Parallel axis theorem		BB	1		32	07/10/2016	08/10/2016		
24.	Moment of inertia of standard sections by integration		BB	2		34	08/10/2016	17/10/2016		
25.	Moment of inertia of composite areas.		BB/LCD	1		35	17/10/2016	19/10/2016		
26.	Problems		BB		2	37	19/10/2016	20/10/2016		
27.	**UNIT – IV** Rectilinear Motion: Kinematics of rectilinear motion	Apply dynamic Equilibrium Equation for rigid bodies under rectilinear and curvilinear translation	BB	1		38	20/10/2016	21/10/2016		
28.	Problems		BB		2	40	21/10/2016	24/10/2016		
29.	D Alembert's principle		BB/LCD	1		41	24/10/2016	27/10/2016		
30.	Problems		BB		2	43	27/10/2016	28/10/2016		
31.	Work and energy method		BB/LCD	1		44	28/10/2016	31/10/2016		
32.	Problems		BB/ LCD		2	46	31/10/2016	03/10/2016		
33.	Impulse and momentum		BB/LCD	1		47	03/10/2016	03/10/2016		
34.	Problems		BB		1	48	03/10/2016	02/11/2016		
35.	Direct central impact.		BB/LCD	1		49	02/11/2016	03/11/2016		
36.	Problems		BB		1	50	03/11/2016	04/11/2016		

37.	Kinematics of curvilinear motion		BB	1		51	04/11/2016	05/11/2016		
38.	Problems		BB		1	52	05/11/2016	07/11/2016		
39.	D Alembert's principle in curvilinear motion.		BB/ LCD	1		53	07/11/2016	09/11/2016		
40.	Problems		BB		1	54	09/11/2016	11/11/2016		
41.	**UNIT – V** Moment of Inertia of Material Bodies: Moment of inertia of a rigid body, Moment of inertia of a lamina		BB	1		55	11/11/2016	14/11/2016		
42.	Moments of inertia of three – dimensional bodies (sphere, right circular cone and cylinder)	Understand kinematics and kinetics of rotation of a rigid body about a fixed axis.	BB/LCD		2	57	14/11/2016	17/11/2016		
43.	Rotation of a Rigid Body about a Fixed Axis		BB	1		58	17/11/2016	21/11/2016		
44.	Kinematics of rotation, Equation of motion for a rigid body rotating about a fixed axis.		BB		2	60	17/11/2016	23//11/2016		

Signature of the Faculty

Signature of the HOD
Date:

Dr. A.V. Rama krishna (Maths)

LESSON PLAN

Academic Year : 2016-2017

Year & Semester : B.Tech / I Year I SEM (ITA Section & ITB Section)

Branch : Information Technology

Subject Code & Name : IT107 (R16) Matrix Algebra & Numerical Analysis

Name of Faculty : Dr.A.V.Ramakrishna

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	Introduction	Know the main objective of the course.	BB	1		1	28-12-2016	28-12-2016		
2	Eigenvalues and eigenvectors	Know eigenvalues and eigenvectors	BB	1		2	29-12-2016	29-12-2016		
3	Properties	understand properties	BB	1		3	30-12-2016	30-12-2016		
4	problems	Solve problems	BB	1		4	02-01-2017	02-01-2017		

5	C-H theorem	Know the significance of C-H theorem.	BB	1		5	02-01-2017	02-01-2017		
6	problems	Able to do related problems	BB	1		6	04-01-2017	04-01-20178		
7	Reduction to diagonal form	Understand diagonal form	BB	1		7	05-01-2017	05-01-2017		
8	Quadratic form	Understand quad. form	BB	1		8	06-01-2017	06-01-2017		
9	problems	Solve problems	BB	1		9	08-01-2017	08-01-2017		
10	problems	Solve problems	BB	1		10	18-01-2017	18-01-2017		
11	Multiple integrals	Understand mult, integrals	BB	1		11	19-01-2017	19-01-2017		
12	Double integrals	Understand the double integrals	BB	1		12	20-01-2017	20-01-2017		
13	Problems	Solve problems on double integrals	BB	1		13	21-01-2017	21-01-2017		
14	Change of order	Understand change of order in double integrals	BB	1		14	23-01-2017	24-01-2017		
15	problems	Solve problems	BB	1		15	25-01-2017	25-01-2017		
16	problems	Solve problems	BB	1		16	27-01-2017	27-01-2017		
17	Area by double integrals	Solve related problems	BB	1		17	30-01-	30-01-		

							2017	2017		
18	Change of variables	Understand the importance of change of variables	BB	1		18	03-02-2017	03-02-2017		
19	Triple integrals	Evaluate triple integrals	BB	1		19	08-02-2017	08-02-2017		
20	problems	Solve problems	BB	1		20	09-02-2017	09-02-2017		
21	Volume as a triple integral	Apply triple integrals to find volumes	BB	1		21	10-02-2017	10-02-2017		
22	problems	Solve related problems	BB	1		22	13-02-2017	13-02-2017		
23	Vector function	Know what is vector function	BB	1		23	15-02-2017	15-02-2017		
24	Scalar and vector point functions	Know the point functions	BB	1		24	16-02-2017	16-02-2017		
25	Problems	Solve related problems	BB	1		25	20-02-2017	20-02-2017		
26	Problems on gradient	Solve related problems	BB	1		26	01-03-2017	01-03-2017		
27	Problems on directional derivative	Solve related problems	BB	1		27	02-03-2017	02-03-2017		
28	Divergence and curl	Know the concept of div and curl	BB	1		28	03-03-2017	03-03-2017		

29	Problems	Solve related problems	BB	1		29	06-03-2017	06-03-2017		
30	Vector identies	Derive identities	BB	1		30	08-03-2017	08-03-2017		
31	Integration of vectors	Understand vector integration	BB	1		31	09-03-2017	09-03-2017		
32	Line integrals	Understand the line integrals	BB	1		32	10-03-2017	10-03-2017		
33	problems	Solve problems	BB	1		33	15-03-2017	15-03-2017		
34	Green's theorem	Know Green's theorem	BB	1		34	16-03-2017	16-03-2017		
35	Problems	Solve related problems	BB	1		35	20-03-2017	20-03-2017		
36	Surface integral	Define surface integral	BB	1		36	22-03-2017	22-03-2017		
37	problems	Evaluate surface integrals	BB	1		37	23-03-2017	23-03-2017		
38	Stoke's theorem	Know Stoke's theore	BB	1		38	24-03-2017	24-03-2017		
39	Gauss divergence Theorem	Know Gauss div theorem	BB	1		39	27-03-2017	27-03-2017		

40	problems	Solve problems	BB	1		40	27-03-2017	27-03-2017		
41	Numerical solution of equations	Understand numerical solution	BB	1		41	30-03-2017	30-03-2017		
42	Newton-Raphson method	Understand N-R method	BB	1		42	31-03-2017	31-03-2017		
43	problems	Solve problems	BB	1		43	03-04-2017	03-04-2017		
44	Gauss-Seidal method	Understand Gauss=-Seidal method	BB	1		44	06-04-2017	06-04-2017		
45	problems	Solve problems	BB	1		45	07-04-2017	07-04-2017		
46	Finite differences	Understand finite differences	BB	1		46	09-04-2017	09-04-2017		
47	problems	Solve problems	BB	1		47	10-04-2017	10-04-2017		
48	Interpolation	Define interpolation	BB	1		48	11-04-2017	11-04-2017		
49	Interpolation unequal intervals	Understand inerpolation	BB	1		49	12-04-2017	12-04-2017		
50	Problem	Solve problems	BB	1		50	13-04-2017	13-04-2017		
51	Numerical differentiation	Know numerical differentiation	BB	1		51	17-04-2017	17-04-2017		
52	problems	Solve problems	BB	1		52	19-04-2017	19-04-2017		

53	Numerical integration	Understand the concept of numerical integration	BB	1		53	20-04-2017	20-04-2017		
54	problems	Solve problems	BB	1		54	21-04-2017	21-04-2017		
55	problems	Solve related problems	BB	1		55	24-04-2017	24-04-2017		

Signature of the Faculty

Signature of the HOD:

Date:

LESSON PLAN

Academic Year: 2017-2018

Year & Semester: B.Tech / I Year II SEM (ITA Section)

Branch: Information Technology

Subject Code & Name: IT 110 English for Communication– (R16)

Name of Faculty: Dr. D. Rajani

Lectures : 4 periods / week	Internal marks : 40 marks
	External marks : 60
Semester End Exam : 3 hrs	Credits : 3

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/ Lagging	Review/ Remarks (By HOD)
	UNIT-I LEXIS:								
	Introduction to English Communication skills			1	1	04/01/18	04/01/18		
	Synonyms	Students learn synonyms meanings and their application	B.B.	2	3	05/01/18 08/01/18	05/01/18 08/01/18		
	Antonyms	Students learn opposite words and their application	B.B.	2	5	10/01/18 11/01/18	10/01/18 11/01/18		
	Words often	Students	B.B.	2	7	12/01/18	12/01/18		

Rajani

	confused	understand and learn meanings of different words and their usage in different contexts				22-01-2018	22-01-2018		
	One word substitutes	Students comprehend and learn usage of words	B.B.	2	9	24-01-2018 25-01-2018	24-01-2018 25-01-2018		
	Analogy	Learn to analyze the meanings of words and think rationally in application and usage .	B.B.	3	12	31-01-2018 01-02-2018 05-02-2018	31-01-2018 01-02-2018 05-02-2018		
	UNIT- II								
	Written Communication								
	Note Taking	Understand meaning of Note Taking and its uses,how to take notes, Features of efficient notes.	B.B.	1	13	09/02/18	09/02/18		
		Learn different methods of Note Taking- Practice – Analyze the difference and usage of models learned in a practical way .	B.B.	1	14	12/02/18	12/02/18		

	Note making	understand the difference between Note taking and Note making.		2	16	14-02-2018 15-02-2018	14-02-2018 15-02-2018		
	Writing a Proposal	Understand Meaning and purpose of a proposal.		1	17	16-02-2018	16-02-2018		
		Differentiate between models and their Features and application . Learn how to write a Proposal in different contexts .		2	19	19-02-2018 21-02-2018	19-02-2018 21-02-2018		
	Memo Writing	Differentiate between types of memos and their Features and application .		1	20	22-02-2018	22-02-2018		
		Learn how to write a memo in different contexts and formats .		1	21	26-02-2018	26-02-2018		
	Paragraph Writing	Understand the significance of Topic sentence, Determiners and Qualifiers in a paragraph. Role of Coherence and Cohesion in a paragraph .		1	22	26-02-2018	26-02-2018		

		How to write different types of paragraph using and highlighting their specific features	B.B.	2	24	28-02-2018	28-02-2018		
	UNIT-III								
	Principles of Grammar:								
	Basics of grammar	Revising with Significant emphasis on grammar principles like articles &prepositions -Practice exercises	B.B.	2	26	01-03-2018 12-03-2018	01-03-2018 12-03-2018		
	Tenses	Learning types of tenses , and their usage .practice exercises on all types of tenses ,	B.B.	2	28	14-03-2018 15-03-2018	14-03-2018 15-03-2018		
	Voice	Understanding the usage of active and passive voice. Practice exercises	B.B.	2	30	19-03-2018 21-03-2018	19-03-2018 21-03-2018		
	Speech	Understanding the significance of Direct and Indirect speech.	B.B.	1	31	22-03-2018	22-03-2018		
		Practice exercises on all types of sentences	B.B.	2	33	23-03-2018	23-03-2018		
		Revision and working out	B.B.	2	35	28-03-2018	28-03-2018		

		of Correction of sentences-Models , question papers							
	UNIT-IV								
	Communication:								
	Forms of communication	Understanding the difference between communication and conversation.types of communication	B.B.	2	37	29-03-2018 02-04-2018	29-03-2018 02-04-2018		
	Barriers to communication	Understanding and identifying the Barriers to communication.	B.B.	2	39	4-04-2018 6-04-2018	4-04-2018 6-04-2018		
	Non verbal communication Types	Understanding the difference between verbal &Non Verbal communication Analyzing Non Verbal communication and its scope. Kinesics, Proxemics, Occulesics ,Haptics	PPT	4	43	10-04-2018 11-04-2018 12-04-2018 18-04-2018	10-04-2018 11-04-2018 12-04-2018 18-04-2018		
	UNIT- V								
	Composition	Understand and acquaint themselves with diverse features of professional	B.B.	2	45	18-04-2018 19-04-2018	18-04-2018 19-04-2018		

		communicatio n							
	E-Mail	Understand and acquaint themselves with diverse features of Email communicatio n. Email-etiquette, guiding principles, language, reasons for the popularity of Emails, develop knowledge and skill to write effective emails. Practice Writing Emails	B.B.	3	48	23-04-2018 25-04-2018	23-04-2018 25-04-2018		
	Letter writing	Understand and acquaint themselves with different features of professional Letter Writing. Practice different letter writing models	B.B.	2	51	26-04-2018 27-04-2018	26-04-2018 27-04-2018		
	Precis writing	Understanding the significance of Precis Writing – Practice precis Writing	B.B.	2	53	27-04-2018 30-04-2018	27-04-2018 30-04-2018		
	Biographical writing	Learn to write biographies of famous	B.B.	3	56	2-05-2018 3-05-2018 4-05-2018	2-05-2018 3-05-2018 4-05-2018		

		personalities. practice writing biography of APJ Abdul Kalam, Rattan Tata, Sudha Murthy, Mother Teresa							

Course Coordinator

Programme / Module Coordinator

HOD

IT111 (R16) Object Oriented Programming

Academic Year : **2016-2017**

Year & Semester : **B.Tech / I Year II SEM (IT A section and B section)**

Branch : **Information Technology**

Subject Code & Name : **IT111 (R16) OBJECT ORIENTED PROGRAMMING**

Name of Faculty : **Smt N. Neelima/**

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board (BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT I** **An Overview of C++:** An Overview of C++: The Origins of C++	Discussed the course objectives and outcomes and syllabus. Familiarize with history of C++	BB	1		1	28-12-2016	28-12-2016		
2	What is Object Oriented Programming, some C++ fundamentals	Able to understand the fundamentals of C++	BB	1		2	28-12-2016	29-12-2016		
3	Old-Style Vs Modern C++,	Able to understand the importance of	BB	1		3	29-12-2016	29-12-2016		

	Introducing C++ Classes	modern C++ over Old style								
4	Function Overloading, Operator Overloading	Able to know the different ways of implementing operator overloading	BB/ LCD	2		5	29-12-2016	30-12-2016		
5	Inheritance, Constructors and destructors	Able to understand the concepts of inheritance	BB/LCD	1		6	30-12-2016	30-12-2016		
6	The C++ Keywords, The General Form of a C++ Program	Familiarize with keywords of C++	BB	1		7	01-01-2017	02-01-2017		
7	**Classes and Objects:** Classes, Structures and Classes, Unions and Classes are Related	Able to understand the structures and unions and how the classes are related	BB	1		8	02-01-2017	02-01-2017		
8	Friend Functions, Friend Classes	Familiarize with Friend functions and classes	BB/ LCD	1		9	03-01-2017	04-01-2017		
9	Inline Functions, Parameterized Constructors	Able to know the use of inline function and different types of constructors	BB/ LCD	2		11	04-01-2017	05-01-2017		
10	Static Class Members, When Constructors and Destructors are Executed, Scope Resolution Operator, Nested Classes, Local Classes	Able to use of static keyword and difference between nested class and local class	BB/ LCD	1		12	05-01-2017	07-01-2017		

11	Passing and Returning Objects, Object Assignment	Able to understand the passage of objects to method	BB	1		13	07-01-2017	08-01-2017		
12	**Arrays, Pointers, References and the Dynamic Allocation:** Arrays of Objects, Pointers, References	Able to know the usage of object arrays, pointers	BB	1		14	08-01-2017	08-01-2017		
13	Dynamic Allocation Operators, and the Placement Forms of new and delete	Familiarize with dynamic allocation	BB	1		15	14-01-2017	17-01-2017		
14	**UNIT II** **Function Overloading, Copy Constructors and Default Arguments:** Function Overloading, Overloading Constructor Functions	Able to understand overloading constructor and functions	BB/ LCD	3		18	17-01-2017	19-01-2017		
15	Copy Constructors, Finding the Address of an Overloaded Function, Overload Anachronism	Able to learn how to implement copy constructor and overload functions	BB	3		21	19-01-2017	23-01-2017		
16	Default Arguments, Function Overloading and Ambiguity.	Able to understand use of default arguments	BB	2		23	23-01-2017	23-01-2017		

17	**Operator Overloading:** Creating Member Operator Function, Overloading Using a Friend Function	Able to know the Services Provided To Network Layer	BB	3		26	23-01-2017	23-01-2017		
18	Overloading new delete, Overloading Special Operators & Comma Operator	Able to understand overloading different operators	BB	4		30	24-01-2017	24-01-2017		
19	**UNIT III** **Inheritance:** Base-Class Access Control, Inheritance and protected members	Able to understand access modifiers and use of protected member in inheritance	BB	3		33	24-01-2017	25-01-2017		
20	Inheriting Multiple Base Classes, Constructors, Destructors and Inheritance	Able to know the implementation of inheriting multiple base classes	BB/LCD	3		36	25-01-2017	30-01-2017		
21	Granting Access, Virtual Base Classes	familiarize with implementation of virtual base classes	BB	2		38	25-01-2017	30-01-2017		
22	**Virtual Functions & Polymorphism:** Virtual Functions	Able to know virtual functions	BB/LCD	2		40	30-01-2017	02-02-2017		
23	The Virtual Attribute is inherited, Virtual Functions are Hierarchical, Pure Virtual Functions	familiarize with pure virtual functions	BB/LCD	3		43	02-02-2017	06-02-2017		

24	Using Virtual Functions, Early Vs Late Binding	Able to understand bindings	BB	2		1	06-02-2017	06-02-2017		
25	**UNIT IV** Templates: Generic Functions, Applying Generic Functions	Able to understand the usage of generic functions	BB	2		2	06-02-2017	08-02-2017		
26	Generic Classes, Typename and export Keywords	Able to know the usage of generic classes, typename and export keywords	BB	2		3	08-02-2017	09-02-2017		
27	Power of Templates.	Able to understand the power of templates	BB	1		5	09-02-2017	13-02-2017		
28	Exception Handling: Fundamentals, Derived-Class Exceptions, Options	Able to Understand exception handling	BB/ LCD	2		6	13-02-2017	13-02-2017		
29	Terminate() and unexpected(), uncaught_exception(), exception and bad_exception Classes	Able to Understand exception handling	BB/ LCD	2		7	16-02-2017	16-02-2017		
30	Applying Exception Handling	Able to apply exception handling	BB/ LCD	1		8	20-02-2017	20-02-2017		
31	The C++ I/O System Basics: Old Vs. Modern C++ I/O	Able to learn Input/Output streams	BB/ LCD	1		9	20-02-2017	20-02-2017		

32	Stream Classes, Formatted I/O	Familiarize with the stream classes	BB/ LCD	2		11	28-02-2017	01-03-2017		
33	Overloading << and >>, Creating Manipulators	Able to know overloading operators << and >>	BB/ LCD	2		12	01-03-2017	02-03-2017		
34	**UNIT IV** **C++ File I/O:** File Classes, Opening and Closing a File	Able to Learn about File operations	BB	1		13	02-03-2017	06-03-2017		
35	Text Files, Unformatted Binary I/O	Familiarize with file and IO streams	BB/ LCD	2		14	06-03-2017	20-03-2017		
36	get(), Getline() functions, Detecting EOF Random Access	Able to know the usage of different functions	LCD	1		15	20-03-2017	30-03-2017		
37	**Runtime Type ID and the Casting Operators:** RTTI, Casting Operators	Able to learn the usage of run time type id and how to do casting	BB	2		18	06-04-2017	10-04-2017		
38	Dynamic_cast, Reinterpret_cast	Able to Understand dynamic casting	BB	1		21	12-04-2017	13-04-2017		
39	**Namespaces, Conversion Functions and other Advanced Topics:** Namespaces, The std Namespace, Creating Conversion Functions	Familiarize with namespaces and conversion functions	BB	2		23	17-04-2017	19-04-2017		
40	const Member Functions and mutable, Volatile Member Functions	Able to understand the usage of const, mutable and volatile member functions	BB	1		26	19-04-2017	20-04-2017		

41	Explicit Constructors, asm Keyword, Linkage Specification	Able to understand use of explicit constructors	BB	1		30	20-04-2017	21-04-2017		
42	Array-Based I/O, Dynamic Arrays	Able to know array based I/O and dynamic arrays	BB	2		33	21-04-2017	22-04-2017		
43	Binary I/O with Array-Based Streams, Differences between C and C++	Able to differentiate C and C++. Familiarize with Array based streams	BB	2		36	22-04-2017	24-04-2017		

N. Neelima

Signature of the Faculty

A. Srikanth

Signature of the HOD:

Date:

Dr. Lakshmi Rani

IT112(R16) PROFESSIONAL ETHICS AND HUMAN VALUES

Academic Year: 2016-2017

Year & Semester: B.Tech / I Year II SEM (ITA Section & ITB Sesction)

Branch : Information Technology

Subject Code & Name: IT112 (R16) PROFESSIONAL ETHICS AND HUMAN VALUES

Name of Faculty: Dr .P. LAKSHMI RANI

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** Introduction to ethics, values and morals	Introduce the main objective of the course and explain the fundamental concepts	BB	1		1	27-12-20116	27-12-20116		
2	Self confidence	Understand the concept self confidence	BB/PPT	1		2	29-12-2016	29-12-2016		
3	Self confidence	Understand the importance of self-confidence	BB/PPT	1		3	2-1-2017	2-1-2017		

4	Self-confidence	Understand the various factors affecting confidence levels	BB/PPT	1		4	03-1-2017	03-1-2017		
5	Self-confidence	Understand the techniques to enhance confidence levels	BB/PPT	1		5	03-1-2017	03-1-2017		
6	Valuing time	Understand importance of time	BB,VIDEOS	1		6	06-1-2017	06-1-2017		
7	Time management	Understand the time management techniques	BB/ Questionnaire/ VIDEOS	1		7	08-1-2017	8-1-2017		
8	Courage, civic virtue	Understand the importance of courage	BB	1		8	17-1-2017	17-1-2017		
9	Service learning	Understand the importance of service learning	BB/ GD	1		9	18-1-2017	18-1-2017		
10	Work ethics	Understand the importance of work ethics	BB	1		10	19-1-2017	19-1-2017		
11	Honesty, integrity	Understand the concepts honesty and integrity	BB	1		11	20-1-2017	20-1-2017		
12	Ethics, values, morals	Understand the terms ethics, values and morals	BB	1		12	27-1-2017	27-1-2017		
13	Co-operation	Understand the importance of co operation	BB/videos	1		13	31-1-2017	31-1-2017		

14	spirituality	Understand the concept spirituality in the work place	BB	1		14	2-2-2017	2-2-2017		
15	Stress management	Understand stress and its management techniques	BB/questionnaire	1		15	3-2-2017	3-2-2017		
16	Spirituality, living peacefully	Understand the importance of living peacefully	BB	1		16	6-2-2017	31-12-2017		
17	**UNIT-2** Challenger disaster		videos	1		17	7-2-2017	7-2-2017		
18	Variety of moral issues	Understand the moral issues.	BB	1		18	9-2-2017	9-2-2017		
19	Why to study engineering ethics	Understand the need to study engineering ethics	BB	1		19	10-2-2017	10-2-2017		
20	Kohlberg's theory	Understand Kohlberg's theory	BB	1		20	13-2-2017	13-2-2017		
21	Gilligan's theory	Understand Gilligan's theory	BB	1		21	14-2-2017	14-2-2017		
22	Engineering ethics and philosophy	Understand the relation between ethics and philosophy	BB	1		22	16-2-2017	08-01-2019		

23	**UNIT-3** Models of professional roles	Understand the the professional roles played by engineers	BB	1		23	20-2-2017	10-01-2019		
24	Virtue ethics	. Understand the Virtue ethics	BB	1		24	2-03-2017	11-01-2019		
25	utilitarianism	Understand the utilitarianism	BB	1		25	3-3-2017	11-01-2019		
26	Duty ethics	Understand the Duty ethics	BB	1		26	6-3-2017	28-01-2019		
27	Right ethics	Understand the Right ethics	BB	1		27	7-3-2017	29-01-2017		
28	Similarities and differences between engineering experiments and standard experiments	Understand about the Similarities and differences between engineering experiments and standard experiments	BB	1		28	9-3-2017	9-3-2017		
29	Engineers as responsible experimenters	Understand about the Engineers as responsible experimenters	BB	1		29	10-3-2017	10-3-2017		
30	Balanced outlook on law	Understand about the Balanced outlook on law	BB	1		30	14-3-2017	14-3-2017		
31	**UNIT-4** Acceptability of risk	Understand about the Analytical methods of testing	BB	1		31	20-3-2017	20-3-2017		

32	Analytical methods of testing	Understand the Analytical methods of testing	**BB**	**1**		**32**	**21-3-2017**	**21-3-2017**		
33	Collegiality, loyalty	Understand about collegiality and loyalty	BB	1		33	23-3-2017	23-3-2017		
34	Respect for authority, collective bargaining	Understand about Respect for authority, collective bargaining	BB	1		34	24-3-2017	24-3-2017		
35	confidentiality	Understand about confidentiality	BB	1		35	27-3-2017	27-3-2017		
36	Conflicts of interest	Understand about Conflicts of interest	BB	1		36	28-3-2017	28-3-2017		
37	Occupational crimes	Understand about Occupational crimes	BB	1		37	31-3-2017	31-3-2017		
38	Rights of engineers	Understand about Rights of engineers	BB	1		38	3-4-2017	3-4-2017		
39	IPR	Understand about IPR	BB	1		39	4-4-2017	4-4-2017		
40	Chernobyl disaster	Understand about Chernobyl disaster	BB/VI DEOS	1		40		6466414-20174-4-20174-4-20173-		
41	Three mile island	Understand about Three mile island	BB/VI DEOS	1		41	7-4-2017	7-4-2017		
42	**UNIT-5** Codes of ethics	Understand about codes of ethics	BB	1		42	10-4-2017	10-4-2017		

43	Codes of ethics	Understand about Codes of ethics	BB	1		43	11-4-2017	11-4-2017		
44	Bhopal gas disaster	Understand about Bhopal gas disaster and ethical implications	BB/Videos	1		44	13-4-2017	13-4-2017		
45	Conflicts of interest	Understand about conflicts of interest	BB	1		45	17-4-2017	17-4-2017		
46	MNC	Understand about ethical issues in MNCs	BB	1		46	18-4-2017	18-4-2017		
47	Environmental ethics	Understand the importance of environmental ethics	BB	1		47	20-4-2017	20-4-2017		
48	Whistle blowing	Understand the concept whistle blowing	BB	1		48	21-4-2017	21-4-2017		
49	Computer ethics	Understand the importance of ethics in computer field	BB/ VIDEOS	1		49	24-4-2017	24-4-2017		
50	Consulting engineers, moral leadership Discussion of old question papers	Understand about role of consulting engineers and about moral leadership	BB	1		50	25-4-2017	25-4-2017		

24/10/2019.

Signature of the Faculty

Signature of the HOD:

Date:

Dr. Surendranath

LESSON PLAN

Academic Year : 2016-2017

Year & Semester : B.Tech / I Year I SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT151 (R16) Physics laboratory

Name of Faculty : Dr. A.G.K.Moorthy / Dr.Surendranath

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review / Remarks (By HOD)
Week1	Introduction to Physics Lab and Explaining the I Cycle of Experiments	Know how to do the Lab and learning to do the experiments	3	3	22-08-2016	22-08-2016	
Week2	I batch – Lissajous figure II batch- Photocell III batch – Tortional pendulum IV batch – wedge method	Understand the usage of concepts of Simple harmonic motion, interference phenomena, and photoelectric effct	3	6	29-08-2016	29-08-2016	
Week3	I batch – Tortional pendulam II batch- Lissajous figures III batch – Photocell IV batch – wedge method batch	Skill and concept are evaluated	3	9	12-09-2016	12-09-2016	
Week4	I batch – wedge method II batch- Tortional pendulum III batch –Lissajous figure	Skill and concept are evaluated for each batch	3	12	27-12-2018	27-12-2018	

	IV batch – Photocell						
Week5	I CYCLE EXPERIMENTS	Skill and concept are evaluated for each batch	3	15	19-09-2016	19-09-2016	
Week6	II CYCLE: Photovoltaic cell, Sono meter, Newtons rings and LCR -Resonance	Understanding the concepts of photo voltaic effect, resonance phenomena in sound and LCR and interference	3	18	03-10-2016	03-10-2016	
Week7	Interchanging the II cycle Experiments to batches	Skill and concept are evaluated for each batch	3	21	17-10-2016	17-10-2016	
Week8	Interchanging the II cycle Experiments to batches	Skill and concept are evaluated for each batch	3	24	24-10-2016	24-10-2016	
Week9	Interchanging the II cycle Experiments to batches	Skill and concept are evaluated for each batch	3	27	31-10-2016	14-02-2019	
Week10	Interchanging the II cycle Experiments to batches	Skill and concept are evaluated for each batch	3	30	07-11-2016	07-11-2016	
Week11	Repetition of experiments in Both cycle	Reviving the basic concepts	3	33	14-11-2016	14-11-2016	
Week12	Modal lab examination	Preparing for laboratory examination	3	36	21-11-2016	21-11-2016	

Signature of the Faculty

Signature of the HOD:

Date:

IT 155 – Object Oriented Programming Lab

Academic Year : 2016-17

Year & Semester : B.Tech / I Year II SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT155 (R16) OBJECT ORIENTED PROGRAMMING LAB

Name of Faculty : Smt.N.Neelima /

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review / Remarks (By HOD)
Week1	Examples On Classes	Implement classes	3	3	28-12-2016	31-12-2016	
Week2	Examples On Constructors, Function Overloading, Static Data Member	Able to understand use of static keyword, constructors and function overloading	3	6	31-12-2016	05-01-2017	
Week3	Examples On Constructors	Familiarize with constructors	3	9	05-01-2017	06-01-2017	
Week4	Examples Of Static Member Functions, Friend Function, Constructors	Able to know the use of friend function	3	12	14-01-2017	19-01-2017	
Week5	Complex Numbers, Rational Numbers Using Friend Function	Implement friend function	3	15	19-01-2017	20-01-2017	
Week6	Inheritance Examples	Implement inheritance	3	18	28-01-2017	02-02-2017	

Week7	Types of Inheritance, Examples	Implement different types of inheritance	3	21	02-02-2017	09-02-2017	
Week8	Inheritance Examples	Implement different types of inheritance	3	24	09-02-2017	16-02-2017	
Week9	Order Of Execution Of Constructors, Destructors, Sample Programs	Able to know the order of execution of constructors and destructors	3	27	16-02-2017	16-02-2017	
Week10	Examples On Multipath Inheritance, Using Virtual Keyword	Implement multipath inheritance	3	30	28-02-2017	02-03-2017	
Week11	Abstract Class, Examples, Lab3	Able to know the use of Abstract class and use of constructors and destructors	3	33	02-03-2017	09-03-2017	
Week12	Create a user defined datatype STRING, allow possible operations by overloading (Relational operators, [], ( ), <<,>>, −)	Able to know relational operator overloading	3	36	09-03-2017	10-03-2017	
Week13	Abstract Class Examples, Define RATIONAL class. Allow possible operations on RATIONALs by overloading operators (Arithmetic, Unary operators,<<,>>)	Able to know the implement Abstract class and use of arithmetic of operator overloading	3	39	10-03-2017	23-03-2017	
Week14	Lab Programs 7.8	Implement run time polymorphism	3	42	23-03-2017	24-03-2017	
Week15	Lab 5,6 and 7	Implement different types of inheritances	3	45	24-03-2017	30-03-2017	
Week16	Abstract Class Lab Programs	Able to know implement Abstract class	3	48	30-03-2017	01-04-2017	

Week17	Lab Programs 6,7	Able to use function templates	3	51	01-04-2017	07-04-2017	
Week18	Lab Programs 8,9	Able to use the class templates	3	54	07-04-2017	07-04-2017	
Week19	Lab Programs 9,10	Able to implement exception handling	3	57	13-04-2017	13-04-2017	
Week20	A program on manipulators, File Streams Examples	Able to understand streams and manipulators	3	60	21-04-2017	21-04-2017	
Week21	Program on FILEs. A program on command line arguments.	Able to know the usage of files	3	63	21-04-2017	21-04-2017	
Week22	Namespaces, Examples	Familiarize with namespaces	3	66	21-04-2017	26-04-2017	

N. Neelima
Signature of the Faculty

A. Srikanth
Signature of the HOD:
Date:

Rangaraya (Mech)

LESSON PLAN

Academic Year : 2016-2017

Year & Semester : B.Tech / I Year II SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT156 (R16) ENGINEERING GRAPHICS LAB

Name of Faculty : T.N.S. Rama Krishna / J. Ranga Raya Chowdary

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review / Remarks (By HOD)
Week1	Introduction To Engineering Graphics And Basic Concepts Of Graphics	Able to understand the importance of graphics and all the basic concepts	4	4	27-12-2016	27-12-2016	
Week1	Introduction To Geometric Constructions And Problems	Able to know how to solve simple construction methods	3	7	30-12-2016	30-12-2016	
Week2	Practice For Geometrical Constructions	Able to know how to solve simple construction methods	4	11	03-01-2017	03-01-2017	
Week2	Introduction To Conics And General Construction Method Of Ellipse, Parabola And	Able to know how conic sections are generated and their constructional methods	3	14	06-01-2017	06-01-2017	

	Hyperbola And Practice						
Week3	Problems On Ellipse And Parabola And Practice For Conics	Able to know how conic sections are generated and their constructional methods	4	18	17-01-2017	17-01-2017	
Week3	Practice For Conics	Able to know how conic sections are generated and their constructional methods	3	21	20-01-2017	20-01-2017	
Week4	Introduction To Engineering Curves And Problems On Cycloids, Involute And Spiral	Able to understand the difference between conics and curves and to construct curves	4	25	24-01-2017	24-01-2017	
Week4	Practice For Curves	Able to understand the difference between conics and curves and to construct curves	3	28	27-01-2017	27-01-2017	
Week5	Introduction, Concepts And Problems On Projection Of Points And Straight Lines(1)	Will understand what is projection and also know how simple objects are projected onto the reference planes	4	32	31-01-2017	31-01-2017	
Week5	Practice For Curves	Able to understand the difference between conics and curves and to construct curves	3	35	03-02-2017	03-02-2017	
Week6	Introduction And Problems On Straight Lines2	Will understand what is projection and also know how simple objects are projected onto the reference planes	4	39	07-02-2017	07-02-2017	
Week6	Practice For Straight Lines2	Will understand what is projection and also know how simple objects are projected onto the reference planes	3	42	10-02-2017	10-02-2017	
Week7	Introduction And Problems On Projections Of Planes And Practice	Able to understand how to project 2D objects onto the reference planes	4	46	14-02-2017	14-02-2017	

Week7	Mid-1 And Projection Of Planes	Able to understand how to project 2D objects onto the reference planes	3	49	03-03-2017	03-03-2017	
Week8	Problems On Projections Of Planes And Practice	Able to understand how to project 2D objects onto the reference planes	4	53	07-03-2017	07-03-2017	
Week8	Practice For Projections Of Planes	Able to understand how to project 2D objects onto the reference planes	3	56	10-03-2017	10-03-2017	
Week9	Concepts And Introduction To Projections Of Solids And Problems	Will understand and able to project 3D objects	4	60	14-03-2017	14-03-2017	
Week10	Practice For Solids - I	Will understand and able to project 3D objects	4	64	21-03-2017	21-03-2017	
Week10	Introduction And Problems On Projections Of Solids 2 And Practice	Will understand and able to project 3D objects	3	67	24-03-2017	24-03-2017	
Week11	Problems And Practice For Projections Of Solids 2	Will understand and able to project 3D objects	4	71	28-03-2017	28-03-2017	
Week11	Practice For Projections Of Solids 2.	Will understand and able to project 3D objects	3	74	31-03-2017	31-03-2017	
Week12	Introduction And Concepts Of Sections And Developments Of Solids. Problems And Practice For The Same Concept	Able to understand how to project a sectioned solid and also develop the sectioned part of the solid by various methods	4	78	04-04-2017	04-04-2017	
Week12	Problems On And Practice For Developments Of Solids	Able to understand how to project a sectioned solid and also develop the sectioned part of the solid by various methods	3	81	07-04-2017	07-04-2017	

Week13	Practice For Sections And Developments Of Solids	Able to understand how to project a sectioned solid and also develop the sectioned part of the solid by various methods	3	84	12-04-2017	12-04-2017	
Week14	Introduction To And Exercise Problems On Orthographic Projections And Practice	Able to analyze a 3D object in different positions and draw the different views of that object	4	88	18-04-2017	18-04-2017	
Week14	Practice For Orthographic Projections	Able to analyze a 3D object in different positions and draw the different views of that object	3	91	21-04-2017	21-04-2017	
Week15	Introduction And Explanation For Isometric Projections And Practice	Will be able to draw a 3D object from different views	4	95	25-04-2017	25-04-2017	

Signature of the Faculty

Signature of the HOD:

Date:

Dr. B.S.R

II/IV B.Tech I Semester

IT 201 - Probability - Statistics & Random Processes

Academic Year : 2018-2019

Year & Semester : B.Tech / II Year I SEM (IT-A Section & IT-B Section)

Branch : Information Technology

Subject Code & Name : IT201 (R16) PROBABILITY , STATISTICS & RANDOM PROCESSES

Name of Faculty : Dr.B.Srinivasa Rao/ Prof. R.Srinivasa Rao

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** Random variables	Understand the concept of Random variable, Discrete random variable, continuous random variable, probability mass function, probability density function	BB	1		1	19-06-2018	18-06-2018		

2	Binomial distribution	Understand the notion of Binomial distribution and to solve the problems on BD		1		2	21-06-2018	19-06-2018		
3	Mean and variance of a probability distribution	Understand the concept of finding the mean and variance of a distribution		1		3	22-06-2018	20-06-2018		
4	Poisson approximation to the binomial distribution.	Understand the relation between Poisson and Binomial distributions		2		5	23-12-2018 24-12-2018	22-12-2018		
5	Continuous random variables,	Understand the concept of continuous random variable		1		6	26-06-2018	24-06-2018		
6	Normal Distribution	Application of Normal distribution for practical problems		2		8	27-06-2018 28-06-2018	25-06-2018		
7	Normal approximation to the binomial distribution.	Understand the application of Normal distribution if the Binomial distribution is tedious		1		9	29-06-2018	27-06-2018		
8	Exponential distribution	Understand the application of exponential distribution in reliability studies		1		10	02-07-2018	30-06-2018		
9	Uniform distribution	Know the concept of UD and its applications		1		11	03-07-2018	01-07-2018		

10	Gamma distribution	Know the concept of Gamma Distribution and its applications		1		12	05-07-2018	03-07-2018		
11	Beta distribution	Know the concept of Beta Distribution and its applications		1		13	06-07-2018	04-07-2018		
12	Weibull distribution.	Understand the application of Weibull distribution in reliability studies		2		15	10-07-2018 11-07-2018	07-07-2018		
13	**UNIT - II** Population and samples	Understand the meaning of Population and sample		1		16	16-07-2018	12-07-2018		
14	Sampling distribution of the mean (σ known)	Understand how to solve the problems means of sampling distributions if σ known		1		17	17-07-2018	15-07-2018		
15	Sampling distribution of the mean (σ unknown)	Understand how to solve the problems means of sampling distributions if σ- unknown		1		18	18-07-2018	16-07-2018		

16	Sampling distribution of variance.	Understand how to solve the problems variance of sampling distributions if		1		19	20-07-2018	18-07-2018		
17	Point estimation,.	Understand the concept of Point estimation in testing of hypothesis		1		20	21-07-2018	20-07-2018		
18	Interval estimation	Understand the concept of interval estimation in testing of hypothesis		1		21	23-07-2018	21-07-2018		
19	Hypothesis concerning one mean	Understand the procedure for solving the problems concerning one-mean		2		23	26-07-2018 27-07-2018	24-07-2018		
20	Hypothesis concerning two means	Understand the procedure for solving the problems concerning two-means		2		25	30-07-2018 31-07-2018	28-07-2018		
21	**UNIT - III** Estimation of variances	Understand the concept of estimation of variances		1		26	01-08-2018	30-07-2018		

22	Hypotheses concerning one variance	Understand the procedure for solving the problems concerning one-varaince		1		27	04-08-2018	02-08-2018		
23	Hypotheses concerning two variances.	Understand the procedure for solving the problems concerning two-variances		1		28	06-08-2018	04-08-2018		
24	Estimation of proportions	Understand the estimation of proportions		1		29	08-08-2018	06-08-2018		
25	Hypothesis concerning one proportion	Understand the procedure for solving the problems concerning one-proportion		1		30	09-08-2018	07-08-2018		
26	Hypothesis concerning several proportions.	Understand the procedure for solving the problems concerning several-proportions		2		32	25-08-2018 29-08-2018	23-08-2018		
27	**UNIT – IV** Classification of Random Processes	Understand the concept of Random process and the classification of random processes		1		33	01-09-2018	29-08-2018		
28	Methods of description of a random process	Understand the description of a random process		1		34	04-09-2018	01-09-2018		

29	Special classes of random processes	Understand the special classes of random processes		1		35	05-09-2018	02-09-2018		
30	Average values of random processes.	Understand how to calculate average values of random process		1		36	11-09-2018	08-09-2018		
31	Auto correlation function and its properties	Understand how to solve the problems related to auto –correlation function and problems based on properties		1		37	13-09-2018	10-09-2018		
32	Cross correlation functions and its properties.	Understand how to solve the problems related to cross–correlation function and problems based on properties		2		39	13-09-2018 14-09-2018	11-09-2018		
33	**UNIT – V** Definition of Gaussian Process	Know the concept of Gaussian Process and to solve the problems related to Gaussian process		2		41	15-09-2018 17-09-2018	12-09-2018		
34	Properties of Gaussian Process	Understand the properties of Gaussian Process	BB/ LCD	1		42	18-09-2018	14-09-2018		
35	Definition of Poisson Process	Know the concept of Poisson Process and to solve the problems	BB	2		45	19-09-2018 25-09-	15-09-2018		

		related to Poisson process					2018			
36	Properties of Poisson Process	Understand the properties of Poisson Process	BB	1		46	26-09-2018	20-09-2018		
37	Mean and Auto correlation of the Poisson Process	Understand how to calculate the mean and auto correlation of the Poisson process	BB	1		47	29-09-2018	24-09-2018		
38	Definition of a Markov chain,	Understand the definition of Markov chain	BB	1		48	01-10-2018	28-09-2018		
39	Chapman-Kolmogorov theorem,	Know the concept of Chapman-Kolmogorov theorem	BB	1		49	03-10-2018	01-10-2018		
40	Classification of states of a Markov chain.	Understand various states of the Markov chain	BB	1		50	05-10-2018	02-10-2018		

Signature of the Faculty

Signature of the HOD:

Date:

IT 202 – Basic Electrical & Electronics Engineering

chandni (EEE)

Academic Year : 2018-2019

Year & Semester : B.Tech / II Year I SEM (ITA Section & ITB Section)

Branch : Information Technology

Subject Code & Name : IT202 (R16) Basic Electrical Engineering

Name of Faculty : Ms. T. R. Chandni

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** Charge, voltage, current,	Understand the various definitions in Electrical energy	BB	1		1	05-07-2018	05-07-2018		
2	power, energy, Circuit concept	Understand the various definitions	BB	1		2	06-07-2018	07-07-2018		
3	Active and passive elements, Resistance, Inductance and Capacitance	Understand the various elements	BB	1		3	09-07-2018	09-07-2018		
4	Energy source, ohm's law, Source Transformation	Understand the various electrical sources	BB	1		4	10-07-2018	10-07-2018		

5	Series And Parallel Combinations, Voltage And Current Division Rules, Problems	Understand the division rules of current and voltage	BB	1		5	12-07-2018	12-07-2018		
6	**UNIT - II** Kvl, Kcl, Mesh Analysis, Supermesh Analysis	Familiarize with KVL, KCL & Mesh Analysis	BB	1		6	16-07-2018	16-07-2018		
7	Nodal Analysis, Supernode Analysis And Problems	Familiarize with Nodal and Supernodal Analysis	BB	1		7	17-07-2018	17-07-2018		
8	Star- Delta Transformation	Understand the Star-Delta Transformation	BB	1		8	19-07-2018	19-07-2018		
9	**Tutorial 1** Star Delta Transformation problems	Familiarize with Star- Delta Transformation	BB		1	9	19-07-2018	19-07-2018		
10	Theorems Introduction, Superposition Theorem	Familiarize with Superposition Theorem	BB	1		10	21-07-2018	12-07-2018		
11	Thevenin's Theorem	Familiarize with Thevenin's Theorem	BB	1		11	23-07-2018	23-07-2018		
12	Norton's Theorem	Familiarize with Norton's Theorem	BB	1		12	26-07-2018	26-07-2018		
13	Maximum Power Transfer Theorem	Familiarize with Maximum Power Transfer Theorem	BB	1		13	28-07-2018	28-07-2018		

14	**Tutorial** 2 Problems	Understanding the Theorems			**1**	**14**	30-07-2018	30-07-2018		
15	**UNIT - III** Ac Fundamentals And Definitions	Understand the alternating quantity	BB	1		15	31-07-2018	31-07-2018		
16	Waveforms, Time Period, Frequency	Understand the alternating quantity definitions	BB	1		16	04-08-2018	04-08-2018		
17	Waveforms, Instantaneous Value	Understand the alternating quantity definitions	BB	1		17	06-08-2018	06-08-2018		
18	Phase Difference, Complex Algebra	Familiarize with Phase Difference and Complex Algebra		**1**		**18**	07-08-2018	07-08-2018		
19	**Tutorial 3**: Problems	Understand the alternating quantinty problems	BB		1	19	09-08-2018	09-08-2018		
20	Dependent Sources	Familiarize with the concept of Dependent Sources	BB	1		20	21-08-2018	21-08-2018		
21	Phasor Representation	Familiarize with Ac Through 3 Phase Star Connection	BB	1		21	21-08-2018	21-08-2018		
22	Series Circuits	Familiarize with Ac Through R,through L	BB	1		22	23-08-2018	23-08-2018		
23	Parallel RLC Circuits	Familiarize with Ac Through Parallel R-l-c	BB	1		23	25-08-2018	25-08-2018		

24	Series RLC Circuits	Familiarize with Ac Through Series R-l-c	BB	1		24	27-08-2018	27-08-2018		
25	**Tutorial 4**: Problems	Understand the Dependent sources	BB		1	25	28-08-2018	28-08-2018		
26	Introduction to 3 phase systems	Understand the 3 phase systems	BB	1		26	30-08-2018	30-08-2018		
27	Star Connection Analysis	Understand the Star connection	BB	1		27	01-09-2018	01-09-2018		
28	Delta Connection Analysis	Understand the Delta connection	BB	1		28	04-09-2018	04-09-2018		
29	**Tutorial 5**: Problems	Understand the star and delta connections	BB		1	29	06-09-2018	06-09-2018		
30	**UNIT - IV** Introduction And Pn Junction Diode	Understand the PN Junction diode	BB	1		30	14-09-2018	14-09-2018		
31	Zener Diode And Types Of Diodes	Understand the Zener diode	BB	1		31	15-09-2018	15-09-2018		
32	Half Wave And Full Wave Rectifiers	Understand the Full wave and Half wave rectifiers	**BB**	1		**32**	17-09-2018	17-09-2018		
33	Clippers And Clampers	Understand the Clippers and clampers	BB	1		33	18-09-2018	18-09-2018		
34	Transistor Introduction And Transistor Operation	Familiarize with Transistor operation	BB	1		34	19-09-2018	19-09-2018		
35	Transistor Configuration And Characteristics	Understand the transistor configuration and Characteristics	BB	1		35	20-09-2018	20-09-2018		

36	Jfet Operation And Characteristics	Understand the JFET	BB	1		36	24-09-2018	24-09-2018		
37	**UNIT – V** Introduction, Need For Biasing, Fixed Bias	Familiarize with biasing and Fixed bias	BB	1		37	24-09-2018	24-09-2018		
38	**Tutorial** 6 Problems,	Understanding biasing concept	BB		1	38	25-09-2018	25-09-2018		
39	Hybrid Parameters And Analysis	Understand the Hybrid Parameters	BB	1		39	27-09-2018	27-09-2018		
40	Feed Back Concept And Feedback Connection Types	Understand the Feed back concept	BB			40	29-09-2018	29-09-2018		
41	Oscillators Introduction	Familiarize with Oscillators	BB	1		41	01-10-2018	01-10-2018		
42	Rc Oscillators Principles And Rc Phase Shift Oscillator	Understand the RC Oscillators	BB	1		42	01-10-2018	01-10-2018		
43	Wein Bridge Oscillator	Understand the Wein bridge Oscillator	BB	1		43	04-10-2018	04-10-2018		
44	Lc Oscillators, Colpitt's Oscillator	Understand the Colpitt's Oscillator	BB	1		44	06-10-2018	06-10-2018		
45	Hartley Oscillator	Understand the Hartley Oscillator	BB	1		45	09-10-2018	09-10-2018		
46	**Tutorial** 7: Problems	Understand the problems on oscillators	BB		1	46	11-10-2018	11-10-2018		

Signature of the Faculty

Signature of the HOD:
Date:

P. Sailaja (ECE)

IT 203 – DIGITAL LOGIC DESIGN

Academic Year : 2018-2019

Year & Semester : B.Tech / II Year II SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT203 (R16) DIGITAL LOGIC DESIGN

Name of Faculty : P.Sailaja / P.Siva Prasad

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** Introduction to Digital Systems	Know the basic digital logic fundamentals	Block Board	1		1	18.06.2018	19.06.2018		
2	Binary Numbers Number-Base Conversions, Octal and Hexadecimal Number systems and their conversions	Know logic fundamentals of number systems	Block Board	2		2	20.06.2018	22.06.2018		
3	Complements of Numbers	Know how to do subtraction	Block Board	2		2	24.06.2018	26.06.2018		
4	Codes: BCD, Excess3, Gray codes	Know logic fundamentals of	Block Board	2		1	28.06.2018	29.06.2018		

		binary codes								
5	**UNIT - II** Boolean Algebra and Logic Gates Introduction									
6	Basic Definitions, Axiomatic Definition of Boolean Algebra	Know Boolean Algebra concepts	Block Board	1			27.06.2018	29.06.2018		
7	Basic theorems and Properties of Boolean Algebra	Know Boolean Algebra Concepts	Block Board	1			02.07.2018	03.07.2018		
8	Boolean functions	Know Boolean Algebra Concepts	Block Board	1			02.07.2018	03.07.2018		
9	Canonical and Standard Forms,	Know how to express the function	Block Board	2			04.07.2018	06.07.2018		
10	Digital Logic Gates	Know the relationship between input and output signals	Block Board	2			04.07.2018	06.07.2018		
11										
12	The Map Method, Four-Variable K-Map,	Know how to simplify the given expression	Block Board	2			09.07.2018	10.07.2018		
13	Five-Variable K-Map	Know how to minimize	Block Board	2			10.07.2018	13.07.2018		
14	Product of sums simplification Don't-Care conditions	Know how to realize	Block Board	1			10.07.2018	13.07.2018		

15	NAND and NOR implementations	Know how to realize	Block Board	1			19.07.2018	20.07.2018		
16	**UNIT - III** Introduction		Block Board	1			19.07.2018	20.07.2018		
17	Combinational Circuits, Analysis Procedure	Design a circuit	Block Board	2			26.07.2018	27.07.2018		
18	General design Procedure	Design a circuit	Block Board	2			01.08.2018	03.08.2018		
19	Binary adder-Subtractor	Design a circuit	Block Board	2			06.08.2018	07.08.2018		
20	Decimal adder, Magnitude Comparator	Design a circuit	Block Board	2			06.08.2018	07.08.2018		
21	Encoders, Decoders	Design a circuit	Block Board	2			23.08.2018	24.08.2018		
22	Multiplexers	Design a circuit	Block Board	2			27.08.2018	28.08.2018		
23	**UNIT - IV** Synchronous Sequential Logic: Introduction	Know the different types of flip-flop	Block Board	1			30.08.2018	31.08.2018		
24	Sequential Circuits, Latches	Design a sequential circuit	Block Board	2			30.08.2018	31.08.2018		

25	Flip-flops, Analysis of Clocked Sequential Circuits	Analyze sequential circuit	Block Board	3			03.09.2018	04.09.2018		
26	State Reduction and Assignment	Know to reduce state diagram	Block Board	2			06.09.2018	07.09.2018		
27	Design Procedure	Design a sequential circuit	Block Board	3			13.09.2018	14.09.2018		
28	**UNIT – V** Register, Left shift register, right Shift register, Bidirectional Shift register, Universal Shift register	Able to know how shift the data and retrieview the data	Block Board	3			04.10.2018	05.10.2018		
29	Counters: Design of Synchronous counters, Ripple counters	Design different types of counters	Block Board	5			26.09.2018	28.09.2018		
30	Ring counter, Johnson counter	Design counters	Block Board	1			05.10.2018	06.10.2018		
31	Memory and Programmable Logic: Read only memory	Learn different types of memories	Block Board	2			07.10.2018	08.10.2018		
32	Programmable logic array, Programmable array Logic (PAL)	Design circuit	Block Board	4			11.10.2018	12.10.2018		

Signature of the Faculty

Signature of the HOD:
Date:

LESSON PLAN

Academic Year : 2018-2019

Year & Semester : B.Tech / II Year I SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT205 (R16) COMPUTER ORGANIZATION

Name of Faculty : Dr.A.Srikrishna

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading /Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** Introduction, Computer Type, Functional Units, Basic Operational Concepts, Bus Structure	Able to familiarize with hardware components of a computer system and various instructions	BB	2		1	18-06-2018	22-06-2018		
2	Performance Multiprocessors And Multicomputers		BB	1		3	23-06-2018	23-06-2018		
3	Numbers, Memory Locations And Addresses, Memory Operations		BB	2		5	06-07-2018	06-07-2018		
4	Register Transfer Notation, Assembly Language Notation, Instruction Execution And Straight Line Sequenceing, Branching, Condition Codes		BB	2		7	12-07-2018	12-07-2018		

5	Addressing Modes		BB	2		9	16-07-2018	16-07-2018		
6	Stacks And Queues		BB	1		10	18-07-2018	18-07-2018		
7	**UNIT – II** Basic Input And Output Operations	Able to familiarize with Assembly language programs and instruction execution	BB	1		11	20-07-2018	20-07-2018		
8	Subroutines		BB	2		13	26-07-2018	26-07-2018		
9	Logic And Shift Operations		BB	1		14	27-07-2018	27-07-2018		
10	Encoding Of Machine Instructions		BB	1		15	28-07-2018	28-07-2018		
11	Basic Processing Unit- Register Transfer		BB	1		16	30-07-2018	30-07-2018		
12	Single Bus Organization		BB	1		17	02-08-2018	02-08-2018		
13	Execution Of Complete Instruction		BB	1		18	03-08-2018	03-08-2018		
14	Multiple Bus Organisation, Hardwired Control Unit		BB	2		20	06-08-2018	06-08-2018		
15	**UNIT III** Hardwired Control Unit	Students will know the design of control unit and various data transfer schemes	BB	2		22	08-08-2018	08-08-2018		
16	Microprogrammed Control Unit		BB	2		24	09-08-2018	09-08-2018		
17	Micro Instructions With Next-address Field		BB	1		26	24-08-2018	24-08-2018		
18	Wide-branch Addressing		BB	1		26	27-08-2018	27-08-2018		
19	Prefetching Microinstructions		BB	1		27	30-08-2018	30-08-2018		
20	Input And Output Organization, Interrupt, Interrupt Hardware		BB	1		28	31-08-2018	31-08-2018		
21	Enabling And Disabling Interrupts,handling Multiple Interrupts, Vectored Interrupts,interrupt Nesting, Simultaneous Requests		BB	2		30	17-09-2018	17-09-2018		
22	DMA, Buses		BB	1		31	18-09-2018	18-09-2018		

23	**UNIT IV** Computer Arithmatic: Addition Of Signed Numbers	Students will know the design of ALU and pipelining operations	BB	1		32	19-09-2018	19-09-2018		
24	Carry Look Ahead Adder		BB	1		33	20-09-2018	20-09-2018		
25	Multiplication Of Positive Numbers		BB	2		35	24-09-2018	24-09-2018		
26	Booths Algorithm		BB	2		37	26-09-2018	26-09-2018		
27	Integer Division		BB	1		38	28-09-2018	28-09-2018		
28	Floating Point Numbers And Operations		BB	2		40	29-09-2018	29-09-2018		
29	Pipelining Basic Concepts		BB	1		41	29-09-2018	29-09-2018		
30	Data Hazards,instruction Hazards		BB	2		43	01-10-2018	01-10-2018		
31	Influence Of Instruction Sets And Data Path Consideration		BB	1		44	03-10-2018	03-10-2018		
32	**UNIT V** The Memory System- Basic Concepts, Internal Organisation Of Semiconductor Ram Chip	Able to familiarize with memory hierarchy	BB	2		46	04-10-2018	04-10-2018		
33	Static Memories, asynchronous DRAMs		BB	2		48	05-10-2018	05-10-2018		
34	Synchronous Dynamic Ram, Structure Of Larger Memories		BB	2		50	06-10-2018	06-10-2018		
35	RAM Bus , Memory Hierarchy, ROM- Variants, Cache Memory		BB	2		52	08-10-2018	08-10-2018		
36	Mapping Functions And Replacement Algorithm		BB	1		53	08-10-2018	08-10-2018		
37	Virtual Memory		BB	2		55	10-10-2018	10-10-2018		

A. Srikrishna

Signature of the Faculty

A. Srikrishna

Signature of the HOD:

Date:

IT 206 – Discrete Mathematical Structures

Academic Year : 2018-2019

Year & Semester : B.Tech / II Year II SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT206 (R16) DISCRETE MATHEMATICAL STRUCTURES

Name of Faculty : Smt. N. Neelima / Sri. K. Srinivasa Rao

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** **Foundations:** Sets, Relations and Functions	Discussed the course outcomes and syllabus. Introduce the concepts of sets, relation and functions	BB	3		3	03-07-2018	05-07-2018		
2	Methods of Proof and Problem Solving Strategies	Understand the various problem solving strategies	BB	2		5	04-07-2018	05-07-2018		
3	Fundamentals of Logic, Logical Inferences	Understand the fundamentals of logics	BB	1		6	06-07-2018	06-07-2018		

4	Methods of Proof of an Implication	Understand the various methods of implication proofs	BB	2		8	06-07-2018	11-07-2018		
5	**Foundations:** First Order Logic & Other Methods of Proof, Rules of Inference for Quantified Propositions	Understand different quantified proposition solving strategies	BB	1		9	12-07-2018	12-07-2018		
6	Mathematical Induction	Understand different methods of mathematical induction proofs	BB	3		12	12-07-2018	15-07-2018		
7	**UNIT-II** Elementary Combinatorics: Basics of Counting	Familiarize with different counting methods	BB	3		15	21-07-2018	27-07-2018		
8	Combinations and Permutations	Understand different techniques to solve permutation and combination problems	BB	3		18	25-07-2018	27-07-2018		
9	Enumeration of Combinations and Permutations	Familiarize with different methods of permutations and combinations	BB	2		20	27-07-2018	28-07-2018		
10	**Elementary Combinatorics:** Enumerating Combinations and Permutations with Repetitions	Understand the combinations and permutations methods	BB	2		22	27-07-2018	28-07-2018		
11	Enumerating Permutations with Constrained	Understand the combinations and	BB	2		24	28-07-2018	29-07-2018		

	Repetitions.	permutations methods								
12	**UNIT-III** Recurrence Relations: Generating Functions of Sequences	Understand different problems od generating functions	BB	2		26	03-08-2018	04-08-2018		
13	Calculating Coefficients of Generating Functions	Understand problems of coefficients of generating functions	BB	2		28	22-08-2018	23-08-2018		
14	Solving Recurrence Relations by Substitution	Implement substitution method to solve recurrence relation	BB	2		30	25-08-2018	26-08-2018		
15	Solving Recurrence Relations by Generating Functions	Implement Generating Function method to solve recurrence relation	BB	2		32	29-08-2018	30-08-2018		
16	**Recurrence Relations:** The Methods of Characteristic Roots	Implement characteristics roots method to solve recurrence relations	BB	2		34	01-09-2018	06-09-2018		
17	Solutions of Inhomogeneous Recurrence Relations	Understand solution for non homogeneous recurrence relation	BB	2		36	06-09-2018	07-09-2018		
18	**UNIT-IV** Relations and Digraphs: Relations and Directed Graphs	Understand relations on directed graphs	BB	3		39	12-09-2018	14-09-2018		
19	Relations and Digraphs: Relations and Directed	Identify different relations on digraphs	BB	3		42	14-09-2018	20-09-2018		

	Graphs									
20	Relations and Digraphs: Equivalence Relations	Understand equivalence relations on digraphs	BB	3		45	20-09-2018	26-09-2018		
21	Operations on Relations	Understand different problems in relations	BB	3		48	28-09-2018	29-09-2018		
22	**UNIT-V** Ordering Relations: Ordering Relations	Familiarize Hasse diagram representation of set	BB	2		50	03-10-2018	04-10-2018		
23	Lattices and Enumerations	Understand the concept of lattice	BB	2		52	5-10-2018	08-10-2018		
24	Paths and Closures, Directed Graphs and Adjacency Matrices	Understand the basic concepts in directed graphs	BB	2		54	08-10-2018	11-10-2018		
25	**Graphs:** Basic Concepts, Isomorphisms and Subgraphs	Understand subgraphs and isomorphic graphs	BB	2		56	11-10-2018	12-102018		
26	Planar Graphs, Euler's Formula, Multigraphs and Euler Circuits	Understand the different representations of graphs	BB	2		58	11-10-2018	12-10-2018		
27	Hamiltonian Graphs, Chromatic Numbers, The Four Color Problem	Understand the different representations of graphs	BB	2		60	11-10-2018	12-10-2018		

N. Neelima
Signature of the Faculty

A. Sukeerthi
Signature of the HOD:
Date:

LESSON PLAN

(Dr. A.V. Ramakrishna Maths)

Academic Year : **2018-2019**

Year & Semester : **B.Tech / II Year II SEM (ITA Section & ITB Section)**

Branch : **Information Technology**

Subject Code & Name : **IT207 (R16) Number Theory & Algebra**

Name of Faculty : **Dr.A.V.Ramakrishna**

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	Introduction	Know the main objective of the course	BB	1		1	26-11-2018	26-11-2018		
2	Divisibility	Know divisible aspects	BB	1		2	01-12-2018	01-12-2018		
3	Division Algorithm	Understand division, algorithm	BB	1		3	03-12-2018	03-12-2018		
4	Problems	Solve related problems	BB	1		4	04-12-2018	04-12-2018		
5	God Of Integers	Know the concept of GCD.	BB	1		5	05-12-2018	05-12-2018		

6	Theorems On God	Understand theorems on GCD	BB	1		6	10-12-2018	10-12-2018		
7	Problems	Solve related problems	BB	1		7	11-12-2018	11-12-2018		
8	Euclidean Algorithm	Understand the usage Euclidean algortithm	BB	1		8	12-12-2018	12-12-2018		
9	Least Common Multiple	Familiarize LCM concept	BB	1		9	17-12-2018	17-12-2018		
10	Problems	Solve related problems	BB	1		10	18-12-2018	18-12-2018		
11	Primes	Know the prime number	BB	1		11	19-12-2018	19-12-2018		
12	Theorems On Primes	Understand theorems on primes	BB	1		12	20-12-2018	20-12-2018		
13	Problems	Solve related problems	BB	1		13	26-12-2018	26-12-2018		
14	Congruences	Understand the concept of congruence	BB	1		14	27-12-2018	27-12-2018		
15	Properties And Problems On Congruence	Know the properties of congruence	BB	1		15	29-12-2018	29-12-2018		
16	Complete And Reduced Systems	Understand systems of numbers	BB	1		16	31-12-2018	31-12-2018		
17	euler's phi-function	Define Euler's function	BB	1		17	02-01-2019	02-01-2019		
18	fermat's Theorem	Study Fermat's theorem	BB	1		18	05-01-2019	05-01-2019		

19	Euler's theorem	Study Euler's theorem	BB	1		19	07-01-2019	07-01-2019		
20	problems	Solve related problems	BB	1		20	08-01-2019	08-01-2019		
21	Wilson's Theorem	Study Wilson's theorem	BB	1		21	09-01-2019	09-01-2019		
22	Congruence Of Degree 1	Solve problems on degree1 congruence	BB	1		22	21-01-2019	21-01-2019		
23	Problems	Solve related problems	BB	1		23	22-01-2019	22-01-2019		
24	Chinese Remainder Theorem	Study Chinese remainder theorem	BB	1		24	23-01-2019	23-01-2019		
25	Problems	Solve related problems	BB	1		25	28-01-2019	28-01-2019		
26	Problems	Solve related problems	BB	1		26	29-01-2019	29-01-2019		
27	Group Theory	Define group	BB	1		27	06-02-2019	06-02-2019		
28	Examples Of Groups	Know various examples of groups	BB	1		28	09-02-2019	09-02-2019		
29	Problems	Solve problems on groups	BB	1		29	11-02-2019	11-02-2019		
30	Symmetric And Dihedral Groups	Know some special groups	BB	1		30	12-02-2019	12-02-2019		

31	Subgroups	Define subgroup	BB	1		31	13-02-2019	13-02-2019		
32	Normal Subgroups	Know the concept of normal subgroup	BB	1		32	16-02-2019	16-02-2019		
33	Group Homomorhisms	Understand homomorphism of groups	BB	1		33	18-02-2019	18-02-2019		
34	Congruence Relations	Know congruence of groups	BB	1		34	19-02-2019	19-02-2019		
35	Quotient Groups	Construct quotient group	BB	1		35	23-02-2019	23-02-2019		
36	Lagrange's Theorem	Study Lagrange's theorem	BB	1		36	25-02-2019	25-02-2019		
37	Cyclic Groups	Understand cyclic groups	BB	1		37	26-02-2019	26-02-2019		
38	Direct Products And Abelian Groups Theorem	Classify all abelian groups upto isomorphism	BB	1		38	27-02-2019	27-02-2019		
39	Ring Theorey	Define ring	BB	1		39	02-03-2019	02-03-2019		
40	Theorems On Rings	Understand ring theory concepts	BB	1		40	02-03-2019	02-03-2019		
41	Subrings And Ideals	Know subring and ideal	BB	1		41	05-03-2019	05-03-2019		
42	Homo Morphism And Quotient Rings	Know homomorphism of rings	BB	1		42	06-03-2019	06-03-2019		

43	Principal And Maximal Ideals	Understand principal and maximal ideals	BB	1		43	11-03-2019	11-03-2019		
44	Polynomial Rings	Study polynomial rings	BB	1		44	12-03-2019	12-03-2019		
45	Gcd Of Polynomials	GCD of polynomials	BB	1		45	13-03-2019	13-03-2019		
46	Integral Domains And Fields	Define characteristic equation	BB	1		46	18-03-2019	18-03-2019		
47	Prime Fields Theorem	Understand eigenvalues and eigenvectors	BB	1		47	19-03-2019	19-03-2019		
48	Finite Fields	Solve problems of eigenspaces	BB	1		48	20-03-2019	20-03-2019		
49	Cyclotomic And Irreducible Polynomials	Solve related problems	BB	1		49	23-03-2019	23-03-2019		
50	Problems	Define some special matrices	BB	1		50	25-03-2019	25-03-2019		

Signature of the Faculty

Signature of the HOD:

Date:

IT208 (R16) MICROPROCESSORS INTERFACING

PSivaprasad (ECE)

cademic Year : 2018-2019

Year & Semester : B.Tech / II Year II SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT208 (R16) MICROPROCESSORS INTERFACING

Name of Faculty : P. Siva Prasad / P.Bala Prasanthi

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** Introduction To microprocessors and 8086 internal architecture	Introduce the main objective of the course and explain the Architecture of 8086 microprocessor	BB	3		4	28-11-2018	01-12-2018		
2	Assembly language program development tools	Understand how assembly language program gets executed	LCD	2		2	03-12-2018	04-12-2018		
3	8086 Addressing modes	Understand the addressing modes of 8086 microprocessor	BB	2		1	05-12-2018	05-12-2018		

4	Introduction to programming the 8086	Understand how to write assembly language programs	BB	2		2	11-12-2018	11-12-2018		
5	8086 Instruction descriptives	Understand how to use the different instructions of 8086 to write the programs	BB	3		4	17-12-2018	15-12-2018		
6	8086 Assembler Directives	Understand how to use the different assembler directives in tasm software	BB	2		2	19-12-2018	18-12-2018		
7	**UNIT – II:** 8086 String Instructions	Understand how to use the string instructions of 8086 to write the programs	BB	2		2	24-12-2018	22-12-2018		
8	Programs using strings	Implement the programs on strings using 8086 string instructions	LCD	1		1	26-12-2018	26-12-2018		
9	8086 call, ret, push and pop instructions and 8086 stack	Understand the importance of stack	BB	2		2	31-12-2018	31-12-2018		
10	Passing parameters to procedures	Understand how to work with functions in assembly language programming	BB	2		1	03-01-2019	02-01-2019		
11	Assembly language programs using procedures and Near procedure with example	Implement the programs on procedures using 8086 instructions	LCD/BB	2		1	07-01-2019	05-01-2019		
12	Reentrant and recursive procedures	Understand how to work with functions in assembly language programming	BB	1		1	08-01-2019	07-01-2019		

20-02-2019	20-02-2019	
23-02-2019	23-02-2019	
05-03-2019	27-02-2019	
06-03-2019	02-03-2019	
11-03-2019	06-03-2019	
12-03-2019	11-03-2019	
16-03-2019	12-03-2019	
19-03-2019	13-03-2019	
23-03-2019	18-03-2019	

13	**UNIT – III:** 8086 Pin Diagram	Understand the different pins of 8086 microprocessor	BB	2		2	21-01-2019	08-01-2019		
14	8086 Minimum mode configuration	Understand how the 8086 microprocessor works in minimum mode configuration	BB	2		2	23-01-2019	22-01-2019		
15	8086 Maximum mode configuration	Understand how the 8086 microprocessor works in minimum mode configuration	LCD	1		1	28-01-2019	22-01-2019		
16	System Bus timing, Bus activities during the Read and Write Machine Cycles	Understand how the 8086 microprocessor can do read and write operations with the help of timing diagrams	BB	1		2	29-01-2019	28-01-2019		
17	Address Decoder Concepts	Understand how to decode the address for interfacing	BB	1		1	06-02-2019	29-01-2019		
18	ROM and RAM Decoder, Port Decoder	Implement the address map to interface RAM,ROM and Port with 8086 microprocessor	BB	4		5	16-02-2019	13-02-2019		
19	8086 Memory Banking	Understand how the banking memory of plays the key role in 8086 based systems	BB	1		1	18-02-2019	16-02-2019		

20	**UNIT – IV:** 8086 Interrupt types	Understand the importance of interrupts in programming	BB	2		2	20-02-2019	20-02-2019		
21	Software and Hardware Interrupts	Understand the different interrupts existed	BB	1		1	23-02-2019	23-02-2019		
22	8259 Priority Interrupt Controller	Understand the internal diagram of 8259 priority interrupt controller	BB	5		4	05-03-2019	27-02-2019		
23	An 8086 Interrupt response example for Type-0	Implement the interrupt service routine for divide by zero interrupt	BB	1		1	06-03-2019	02-03-2019		
24	DMA Controller	Understand the concept of direct memory access	BB	1		1	11-03-2019	06-03-2019		
25	**UNIT – V:** 8255A Internal Block Diagram and System Connections	Understand the internal diagram of 8255 which can able to access I/O ports	BB	1		1	12-03-2019	11-03-2019		
26	Constructing and sending 8255A control words	Implement the command word for 8255A for different cases	BB	2		1	16-03-2019	12-03-2019		
27	8255A Operation modes	Understand the different modes of 8255A	BB	2		1	19-03-2019	13-03-2019		
28	Keyboard circuit connections and interfacing	Understand the internal diagram of 4*4 matrix keyboard and its connections	BB	2		1	23-03-2019	18-03-2019		

29	Software Keyboard Interfacing	Implement the assembly language program to detect the key press and identify it	BB	2		1	26-03-2019	19-03-2019		
30	Interfacing to alphanumeric displays	Understand different types of displays and how to interface it for 8086	BB	1		1	27-03-2019	20-03-2019		

Signature of the Faculty

Signature of the HOD:

Date:

IT210 (R16) DATABASE MANAGEMENT SYSTEMS

Academic Year : 2018-2019

Year & Semester : B.Tech / II Year II SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT210 (R16) DATABASE MANAGEMENT SYSTEMS

Name of Faculty : Dr.M.Pompapathi / Smt.N.Neelima

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** Introduction To Databases, Example, Characteristics Of Databases	Introduce the main objective of the course and explain the fundamental concepts of database systems	BB	1		1	27-11-2018	29-11-2018		
2	Database Users Categorization - Actors On The Scene, Workers Behind The Scene	Understand the various users in DB environment	BB	2		3	29-11-2018	30-11-2018		
3	Advantages Of D B M S Approach	Compare files concepts with d b m s	BB	1		4	30-11-2018	03-12-2018		

4	Database Applications, Classifications Of D B M S	Understand the various applications of DBs based on their classification	LCD	1		5	03-12-2018	04-12-2018		
5	Overview Database Languages And Architectures - Data Models, Schema , And Database State	Understand the Database Languages And Architectures	BB	2		7	04-12-2018	06-12-2018		
6	Three-schema Architecture, Data Independence, and Database Languages	Understand DBMS architecture, DB languages	BB	2		9	06-12-2018	07-12-2018		
7	SQL- Create,Alter, Drop Truncate, Delete,update,rename Statements In S Q L	Familiarize with creation, maintanace of DB with SQL	BB/ LCD	3		12	07-12-2018	10-12-2018		
8	S Q L - Special Comparison Operators, Null Value	Understand the usage of Comparison Operators, Null Value	BB/ LCD	1		13	10-12-2018	11-12-2018		
9	Datetime Functions And Conversion Function In S Q L	Familiarize with Datetime and Conversion Functions	BB/ LCD	2		15	11-12-2018	13-12-2018		
10	General Functions In S Q L	Understand the usage of General Functions In S Q L	BB/ LCD	1		16	13-12-2018	14-12-2018		
11	Group Functions In S Q L	Understand the usage of Group Functions In S Q L	BB/ LCD	1		17	17-12-2018	18-12-2018		

12	Advance Query Statements In S Q L - Set Operators, Joins In S Q L	Understand the usage of JOINS, and set operations	BB/ LCD	2		19	18-12-2018	20-12-2018		
13	D B M S Interfaces, and Database System Environment	Understand various interfaces during DB interaction	BB	1		20	20-12-2018	21-12-2018		
14	**Tutorial 1: Centralized and Client/server Architectures For Database Systems, and Classification Of D B M S**	**Understand various DBMS architectures**	**LeD: Learning by Dialogue: NPTEL Videos**		**1**	**21**	**21-12-2018**	**27-12-2018**		
15	**UNIT - II** Conceptual Data Modelling Using Entities And Relations - Phases In Database Design Process, And Introduction To E R Model	Understand and model database requirements using Conceptual Data Model	BB/LCD	1		22	27-12-2018	28-12-2018		
16	Subqueries In S Q L	Implement SQL queries using subqueries	LCD	2		24	28-12-2018	31-12-2018		
17	Correlated Subqueries	Implement SQL queries using correlated subqueries	LCD	1		25	31-12-2018	31-12-2018		
18	**Tutorial 2: SQL concepts and example queries**	**Understand the usage SQL concepts in writing DB retrieval requests.**	**LeD: Learning by Dialog**		**1**	**26**	**31-12-2018**	**02.01.2019**		

			ue: NPTEL Videos							
19	E R - Diagrams For Company Database	Construct ER model for Company Database	BB	1		27	31-12-2018	04-01-2019		
20	E R Model - Rolenames,degrre Of R T, Constraints For R Ts, And Structural Constraints With E R Diagrams : Sample Company Database Application	Understand basic concpets in ER model	BB	1		28	04-01-2019	07-01-2019		
21	E R Model -for University Database	Construct ER model for university Database	BB	1		29	07-01-2019	07-01-2019		
22	Views In S Q L, and Schema Change Statements In S Q L	Use views and schema change statements	LCD	1		30	07-01-2019	08-01-2019		
23	**UNIT - III** Relational Model - Introduction	Understand the Relational Model concepts	BB	1		31	08-01-2019	10-01-2019		
24	Constraints On Relational Data Model	Specify Constraints On Relational Databases.	BB	1		32	10-01-2019	11-01-2019		
25	Use Of Exists Operator and examples	Use Exists Operator in SQL queries	BB	1		33	11-01-2019	11-01-2019		
26	Relational Mapping Algorithm	Design and Identify DB relations using mapping algorithm through ER model	BB	1		34	25-01-2019	28-01-2019		

27	Dealing With Update Operations Violation With Relational Databases	Understand Update Operations and constraint Violation With Relational Databases	BB/ LCD	1		35	28-01-2019	29-01-2019		
28	Introduction Relational Algebra - Basic Operations and Notations	specify retrieval requests in RA using basic operations	BB	1		36	29-01-2019	06-02-2019		
29	Formal Relational Languages: Unary Relation Algebra Operation - Select, Project, And Rename	Implement retrieval requests in RA	BB	1		37	06-02-2019	07-02-2019		
30	Relational Algebra Operation From Set Theory, Join And Its Variants, Division Operation, And Complete Set Of Relational Algebra Operations	specify retrieval requests in RA join operations	BB	1		38	07-02-2019	08-02-2019		
31	Relational Calculus	specify retrieval requests in DRC & TRC	BB	2		40	08-02-2019	14-02-2019		
32	**Tutorial 3 : RA and RC**	**specify retrieval requests in Relational algebra and relational calculus**	**LeD: Learning by Dialogue: NPTEL Videos**		**1**	**41**	**08-02-2019**	**14-02-2019**		

33	**UNIT - IV** Database Design Theory - Informal Design Guidelines, And Functional Dependency	Understand the Design Guidelines of RDBMS	BB/ LCD	1		42	14-02-2019	15-02-2019		
34	Functional Dependency : Inference Rules And Algorithm To Find Closure Set	Understand Functional Dependency and Inference Rules	BB/ LCD	1		43	15-02-2019	19-02-2019		
35	F D : Algorithm To Find Minimal Cover, And To Find Key For The Given Relation R	Familiarize with algorithms in FD for Minimal Cover and identify a KEY for relation	BB	1		44	19-02-2019	21-02-2019		
36	Data Normalization :introduction , First Normal Form, and Second Normal Form	Understand the normalization process and INF	BB	1		45	21-02-2019	22-02-2019		
37	Second Normal Form	Understand FFD and 2NF	BB	1		46	22-02-2019	26-02-2019		
38	Third Normal Form, And B C N F	Understand 3NF and BCNF	BB	2		48	26-02-2019	28-02-2019		
39	M V D , Fourth Normal Form, J D, And Fifth Normal Form	Understand MVd and 4NF, PJNF	BB	1		49	28-02-2019	01-03-2019		
40	Relational Decomposition Algorithms – Dependency Preservation	Understand Relational Decomposition Algorithms	BB	1		50	01-03-2019	02-03-2019		
41	Relational Decomposition Algorithms - Non - Additive Join Property	Understand Relational Decomposition Algorithms	BB	1		51	02-03-2019	05-03-2019		

42	Algorithms For Relational Database Schema Design, Handling Nulls And Dangling Tuples In Relation.	Understand Algorithms For Relational Database Schema Design	BB	1		52	05-03-2019	07-03-2019		
43	**Tutorial 4: DB Normalization**	**Design DB relations using normalization concepts**	**LeD: Learning by Dialogue: NPTEL Videos**		**1**	**53**	**05-03-2019**	**08-03-2019**		
44	**UNIT - V** Foundations of D B Transaction Processing - Introduction To Transactions, Need Of Concurrency, Need Of Recovery	Understand basics of Transaction Processing	BB	1		54	07-03-2019	09-03-2019		
45	Schedules and Introduction	Understand schedule in a transaction concepts	BB/ LCD	1		55	08-03-2019	11-03-2019		
47	Characterizing Schedules Based On Recoverability	Understand Schedules Based On Recoverability	BB/ LCD	1		56	11-03-2019	12-03-2019		
48	Characterizing Schedules Based On Serializability	Understand Schedules Based On Serializability	BB/ LCD	1		57	14-03-2019	19-03-2019		
49	Transaction Support In S Q L	Understand Transaction Support In S Q L	BB/ LCD	1		58	19-03-2019	22-03-2019		

50	Concurrency Control Techniques- Lock based and TIMESTAMP based concurrency control methods	Understand Lock based concurrency control methods	BB/ LCD	3		61	19-03-2019	24-03-2019		
51	Multi version and validation based concurrency control methods	Understand Multi version and validation based concurrency control methods	BB/ LCD	1		62	19-03-2019	25-03-2019		
52	Database Recovery concepts		BB/ LCD	2		64	20-03-2019	26-03-2019		

M. Ramprasad.

Signature of the Faculty

A. Srikrishna

Signature of the HOD:
Date:

IT211 (R16) JAVA PROGRAMMING

Academic Year : 2018-2019

Year & Semester : B.Tech / II Year II SEM (ITA Section)

Branch : Information Technology

Subject Code & Name : IT211 (R16) JAVA PROGRAMMING

Name of Faculty : Sri G.SRINIVASA RAO

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** Introduction to Object oriented programming and introduction to java.	Introduce main concepts of oops and histoty of java programming language.	BB	1		1	25-11-2018	26-11-2018		
2	Structure of java program	Understand the java program structure for program development.	BB	1		2	26-11-2018	27-11-2018		
3	Features of java and simple java programs	Understand various features of java, and development of simple java programs.	BB	2		4	27-11-2018	30-11-2018		

4	Java Constants and Data Types	Understand java constants and Data Types	BB	1		5	30-11-2018	01-12-2018		
5	Operators in Java	Understand the different Java operators	BB	1		6	01-12-2018	04-12-2018		
6	Control Structures and Programs	Understand Java Control Structures and program development	BB	1		7	04-12-2018	07-12-2018		
7	Arrays in Java	Introduce declaration and usage of Java	BB	1		8	07-12-2018	10-12-2018		
8	Array of Objects and Programs on Arrays	Understand the developing programs using arrays	BB	1		9	10-12-2018	11-12-2018		
9	String and String Buffer classes	Understand Programs using String and String Buffer classes	BB	1		10	11-12-2018	18-12-2018		
10	Concept of method overloading	Understand programs using method overloading	BB	1		11	18-12-2018	21-12-2018		
11	Constructors , Constructor Overloading ,Static keyword and Inner Classes	Understand developing programs using Constructors , static keywords and inner classes	BB	1		12	21-12-2018	22-12-2018		
12	**UNIT - II** Inheritance in Java	Understand the programs using concept of inheritance	BB	1		13	22-12-2018	27-12-2018		
13	Super keyword and method overriding	Understand usage of super keyword and concept of method overriding	BB	1		14	27-12-2018	28-12-2018		

14	Abstract and Final keyword	Understand usage of Abstract and Final keywords	BB	1		15	28-12-2018	03-01-2019		
15	Constructors in Inheritance and Interfaces	Understand the concept of interfaces	BB	1		16	03-01-2019	08-01-2019		
16	Implementation of Multiple Inheritance in Java	Understand implementation of multiple interfaces using interfaces	BB	1		17	08-01-2019	10-01-2019		
17	Dynamic method dispatch , Object Class	Understand the concept of dynamic method dispatch	BB	1		18	10-01-2019	11-01-2019		
18	Introduction of Packages in Java	Understand the creation of packages	BB	1		19	11-01-2019	22-01-2019		
19	Package Creation and usage of Packages	Understand the creation and usage of packages	BB	1		20	22-01-2019	23-01-2019		
20	Access protection in packages	Understand developing package programs using access protection keywords	BB	2		22	23-01-2019	24.01.2019		
21	Java variables and Scope of variables	Understand declaration and usage of different types of Java variables and their scope	BB	1		23	24.01.2019	25-01-2019		

22	**UNIT - III** Exception Handling in Java	Understand the usage of Exception Handling keywords	BB	1		24	25-01-2019	29-01-2019		
23	Programs using Exception handling keywords	Understand developing programs using Exception handling mechanism	BB	1		25	29-01-2019	07-02-2019		
24	Multi threading in java	Understand developing programs using Multiple threads	BB	1		26	07-02-2019	08-02-2019		
25	Synchronous Keyword and introduction to applets	Understand the usage of Synchronous keyword	BB	1		27	08-02-2019	09-02-2019		
26	Applet tag and Applet programs	Understand developing applet programs	BB	1		28	09-02-2019	09-02-2019		
27	Passing Parameters to an Applet, IO Basics	Understand Applet programming by passing parameters from html file, programs on IO basics	BB	3		31	09-02-2019	12-02-2019		
28	Graphic class methods	Understand to applet programs for drawing different shapes	BB	1		32	12-02-2019	14-02-2019		
29	**UNIT - IV** AWT Components	Understanding different AWT components	BB	1		33	14-02-2019	16-02-2019		
30	Event Classes and Listener Interfaces	Understand event class and Listener Interface methods	BB	1		34	16-02-2019	21-02-2019		

31	Layout Managers	Understand usage of Layout managers frames and applets	BB	1		35	21-02-2019	23-02-2019		
32	Event Handling using different Listeners	Understand event handling mechanism using Listener Interfaces	BB	1		36	23-02-2019	26-02-2019		
33	Programs using frame and applet classes for event handling	Understand programs using frame and applet classes for event handling	BB	1		37	26-02-2019	28-02-2019		
34	Event Handling using Adaptor Classes	Understand event handling mechanism using Adaptor Classes	BB	1		39	28-02-2019	01-03-2019		
35	**UNIT - V** Swing Components	Understand swing Components for development of Windows	BB	1		40	01-03-2019	02-03-2019		
36	Swing Components : JTree , JTable , JTabbedPane	Understand program using swing components JTree , JTable and JTabbedPane	BB	1		41	02-03-2019	05-03-2019		
37	Programs on Menus and ScrollBars	Understand development of program using Menus and ScrollBars	BB	1		42	05-03-2019	07-03-2019		
38	Introduction to Networking	Understand the Networking classes in java	BB	1		43	07-03-2019	08-03-2019		

39	TCP client server Communication	Understand the application for TCP Client Server Communication	BB	1		44	08-03-2019	12-03-2019		
40	UDP Client Server Communication	Understand UDP Client Server Communication	BB	1		45	12-03-2019	14-03-2019		
41	Networking Classes and Programs	Understand developing programs using Networking Classes	BB	1		46	14-03-2019	22-03-2019		
42	Introduction to ODBC and JDBC Steps to connect the database and access the data	Understand the architecture of JDBC and ODBC , steps for jdbc Connectivity	BB	2		48	22-03-2019	23-03-2019		
43	JDBC drivers and Programs	Understand the programs and drivers on JDBC to perform different operations on database	BB	3		51	23-03-2019	25-03-2019		

Signature of the Faculty

Signature of the HOD:

Date:

IT212 (R16) OPERATING SYSTEM

Academic Year : 2018-2019
Year & Semester : B.Tech / II Year II SEM (ITA Section & ITB SECTION)
Branch : Information Technology
Subject Code & Name : IT212 (R16) OPERATING SYSTEM
Name of Faculty : Smt. N. Neelima / Sri. M.V. Bhujanga Rao

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** **Introduction:** What Operating Systems Do, Operating-System Structure	Introduce the main objective of the course and explain the fundamental concepts of operating system	BB	1		1	26-11-2018	26-11-2018		
2	Operating-System Operations	Understand the various operations performed in the operating system environment	BB	1		2	28-11-2018	28-11-2018		
3	Process Management, Memory Management, Storage Management, Protection and Security	Understand of managing process, memory & storage and protect from	BB	1		3	29-11-2018	29-11-2018		

		unauthorized users.								
4	Kernel Data Structures	Understand the various data structures in operating system environment	LCD	1		4	03-12-2018	03-12-2018		
5	**System Structures:** Operating-System Services, User and Operating-System Interface	Understand different services provided by operating system	BB	2		6	04-12-2018	06-12-2018		
6	System Calls, Types of System Calls	Understand different types of system calls	BB	2		8	13-12-2018	14-12-2018		
7	Operating-System Structure	Familiarize with different structures of operating system	BB/ LCD	1		9	15-12-2018	15-12-2018		
8	Process Concept: Process Concept, Process Scheduling	Understand different states of process and scheduling queues	BB/ LCD	1		10	20-12-2018	20-12-2018		
9	Operations on Processes, Inter process Communication	Familiarize with different process communication methods	BB/ LCD	2		12	21-12-2018	22-12-2018		
10	**UNIT-II Multithreaded Programming:** Overview of Multithreading, Multicore Programming	Understand the advantages of single thread over multithread	BB	2		14	22-12-2018	27-12-2018		
11	Multithreading Models	Understand the different models of multithread	LCD	2		16	04-01-2019	05-01-2019		

12	Implicit Threading, Threading Issues	Understand different issues of multithread	BB	2		18	08-01-2019	10-01-2019		
13	**Process Scheduling:** Basic Concepts, Scheduling Criteria	Understand various scheduling criteria for performance evaluation	BB	1		19	10-01-2019	10-01-2019		
14	Scheduling Algorithms, Thread Scheduling	Implement different scheduling algorithms	BB	3		22	11-01-2019	21-01-2019		
15	Multiple-Processor Scheduling, Real-Time CPU Scheduling	Understand scheduling in the environment of multi-processor and real time	LCD	2		24	21-01-2019	25-01-2019		
16	**UNIT - III Synchronization:** Background, The Critical-Section Problem	Understand the concept of synchronizing processes	BB	1		25	28-01-2019	28-01-2019		
17	Peterson's solution, Synchronization Hardware	Understand solution for critical section problem	LCD	1		26	29-01-2019	29-01-2019		
18	Mutex Locks, Semaphores	Use of locks on items	BB	1		27	07-02-2019	07-02-2019		
19	Classic Problems of Synchronization	Identify different problems of synchronization	BB	2		29	08-02-2019	11-02-2019		
20	Monitors	Understand monitor in operating system environment	BB/ LCD	1		30	14-02-2019	14-02-2019		

21	**Deadlocks:** System Model, Deadlock Characterization	Understand different characteristics of occurrence of deadlock	BB	1		31	15-02-2019	15-02-2019		
22	Methods for Handling Deadlocks	Familiarize the methods to handle deadlocks	BB	1		32	21-02-2019	21-02-2019		
23	Deadlock Prevention	Know to prevent occurrence of deadlock	BB	1		33	21-02-2019	21-02-2019		
24	Deadlock Avoidance, Deadlock Detection	Understand the methods to avoid and detect deadlock	BB	2		35	21-02-2019	22-02-2019		
25	Recovery from Deadlock	Understand different methods to recover from deadlock	LCD	1		36	22-02-2019	22-02-2019		
26	**UNIT - IV** **Memory-Management Strategies:** Background, Swapping	Understand the internal storage of data	BB/ LCD	1		37	23-02-2019	23-02-2019		
27	Contiguous Memory Allocation	Familiarize the techniques of memory allocation	BB/ LCD	1		38	23-02-2019	23-02-2019		
28	Segmentation, Paging	Understand mapping of logical and physical address	BB	2		40	23-02-2019	25-02-2019		
29	Structure of Page Table	familiarize with different memory management mechanisms	BB	1		41	28-02-2019	28-02-2019		

30	**Virtual-Memory Management:** Background, Demand Paging	Understand advantage of virtual memory	BB	2		43	28-02-2019	28-02-2019		
31	Page Replacement	Understand the handling of page faults	BB	3		46	01-03-2019	05-03-2019		
32	Allocation of frames, Thrashing	Understand frame allocation types and paging activity	BB	2		48	05-03-2019	07-03-2019		
33	**UNIT V** **Files System:** File Concept, Access Methods	Understand file attributes, operations and different methods to access files	BB	2		50	07-03-2019	08-03-2019		
34	Directory and Disk Structure	Understand different structures of directory	LCD	2		52	12-03-2019	14-03-2019		
35	File-System Mounting, File sharing, Protection	Understand mounting of file system	BB	2		53	14-03-2019	18-03-2019		
36	**Implementing File-Systems:** File-System Structure, File-System Implementation	Implementation of file system	BB	1		55	19-03-2019	19-03-2019		
37	Directory Implementation, Allocation Methods, Free Space Management	Understand various allocation methods in directory	LCD	2		56	22-03-2019	23-03-2019		
38	**Mass-Storage Structure:** Overview of Mass-Storage Structure, Disk Structure	Understand structure of secondary storage devices	LCD	1		58	23-03-2019	23-03-2019		

39	Disk Scheduling, RAID Structure	Understand various scheduling disk requests and RAID structure	BB/ LCD	2		59	23-03-2019	25-03-2019		

N. Neelima

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A. Srikiran

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Date:

IT 251 - Basic Electrical & Electronics Engineering Lab

Chandini (EEE)

Academic Year : 2018-2019

Year & Semester : B.Tech / II Year I SEM (ITA Section & ITB Section)

Branch : Information Technology

Subject Code & Name : IT251 (R16) Basic Electrical & Electronics Engineering LAB

Name of Faculty : Ms. T. R. Chandni

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review / Remarks (By HOD)
Week1	BEE Lab Introduction	Familiarize with basic of electrical engineering	3	3	09-07-2018	09-07-2018	
Week2	Verification of KVL & KCL	Understand the usage of Kirchhoff's Laws	3	6	16-07-2018	16-07-2018	
Week3	Parameters of Choke Coil	Finding R,L parameter of a given choke	3	9	23-07-2018	23-07-2018	
Week4	Verification of Thevenin's Theorem	Understand the usage Thevenin's Theorem	3	12	30-07-2018	30-07-2018	
Week5	Verification of Superposition Theorem	Understand the usage of Superposition Theorem	3	15	06-08-2018	06-08-2018	
Week6	Verification of Maximum Power Transfer Theorem	Understand the usage of Maximum power transfer Theorem	3	18	20-08-2018	20-08-2018	

Week7	Characteristics of Silicon and Germanium diodes	Familiarize with the characteristics of Silicon and Germanium diodes	3	21	27-08-2018	27-08-2018	
Week8	Characteristics of Zener diodes	Familiarize with the characteristics of Zener diodes	3	24	10-09-2018	10-09-2018	
Week9	Half wave Rectifier and Full wave Rectifier	Familiarize with Half wave Rectifier and Full wave Rectifier	3	27	17-09-2018	17-09-2018	
Week10	Transistor Characteristics in CE Configuration	Familiarize with Transistor Characteristics in CE Configuration	3	30	24-09-2018	24-09-2018	
Week 11	Characteristics of JFET	Familiarize with Characteristics of JFET	3	33	01-10-2018	01-10-2018	

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Date:

IT 253 - Professional Communication Skills Lab

Dr. K. Sadhakar

Academic Year : 2018-2019

Year & Semester : B.Tech / II Year II SEM (ITA Section & ITB Section)

Branch : Information Technology

Subject Code & Name : IT253 (R16) Professional Communication Skills Lab

Sl.No.	Topic of the syllabus to be covered	Learning Out comes	Teaching Mode: (BB)Black Board/LCD/Power point presentation/Computer (C)/Activity Room (AR)/ LAB	Hours required: Lecture/ Tutorial		Total No. of Hours (Cumulative)	Expected Date of Topic to Be covered	Actual Date of topic covered	Review/ Remarks by H.O.D
				L	T				
1	Activity: JAM – Self Introduction.	Speaking skill	AR	L		2	05-12-2018	05-12-2018	
2	Presentations: News paper reading/Analysis/Summary	Reading & Writing skills	C	L		2	12-12-2018	19-12-2018	
3	Presentation skills	Speaking skills	AR	L		2	19-12-2018	19-12-2018	

4	Personality development: (a) Job application (b) Resume and (c) Cover Letter.	Writing skills	C	L		2	26-12-2018	26-12-2018	
5	Activity: Group Discussion	Speaking skills	AR	L		2	02-01-2019	09-01-2019	
6	Speech Writing, Activity: Group Discussion	Writing & Speaking skills	AR	L		2	09-01-2019	09-01-2019	
7	Activity: JAM	Speak skill	AR	L		2	23-01-2019	06-02-2019	
8	Speech Writing Activity: JAM	Writing & Speaking skills	AR	L		2	06-02-2019	06-02-2019	
9	Observation correction Activity: JAM	Speaking skill	LAB	L		2	13-02-2019	13-02-2019	
10	Activity: News paper presentation Activity: JAM	Reading & Speaking skills	LAB	L		2	27-02-2019	27-02-2019	
11	Report Writing	Writing skill	C	L		2	06-03-2019	06-03-2019	
12	Interviews	Reading & Writing skills	C	L		2	13-03-2019	13-03-2019	
13	Observation & Record correction	Presentation skills	LAB	L		2	20-03-2019	20-03-2019	

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Date:

P Sivaprasad (ECE)

LESSON PLAN

Academic Year : 2018-2019

Year & Semester : B.Tech / II Year II SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT254 (R16 MICROPROCESSORS INTERFACIING LAB)

Name of Faculty : P SIVA PRASAD / P BALA PRASANTHI

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review / Remarks (By HOD)
Week1	Introduction to assembly Language Programming	Introduced how to write assembly language programs	2	2	28-11-2018	28-11-2018	
Week2	Assembly language program to add two sixteen bit numbers and to subtract two sixteen bit numbers.	Implement addition and subtraction using assembly language program	2	4	05-12-2018	05-12-2018	
Week3	Assembly language program to verify the following logical operations on 16 bit numbers, AND,OR,XOR and also find 1's complement and 2's	Implement logical operations using assembly language program	2	6	12-12-2018	12-12-2018	

	complement of 16 bit number						
Week4	Assembly language program to arrange the given numbers in ascending order.	Able to arrange the numbers using assembly language program	2	8	19-12-2018	19-12-2018	
Week5	Assembly language program to count number of +ve elements, -ve elements, zeros in the given array.	Implement assembly language program to count no.of positives, negatives and zeros in an array	2	10	26-12-2018	26-12-2018	
Week6	Assembly language program to find the square of a number using look-up-table	Implement assembly language program to find the square of a number using look up table	2	12	02-01-2019	02-01-2019	
Week7	Assembly language program to move a string byte from a memory location to another memory location.	Understand how to work with strings in an assembly language platform	2	14	23-01-2019	09-01-2019	
Week8	Assembly language program to calculate the maximum and minimum in an array.	Implement assembly language program to calculate maximum and minimum in an array	2	16	06-02-2019	23-01-2019	
Week9	Assembly language program to convert BCD to binary using near procedures.	Understand how to work with subroutines and these play key role in an assembly language programming	2	18	13-02-2019	13-02-2019	
Week10	Assembly language program to ncr by using near procedures.	Understand how to work with subroutines and these play key role in an assembly language programming	2	20	20-02-2019	20-02-2019	
Week11	Assembly language to interface a 8-bit D-A converter and convert digital to analog	Understand how to interface 8 bit DAC with 8086 microprocessor	2	22	27-02-2019	27-02-2019	

	(generate square and triangular).						
Week12	ALP to control the stepper motor and its speed of operation	Understand how to interface stepper motor with 8086 microprocessor and able to control the speed of stepper motor	2	24	06-03-2019	06-03-2019	

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LESSON PLAN

Academic Year : 2018-2019

Year & Semester : B.Tech / II Year II SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT255 (R16) DATABASE MANAGEMENT SYSTEMS LAB

Name of Faculty : Dr.M.Pompapathi / Smt.N.Neelima

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review / Remarks (By HOD)
Week1	Introduction To S Q L And DDL, DML Statements In SQL and Creation Of Databases For Supplier Database And Practice Queries	Create/implement database table for any application by enforcing constraints to the database tables	3	3	06-12-2018	06-12-2018	
Week2	S Q L - Special Comparison Operators, Null Value	Understand the usage of null value and comparison and special comparison operators in specifying retrieval requests to the database tables.	3	6	13-12-2018	13-12-2018	
Week3	Datetime Functions and Conversion Function In S Q L	Understand the usage of Datetime Functions and Conversion Function In S Q L	3	9	20-12-2018	20-12-2018	

Week4	Group Functions and General Functions In S Q L	Understand the usage of General and group Functions In S Q L	3	12	27-12-2018	27-12-2018	
Week5	Advance Query Statements in S Q L - Set Operators, Joins in S Q L, and Subqueries and Correlated Subqueries in SQL.	Understand the usage of Set Operators, Joins In S Q L, Subqueries and Correlated Subqueries in SQL	3	15	03-01-2019	03-01-2019	
Week6	Program 1: Basic queries on employee, department tables using built-in functions	Implement end user retrieval requests through basic queries on employee, department tables	3	18	10-01-2019	10-01-2019	
Week7	Program 2: Queries with group functions and nested queries on employee, department tables	Implement end user retrieval requests through SQL functions, joins and nested queries on employee, department tables	3	21	24-01-2019	24-01-2019	
Week8	Program 3: Basic queries performed on the company database tables	Implement end user retrieval requests through basic queries on COMPANY database tables.	3	24	08-02-2019	08-02-2019	
Week9	Program 4: Advanced query statements written on the company database tables	Implement end user retrieval requests on COMPANY database tables using joins, subqueries, EXISTS operator.	3	27	14-02-2019	14-02-2019	
Week10	Program 5: Programs in PL/SQL using unnamed blocks.	Implement unnamed blocks to calculate gross salary of an entered employee number from the database table	3	30	21-02-2019	21-02-2019	
Week11	Program 6: Programs in PL/SQL using cursors and exceptions	Implement cursors and pre-defined and user defined exception handling in PL/SQL.	3	33	01-03-2019	01-03-2019	
Week12	Program 7: Programs in PL/SQL using named blocks	Implement named blocks using subprograms.	3	36	08-03-2019	08-03-2019	

Week13	Program 8: creation of database schema using schema builder	Design the database tables using SCHEMA BUILDER	3	39	14-03-2019	14-03-2019	
Week14	Program 9: Specification retrieval requests using query builder	Specify queries using QUERY BUILDER for end user requirements	3	42	18-03-2019	18-03-2019	
Week15	Program 10: Design of database forms using form builder.	Implement database forms for SELECT, INSERT, DELETE, UPDATE operations using FORM BUILDER.	3	45	25-03-2019	25-03-2019	

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Date:

IT256 (R16) JAVA PROGRAMMING LAB

Academic Year : 2018-2019

Year & Semester : B.Tech / II Year II SEM (ITA Section)

Branch : Information Technology

Subject Code & Name : IT256 (R16) JAVA PROGRAMMING LAB

Name of Faculty : Sri G. SRINIVASA RAO

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review / Remarks (By HOD)
Week1	Simple java programs	.Understand java environment and execution of simple java programs.	2	2	28-11-2018	30-11-2018	
	Java programs on control structures.	.Understand implementation of java programs using control structers.	2	4	30-11-2018	01-12-2018	
Week2	java program using arrays.	Understand declaration of arrays and developing programs using arrays.	2	6	01-12-2018	07-12-2018	
	Method overloading and constructures in java.	Understand developing programs using the concept of method overloading and constructers in java.	2	8	07-12-2018	14-12-2018	
Week3	java programs using concept of inheritance method overriding and usage of static keyword.	Understand .developing programs using the concepts of inheritance. method overriding and usage of static keyword.	2	10	14-12-2018	15-12-2018	
	.java programs using keywords	.understand implementation of java	2	12	15-12-	21-12-	

	final, abstract.	programs using final, abstract keywords and interfaces.			2018	2018	
Week4	java programs using interfaces and multiple inheritance.	.Understand implementation programs using interfaces and multiple inheritance.	2	14	21-12-2018	22-12-2018	
	Java programs using the concept of multithreading and synchronous keyword.	Understand implementation programs using the concept of multithreading and synchronous keyword.	2	16	22-12-2018	28-12-2018	
Week5	java programs using user defined packages.	.Understand implementation of programs using packages.	2	18	28-12-2018	29-12-2018	
	Java programs using exception handling mechanism.	.Understand implementation of programs using exception handling mechanism..	2	20	29-12-2018	04-01-2019	
Week6	.applet programming.	Understand implementation of applet java programs..	2	22	04-01-2019	05-01-2019	
	.java programs for drawing different shapes.	Understand implementation of applet java programs for drawing different shapes..	2	24	05-01-2019	11-01-2019	
Week7	.java programs using AWT components.	Understand implementation of java programs using AWT components and event handling mechanism.	3	26	11-01-2019	25-01-2019	
	.java programs for handling events using different listeners.	Understand implementation of java programs using AWT components and handling events using different listener interfaces.	3	28	25-01-2019	08-02-2019	
Week8	.java programs using awt components.	Understand implementation of java programs using awt components and handling events using different listener interfaces.	2	30	08-02-2019	09-02-2019	
	Java programs using swing components.	Understand implementation of java programs using swing components	2	32	09-02-2019	15-02-019	

		and handling events using different listener interfaces.					
Week9	Java programs using swing components JTree, JTabel, TabbedPane etc.	Understand implementation of java programs using swing components JTree, JTabel, TabbedPane and.handling events using different listener interfaces.	2	34	15-02-019	16-02-2019	
	Java programs for handling menus	Understand implementation of java programs using awt and swing components for handling menus.	2	36	16-02-2019	22-02-2019	
Week10	Java programs using i/o streams	Understand implementation of java programs using stream classes	2	38	22-02-2019	23-02-2019	
	Java programs using networking classes.	Understand implementation of java programs using networking classes.	2	40	23-02-2019	01-03-2019	
Week11	Java programs for TCP client/server communication.	Understand implementation of java application for TCP client/server communication.	2	42	01-03-2019	02-03-2019	
	Java programs for UDP client/server communication	Understand implementation of java application for UDP client/server communication.	2	44	02-03-2019	08-03-2019	
Week12	JDBC programs	Understand implementation of JDBC programs to perform different operations on a table..	2	46	08-03-2019	23-03-2019	

Signature of the Faculty

Signature of the HOD:

Date:

IT301 (R16) COMPUTER NETWORKS

Academic Year : **2018-2019**

Year & Semester : **B.Tech / III Year I SEM (IT A section and B section)**

Branch : **Information Technology**

Subject Code & Name : **IT301 (R16) COMPUTER NETWORKS**

Name of Faculty : Sri M.V.Bhujanga Rao/Smt N.Neelima

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT I** Introduction To Computer Networks	familiarize with Introduction To Computer Networks	BB	1		1	11-06-2018	11-06-2018		
2	Uses Of Computer Networks	Able to understand the Uses Of Computer Networks	BB	1		2	12-06-2018	12-06-2018		
3	Network Hardware: Pan,lan And Man	Able to know the Network Hardware: PAN, LAN and MAN	BB	1		3	13-06-2018	13-06-2018		

4	Network Hardware: Wan	Able to know the Network Hardware: WAN	BB/ LCD	1		4	15-06-2018	15-06-2018		
5	Wireless,home And Internetwork	Able to know the Wireless,home And Internetwork	BB	1		5	20-06-2018	20-06-2018		
6	Network Soflware	Able to understand the Network Software	BB	1		6	22-06-2018	22-06-2018		
7	Osi Reference Model	Able to understand the OSI Reference Model	BB	1		7	25-06-2018	25-06-2018		
8	Tcp/ip Reference Model	Able to understand the TCP/IP Reference Model	BB/ LCD	1		8	26-06-2018	26-06-2018		
9	Guided Medium	Able to know the Guided Medium	BB/ LCD	1		9	27-06-2018	27-06-2018		
10	Dsl Family	Able to know the DSL Family	BB/ LCD	1		10	03-07-2018	03-07-2018		
11	**UNIT II** Introduction To Data Link Layer	Able to know the Data Link Layer	BB/ LCD	1		11	04-07-2018	04-07-2018		
12	The Data Link Layer Design Issues	Able to know the Data Link Layer Design Issues	BB	1		12	06-07-2018	06-07-2018		
13	Services Provided To	Able to know the Services Provided To	BB	1		13	09-07-2018	09-07-2018		

	Network Layer	Network Layer								
14	Framing Methods	Able to understand different Framing Methods	BB	1		14	10-07-2018	10-07-2018		
15	Modulo-2 And Crc	familiarize with Modulo-2 And Crc	**BB**	**1/2**		**14.5**	11-07-2018	11-07-2018		
16	Crc With Polynomial	familiarize Crc With Polynomial	BB/ LCD	1/2		15	11-07-2018	11-07-2018		
17	Stop-and-wait Arq	Able to analyze the Stop-and-wait Arq	BB/ LCD	1		16	13-07-2018	13-07-2018		
18	Sliding Window Arq	Able to analyze the Sliding Window Arq	BB	1		17	16-07-2018	16-07-2018		
19	Csma	Able to understand Csma		1		18	17-07-2018	17-07-2018		
20	Crc Examples	Familiarize with Crc Examples	BB	1/2		18.5	18-07-2018	18-07-2018		
21	Csma/ca	Able to understand Csma/ca	BB	1/2		19	18-07-2018	18-07-2018		
22	Classical And Switched Ethernet	Able to understand Classical And Switched Ethernet	BB	1		20	19-07-2018	19-07-2018		
23	Fast Ethernet	Able to understand Fast Ethernet	BB/ LCD	1		21	23-07-2018	23-07-2018		

24	Data Link Layer Switching	Able to understand Data Link Layer Switching	BB/ LCD	1/ 2		21.5	25-07-2018	25-07-2018		
25	VLANs	Able to analyze VLANs	BB/ LCD	1/ 2		22	25-07-2018	25-07-2018		
26	**UNIT III** Network Layer Design Issues	Able to understand Network Layer Design Issues	BB	1		23	27-07-2018	27-07-2018		
27	Comparison Between Virtual Circuit And Datagram Subnet	Able to analyze the Comparison Between Virtual Circuit And Datagram Subnet	BB	1		24	30-07-2018	30-07-2018		
31	Flooding And Shortest Path Routing Algorithm	familiarize with Flooding And Shortest Path Routing Algorithm	BB	1		25	30-07-2018	30-07-2018		
32	Distance Vector Routing Algorithm	familiarize Distance Vector Routing Algorithm	BB/ LCD	1		26	01-08-2018	01-08-2018		
34	Link State Routing Algorithm	familiarize Link State Routing Algorithm	BB/ LCD	1		27	06-08-2018	06-08-2018		
35	Hierarchical And Broadcast Routing Algorithms	familiarize Hierarchical And Broadcast Routing Algorithms	BB	1		28	07-08-2018	07-08-2018		
36	Broadcast Algorithm	familiarize Broadcast Algorithm	BB	1		29	08-08-2018	08-08-2018		

37	Multicast And Routing For Mobile Hosts Algorithms	familiarize Multicast And Routing For Mobile Hosts Algorithms	BB	1		30	27-08-2018	27-08-2018		
38	Congestion Control General Principles	Able to understand Congestion Control General Principles	BB	2		32	28-09-2018 & 29-08-2018	28-09-2018 & 29-08-2018		
39	How To Avoid Congestion In Vc Subnet	Able to Understand How To Avoid Congestion In Vc Subnet	BB	1		33	31-08-2018	31-08-2018		
40	Loadshedding	Able to Learn Loadshedding	BB	1		34	05-09-2018	05-09-2018		
41	Jitter Control	Able to Learn Jitter Control	BB	1		35	07-09-2018	07-09-2018		
42	**UNIT IV** Introduction To Internetworking	Able to Understand Introduction To Internetworking	BB	1		36	11-09-2018	11-09-2018		
43	concatenation of VC and datagram subnets	Able to Understand concatenation of VC and datagram subnets	BB	1		37	12-09-2018	12-09-2018		
44	Tunneling And Fragmentation	Able to Learn Tunneling And Fragmentation	BB	1		38	14-09-2018	14-09-2018		
45	The Network Layer In The Internet	Able to Understand The Network Layer In The Internet	BB/ LCD	1		39	17-09-2018	17-09-2018		
46	The Ip Version 4.0 Protocol	Able to Learn The Ip Version 4.0 Protocol	BB/ LCD	1		40	18-09-2018	18-09-2018		

47	Ipv4.0 Header Format	Able to Learn Ipv4.0 Header Format	BB/ LCD	1		41	19-09-2018	19-09-2018		
48	Ip Addresses	Able to learn Ip Addresses	BB/ LCD	1		42	24-09-2018	24-09-2018		
49	Subnet Masking	Able to Understand Subnet Masking	BB/ LCD	2		44	25-09-2018 & 28-09-2018	25-09-2018 & 28-09-2018		
50	Examples Of Subnet Masking	Able to Familiarize with Examples Of Subnet Masking	BB/ LCD	1		45	01-10-2018	01-10-2018		
51	Ip 6.o And Services Of Transport Layer	Able to Learn Ip 6.o And Services Of Transport Layer	BB	1		46	03-10-2018	03-10-2018		
52	Transport Layer Elements And Congestion Control	Able to Understand Transport Layer Elements And Congestion Control	BB	2		48	05-10-2018 & 06-10-2018	05-10-2018 & 06-10-2018		
53	**UNIT V** Internet Transport Protocols : Udp And Tcp	Able to Learn about Internet Transport Protocols : Udp And Tcp	BB	1		49	08-10-2018	08-10-2018		
54	RPC and RTTP protocol	Able to Understand RPC and RTTP protocol	BB/ LCD	1		50	08-10-2018	08-10-2018		
55	Domain Name System	Able to Analyze Domain Name System	LCD	1		51	09-10-2018	09-10-2018		
56	E-mail	Able to Familiarize with E-mail	BB	1		52	10-10-2018	10-10-2018		

57	Mime Protocol	Able to Understand Mime Protocol	BB	1		53	10-10-2018	10-10-2018		

N. Neelima
Signature of the Faculty

A. Srikanth
Signature of the HOD:
Date:

IT302 (R16) WEB TECHNOLOGIES

Academic Year : 2018-2019

Year & Semester : B.Tech / III Year I SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT302 (R16) WEB TECHNOLOGIES

Name of Faculty : Dr. B. Hemantha Kumar/Dr.G.Ramamohan Babu

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** Introduction to Web technology, Course objectives and outcomes.	Introduce the main objectives and outcomes of the course and Web documents.	BB	1		1	11-06-2018	11-06-2018		
2	Structure Of Html Document, HTML Table And Anchor Tags,	Understand how to create Html document and how to provide links to another page	BB	2		3	12-06-2018	12-06-2018		

3	HTML Named Anhors, lists, Image	Understand how to provide links within same page, and how to display images, providing bullets in html page	LCD	1		4	13-06-2018	13-06-2018		
4	HTML Forms , Form Elements	Understand the various Form elements	LCD	1		5	15-06-2018	15-06-2018		
5	HTML Frames	Understand how to divide window into different parts	LCD	1		6	18-06-2018	18-06-2018		
6	CSS Styles	Understand how to provide styles to HTML elements	BB	1		7	19-06-2018	19-06-2018		
7	CSS Grouping, Selector Class,	Familiarize with CSS styles by providing same styles to different HTML element	BB/ LCD	1		8	20-06-2018	20-06-2018		
8	CSS Back Ground and Boarder Properties	Understand the usage of background and borders to the HTML elements	BB/ LCD	2		10	22-06-2018	23-06-2018		
9	CSS Dimension Properties,	Understand how to provide dimensions to HTML elements	BB	1		11	25-06-2018	25-06-2018		
10	CSS Position Properties	Familiarize with positions of HTML element	BB/ LCD	1		12	26-06-2018	26-06-2018		
11	**Tutorial 1: CSS Text, Float, Font Properties**	**Understand the usage of Text and different fonts**	**LCD**		**1**	**13**	**27-06-2018**	**27-06-2018**		

12	**UNIT- II** Java Script	Understand the usage of Client side scripting	BB	1		14	28-06-2018	28-06-2018		
13	Java Script Variables, Data Types, Operators,	Familiarize with java script data types and operations	BB	2		16	29-06-2018	30-06-2018		
14	Java Script Control Structures	Understand various control structures	BB	1		17	02-07-2018	04-07-2018		
15	Java Script Break And Continue Statements,	Understand various loop structures	BB	1		18	09-07-2018	09-07-2018		
16	Java Script Functions,	Familiarize with java script Functions	BB	1		19	10-07-2018	10-07-2018		
17	Recursive Functions	Familiarize with recursive Functions	BB	1		20	11-07-2018	11-07-2018		
18	Java Script Arrays	Understand the usage of single and two dimensional arrays.	BB	1		21	12-07-2018	16-07-2018		
19	String Object And Math Object	Understand basic methods of String and Math Objects	BB	1		22	18-07-2018	18-07-2018		
20	Date Object,	Understand basic methods of Date Object	BB	1		23	23-07-2018	23-07-2018		
21	**Tutorial 2 : Window Object and examples**	**Understand basic operations of different object methods**	**LCD**		**1**	**24**	**25-07-2018**	**25-07-2018**		
22	**UNIT - III** Document Object Model	Understand the usage of dynamic elements	BB	1		25	28-07-2018	28-07-2018		

23	Dynamic Styles	Familiarize with dynamic styles to HTML elements	LCD	2		27	30-07-2018	31-07-2018		
24	Collections And Children	Understand the inner html elements,	BB	1		28	01-08-2018	01-08-2018		
25	Events	Design Event Handling applications	LCD	1		29	04-08-2018	04-08-2018		
26	Onchange, Mouse Events	Design MouseOver, MouseOn and Text change event Handling applications	LCD	1		30	07-08-2018	07-08-2018		
27	Form Events	Understand Form Validation	BB/ LCD	1		31	08-08-2018	08-08-2018		
28	Event Listeners	Understand adding Listeners to handle events	BB	2		33	21-08-2018	21-08-2018		
29	**Tutorial 3 : DOM ,examples**	**Implement event handling mechanism**	**LCD**		**2**	**35**	**25-08-2018**	**25-08-2018**		
30	XML Introduction, XML DTD	Understand creating XML elements, structures	BB	2		37	28-08-2018	28-08-2018		
31	XML Data Types, Attributes	specify XML data types and attributes	BB	2		39	30-08-2018	30-08-2018		
32	XML Name Spaces	Create name spaces for XML elements	BB	1		40	01-09-2018	01-09-2018		
33	XML-schema Definition	Understand XSD	BB/ LCD	1		41	04-09-2018	04-09-2018		
34	XSL Transformations	Understand Transform XML data to another document	BB/ LCD	1		42	11-09-2018	11-09-2018		

35	XML-vocabularies	Understand different XML-vocabularies	BB	1		43	12-09-2018	12-09-2018		
36	XML Dom, Dom Objects	Understand XML tree structure	BB/LCD	1		44	15-09-2018	15-09-2018		
37	**Tutorial 4: XML Dom, Examples**	**Understand XML DOM**	**LCD**		1	**45**	**17-09-2018**	**17-09-2018**		
38	UNIT - IV Web Servers, Multi Tier Architecture	Understand Multi Tier Architecture	BB	1		46	18-09-2018	18-09-2018		
39	Ruby Script	Understand Ruby Script	LCD	1		47	19-09-2018	19-09-2018		
40	Ruby Functions	Understand Ruby Functions	BB	1		48	24-09-2018	24-09-2018		
41	Ruby Classes	Understand ruby classes	BB	1		49	25-09-2018	25-09-2018		
42	Rails Application	Understand Rails applications	BB	1		50	26-09-2018	26-09-2018		
43	**Tutorial 5 : Rails Database Application**	**Design DB application using rails concepts**	**LCD**		1	**51**	**29-09-2018**	**29-09-2018**		
44	**UNIT - V** Servlets	Understand basics server side applications	LCD	1		52	01-10-2018	01-10-2018		
45	Servlet Life Cycle Methods	Understand creating server application	BB/ LCD	1		53	03-10-2018	03-10-2018		
47	Session And Cookies	Understand servlet transactions	BB/ LCD	1		54	05-10-2018	05-10-2018		
48	Ajax Application	Understand synchronous applications	BB/ LCD	2		56	06-10-2018	06-10-2018		
49	Rss, Deployment Descriptor	Understand	BB	2		58	09-10-	09-10-		

		Transaction Support In S Q L					2018	2018		
50	Tutorial 6: Servlet, Examples	Understand servlet execution steps	LCD		1	59	10-10-2018	10-10-2018		

Signature of the Faculty

Signature of the HOD:
Date:

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode: Black Board(BB)/LCD (Power Point Presentation)	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/ Lagging	Review/Remarks (By HoD
				L	T					
1	Introduction To Algorithm Design	importance of algorithm	BB	1		1	02-06-2018	02-06-2018		
2	Algorithm Analysis	how to analyse the algorithm	BB	1		2	13-06-2018	13-06-2018		
3	Algorithm Analysis	how to analyse the algorithm	BB	1		3	14-06-2018	14-06-2018		
4	Control Abstraction Of Dandc	approach of DandC	BB	1		4	19-06-2018	19-06-2018		
5	Finding Max-min Using Dandc	DandC Applications	BB	1		5	20-06-2018	20-06-2018		
6	Time Complexity Of Minmax and Quick Sort	DandC Applications	BB	1		6	21-06-2018	21-06-2018		
7	Kth Smallest Element	DandC Applications	BB	1		7	26-06-2018	26-06-2018		
8	Merge Sort Using Links	DandC Applications	BB	1		8	27-06-2018	27-06-2018		
9	Greedy Method- Knapsack Problem	approach of Greedy	BB	1		9	04-07-2018	04-07-2018		
10	Strassen's Matrix Multiplication	Greedy Applications	BB	1		10	11-07-2018	11-07-2018		
11	Tree Vertex Splitting Problem	Greedy Applications	BB	1		11	12-07-2018	12-07-2018		
12	Job Sequencing With Deadlines	Greedy Applications	BB	1		12	12-07-2018	12-07-2018		
13	Minimum Cost Spanning Tree Prims Algorithm	Greedy Applications	BB	1		13	17-07-2018	17-07-2018		
14	Prims And Kruskals Procedure	Greedy Applications	BB	1		14	18-07-2018	18-07-2018		

15	Kruskals Algorithm	Greedy Applications	BB	1		15	19-07-2018	19-07-2018		
16	Dijkstras Algorithm	Greedy Applications	BB	1		16	23-07-2018	23-07-2018		
17	Dynamic Programming Introduction	Approach of DP	BB	1		17	25-07-2018	25-07-2018		
18	Dijkstra Algorithm And Multistage Graph.	comparison of DP with Greedy	BB	1		18	26-07-2018	26-07-2018		
19	Multistage Graph.	Applications of DP	BB	1		19	28-07-2018	28-07-2018		
20	Forward And Backward Algorithms.	Applications of DP	BB	1		20	31-07-2018	31-07-2018		
21	All Pair Shortest Paths	Applications of DP	BB	1		21	02-08-2018	02-08-2018		
22	Bellman Ford Algorithm	Applications of DP	BB	1		22	07-08-2018	07-08-2018		
23	Bellman Ford Algorithm	Applications of DP	BB	1		23	08-08-2018	08-08-2018		
24	Path Finding In Dijkstras Alg.	Applications of DP	BB	1		24	09-08-2018	09-08-2018		
25	Obst	Applications of DP	BB	1		25	23-08-2018	23-08-2018		
26	Obst	Applications of DP	BB	1		26	24-08-2018	24-08-2018		
27	Obst	Applications of DP	BB	1		27	24-08-2018	24-08-2018		
28	String Editing Problem	Applications of DP	BB	1		28	27-08-2018	27-08-2018		
29	String Editing	Applications of DP	BB	1		29	28-08-2018	28-08-2018		
30	String Editing	Applications of DP	BB	1		30	29-08-2018	29-08-2018		
31	Knapsack Dynamic Programming	Applications of DP	BB	2		32	30-08-2018	30-08-2018		
32	Knapsack Using Dp	Applications of DP	BB	1		33	01-09-2018	01-09-2018		

33	Knapsack Using Dp Tabular Method	Applications of DP	BB	1		34	04-09-2018	04-09-2018		
34	Tsp Using Dp	Applications of DP	BB	1		35	05-09-2018	05-09-2018		
35	Tsp Using Dp	Applications of DP	BB	1		36	06-09-2018	06-09-2018		
36	Reliability Design	Applications of DP	BB	1		37	11-09-2018	11-09-2018		
37	Dfs And Bfs	Graph Traversals	BB	1		38	12-09-2018	12-09-2018		
38	Biconnected Component	App. on Graph Traversals	BB	1		39	15-09-2018	15-09-2018		
39	Biconnected Components	App. on Graph Traversals	BB	1		40	25-09-2018	25-09-2018		
40	Introduction To Backtracking	approach of BT	BB	1		41	25-09-2018	25-09-2018		
41	Nqueens Problem	Applications of BT	BB	1		42	26-09-2018	26-09-2018		
42	Graph Coloring	Applications of BT	BB	1		43	27-09-2018	27-09-2018		
43	Hamiltonian Cycle	Applications of BT	BB	1		44	29-09-2018	29-09-2018		
44	Knapsack Problem Using Backtracking	Applications of BT	BB	1		45	03-10-2018	03-10-2018		
45	Knapsack Using Back Tracking	Applications of BT	BB	1		46	04-10-2018	04-10-2018		
46	Knapsack Using Lcbb&Fifobb.	approach of BB and its variants and Applications	BB	1		47	09-10-2018	09-10-2018		
47	Tsp Using Lcbb	approach of BB and its variants and Applications	BB	1		48	10-10-2018	10-10-2018		

Signature of Faculty

Signature of HoD

Date:

IT304 (R16) Unix Programming

Academic Year : 2018-2019

Year & Semester : B.Tech / III Year I SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT304 (R16) Unix Programming

Name of Faculty : Sri. G. Srinivasa Rao

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation		Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
					L	T					
1	**UNIT – I** Operating system functios, introduction to unix .	.Understand functions of operating system and introduction to unix.	BB		1		1	12-06-2018	12-06-2018		
2	Unix architecture	Understand the architecture of unix operating system.	BB		1		2	12-06-2018	14-06-2018		
3	Features of unix operating system.	.Understand various features of unix os.	BB		1		3	14-06-2018	15-06-2018		

4	cat command	.Understand various forms and usage of cat command	BB		1		4	15-06-2018	19-06-2018		
5	Directory related commands	Understand the different directory related ommands	BB		1		5	19-06-2018	21-06-2018		
6	Ls command	Understand usage of ls command with different options.	BB		1		6	21-06-2018	22-06-2018		
7	File related commands cp.mv,rm,wc,ln,unlink	Understand usage of file related commands cp.mv,rm,wc,ln,unlink	BB		1		7	22-06-2018	23-06-2018		
8	Working with commands more, page, head,tail,chmod, chown, chgrp.	.Understand usage of commands more, page, head, tail, chmod, chown, chgrp.	BB		1		8	23-06-2018	28-06-2018		
9	commands who, sort, nl,grep.fgrep, egrep,	.Understand usage of commands sort, nl, grep, fgrep, egrep.	BB		1		9	28-06-2018	29-06-2018		
10	commands find, cmp, diff, uniq, tr	.understand usage of commands find, cmp, diff,uniq, tr.	BB		1		10	29-06-2018	30-06-2018		
11	commands cut, paste, join, sed and other mmands, vi editor	.Understand usage of commands cut, paste, join, sed with different examples.	BB		2,		12	30-06-2018	03-07-2018		
12	AWK programming features.	Understand various features of AWK programming.	BB		1		13	03-07-2018	05-07-2018		
13	Working with AWK with different examples..	Understand AWK programming with different examples.	BB		1		14	05-07-2018	06-07-2018		

14	**UNIT – II** Introduction to unix shells	.Understand different types of unix shells and setting shell prmpt.	BB		1		15	06-07-2018	10-07-2018		
15	Common core functionality of a shell.	Understand the shell metacharacters, built-in commands.	BB		1		16	10-07-2018	12-07-2018		
16	functions of shell	Understand shell functions i/o redirection, pipes. And filters with examples.	BB		1		17	12-07-2018	13-07-2018		
17	shell functionality	Understand shell functions command substitution sequences, grouping commands, background processing and shell variables.	BB		1		18	13-07-2018	20-07-2018		
18	working with bourne shell	Understand the declaration shell variables, usage of operators and control structures .	BB		1		19	20-07-2018	26-07-2018		
19	Shell Programs	Understand developing shell scripts using control structures	BB		1		20	26-07-2018	27-07-2018		
20	Positional Parameters and passing command line arguments	Understand developing shell programs using command line arguments	BB		2		21	27-07-2018	28-07-2018		

21	Shell programs	Understand developing different shell programs with all features	BB		I		22	28-07-2018	31-07-2018		
22	Shell programs using arrays and functions	Understand implementation of shell script using functions and arrays	BB		I		23	31-07-2018	02-08-2018		
23	Shell programs	Understand developing shell programs to perform the operations insertion , deletion , searching and sorting on a list of n elements	BB		I		24	02-08-2018	03-08-2018		
24	**UNIT - III** Introduction to system calls	Understand the importance of UNIX system calls	BB		I		25	03-08-2018	04-08-2018		
25	File Management System calls open() , read() , write() , lseek() and close()	Understand the usage of open() , read() , write() , lseek() and close() system calls	BB		I		26	04-08-2018	07-08-2018		
26	C programs using File management system call	Understand the implementation of c programs using file management system calls	BB		I		27	07-08-2018	09-08-2018		
27	Miscellaneous file management system calls	Understand the usage of file management system calls dup() ,	BB		I		28	09-08-2018	23-08-2018		

		dup2() , fcntl() , mknod() , chown() , chmod() ,etc()									
28	Intoduction to process management	Understand the concept of process management .	BB		1		29	23-08-2018	25-08-2018		
29	Creating processes using fork()	Understanding usage of fork() system call .	BB		1		30	25-08-2018	28-08-2018		
30	Orphan and Zombie processes	Understand the creation of orphan and zombie processes .	BB		1		31	28-08-2018	30-08-2018		
31	vfork() system call , Avoiding zombie using wait()	Understand the usage of vfork() and wait() system calls .	BB		1		32	30-08-2018	31-08-2018		
32	Introduction to signals and list of signals() .	Understand the different signals in unix	BB		1		33	31-08-2018	01-09-2018		
33	Alarm , signal handling using signal()	Understand signal handling mechanism using signal and handling alarm signals	BB		1		34	01-09-2018	04-09-2018		
34	Suspending and resuming processes	Understand suspending and resuming processes using signal handling	BB		1		35	04-09-2018	06-09-2018		
35	**UNIT –IV** .Introduction to interprocess communication	Understand different ways of interprocess communication.	BB		1		36	06-09-2018	07-09-2018		

36	.IPC using shared memory, system calls	Understand .usage of shared memory system calls for IPC	BB		1		37	07-09-2018	11-09-2018		
37	Programs for IPC using shared memory	Understand development of program .for IPC using shared memory	BB		1		38	11-09-2018	14-09-2018		
38	IPC using unnamed pipes	Understand the usage of system calls for IPC using unnamed pipes	BB		1		39	14-09-2018	15-09-2018		
39	IPC using unnamed pipes programs	Understand developing programs for clienrt/server communication using unnamed pipes	BB		1		40	15-09-2018	18-09-2018		
40	IPC using named pipes programs	Understand developing programs for clienrt/server communication using named pipes	BB		1		41	18-09-2018	19-09-2018		
41	IPC using sockets. System calls	Understand the usage of system calls for IPC using sockets	BB		1		42	19-09-2018	20-09-2018		
42	Programs for IPC using sockets	Understand developing programs for clienrt/server communication using sckets	BB		1		43	20-09-2018	25-09-2018		
43	Programs for IPC using sockets, semaphres	Understand developing programs for clienrt/server communication using	BB		1		44	25-09-2018	27-09-2018		

		sockets									
44	**UNIT –V** Unix internals- kernel basics	Understand unix kernel and its internal architecture	BB		1		45	27-09-2018	28-09-2018		
	Unix internals- process management	Understand unix process management	BB		1		46	28-09-2018	29-09-2018		
	Unix internals- process management	Understand unix process management	BB		1		47	29-09-2018	01-10-2018		
	Unix internals- memory management	.Understand unix memory management	BB		1		48	01-10-2018	04-10-2018		
	Unix internals- memory management	.Understand unix memory management	BB		2		50	04-10-2018	06-10-2018		
	Unix internals- input/output management	.Understand unix input/output management	BB		1		51	06-10-2018	09-10-2018		

Signature of the Faculty

Signature of the HOD:
Date:

LESSON PLAN

Academic Year : 2018-2019

Year & Semester : B.Tech / III Year I SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT305 (R16) COMPILER DESIGN

Name of Faculty : Dr.M.Pompapathi / Sri M.Siddardha Kumar

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading /Lagging	Review/ Remarks (By HOD)
				L	T					
1	UNIT - I Introduction To System Software And Application Software Components	Able to understand the phases of compiler and issues in design lexical analyzer	BB	1		1	10-06-2018	12-06-2018		
2	Compiler Functionality, Language Processing System and Analysis And Synthesis Model Of Compilation		BB	2		3	13-06-2018	14-06-2018		
3	Analysis Of He Source Program And Cousins Of Compiler and Phases Of Compiler		BB	2		5	20-06-2018	21-06-2018		
4	Output For Each Phase Of A Compiler		BB	1		6	22-06-2018	22-06-2018		

5	Compiler Construction Tools and Lexical Analysis - Role Of Lexical Analyzer		BB	2		8	26-06-2018	27-06-2018		
6	Input Buffering Scheme and Specification Of Tokens For L A		BB	2		10	29-06-2018	29-06-2018		
7	Recognition Of Tokens By L A		BB	1		11	30-06-2018	30-06-2018		
8	L E X Tool - Language For Specifying L A and Finite Automata, N F A, D F A - Concepts		BB	2		13	03-07-2018	03-07-2018		
9	Algorithm To Construct N F A From The Given R E		BB	1		14	04-07-2018	04-07-2018		
10	Algorithm To Construct D F A From The N F A		BB	1		15	05-07-2018	05-07-2018		
11	Tutorial 1: Design Of Lexical Analyzer Generator		LeD: Learning by Dialogue : NPTEL Videos	1		16	05-07-2018	05-07-2018		
12	UNIT – II Syntax Analysis - The Role Of Parser, Classification Of Parsing Techniques, C F G, Derivations, And Ambiguious Grammar	Able to design parsers with bottom-up or top-down parsing methods	BB	2		18	07-07-2018	07-07-2018		
13	Bottom Up Parser - Shift Reduce Parser : Handles, Handle Pruning, And Stack Implementation Of S R Paprser		BB	2		20	11-07-2018	11-07-2018		
14	Operator Precedence Parser - Grammar, O P P T Construction, And String Parsing		BB	1		21	12-07-2018	12-07-2018		

15	Usage Of Operator Precedence Functions For Construction Of O P P T		BB	1		22	16-07-2018	16-07-2018		
16	Error Recover In Operator Precedence Parsing		BB	1		23	18-07-2018	18-07-2018		
17	Top Down Parsing - With Backtracking and Elimination Of Left Recursion, Recursive Descent Parser		BB	2		25	25-07-2018	25-07-2018		
18	Predictive Parser - Rule To Find First And Follow Function, Algorithm To Construct P P Table, Construction Of Predictive Parser For The Given Grammar, and Predictive Parsing Algorithm, And L L (1) Parser		BB	2		27	02-08-2018	02-08-2018		
19	Tutorial 2: L R (k) Parsers - S L R Parser Basic Requirements		LeD: Learning by Dialogue : NPTEL Videos	1		28	03-08-2018	03-08-2018		
20	Construction of SLR parser		BB	2		30	09-08-2018	09-08-2018		
21	Construction of CLR parser		BB	2		32	23-08-2018	23-08-2018		
22	Construction of LALR parser		BB	1		33	31-08-2018	31-08-2018		
23	Yacc Tool		BB	1		34	01-09-2018	01-09-2018		

24	UNIT III symbol tables - basics, data structures used for symbol tables, and representing scope information	Able to understand issues in symbol table and S D T schemes for generating intermediate codes	BB	2		36	05-09-2018	05-09-2018		
25	Syntax directed Translation: S-attributes And Inherited Attributes - S D T Schemes, Dependency Graph And Evaluation Order		BB	2		38	06-09-2018	06-09-2018		
26	Construction Of Syntax Tees And D A G		BB	1		39	07-09-2018	07-09-2018		
27	Intermediate Languages		BB	1		40	12-09-2018	12-09-2018		
28	S D T Scheme For Assignment Statements		BB	1		41	14-09-2018	14-09-2018		
29	S D T Scheme For Case Statements		BB	1		42	15-09-2018	15-09-2018		
30	UNIT IV Backpatching - S D T Scheme For Boolean Expressions	To familiarize with the concepts D T with backpatching in code generation	BB	2		44	18-09-2018	18-09-2018		
31	S D T Scheme For Control Flow Statements		BB	1		45	19-09-2018	19-09-2018		
32	S D T Scheme For Procedure Calls		BB	1		46	19-09-2018	19-09-2018		
33	Code Generation - Issues And Target Machine Architecture and Runtime Organization For Activation Records, Basic Blocks, And Flow graphs, Simple Code Generator, Construction Of D A G For Basic Block Statements		BB	3		49	28-09-2018	28-09-2018		
34	UNIT V Code Optimization - Peephole Optimization	To make familiar with various code optimization techniques and Run-time	BB	1		50	29-09-2018	29-09-2018		

35	Run-time Environment : Source Language Issues	storage management issues by compiler	BB	1		52	30-09-2018	30-09-2018		
36	Storage Organisation And R T S O Using Static Allocation Scheme		BB	1		53	03-10-2018	03-10-2018		
37	Stack, And Heap Allocation Schemes, Parameter Passing Schemes,and Access To Non-local Names		BB	2		55	09-10-2018	09-10-2018		
38	Code Optimization - Introduction, Principal Sources Of Optimization, Data Flow Analysis		BB	2		57	10-10-2018	10-10-2018		

Signature of the Faculty

Signature of the HOD:

Date:

IT306 (R16) Software Engineering

Academic Year : 2018-2019
Year & Semester : B.Tech / III Year I SEM (ITA Section & ITB SECTION)
Branch : Information Technology
Subject Code & Name : IT306 (R16) Software Engineering
Name of Faculty : K.Subramanyam/M.siddardha Kumar

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	Introduction	Syllabus, course objectives and course outcomes	LCD	1		1	11-06-2018	11-06-2018		
2	The Nature Of The Software.	Understand The Nature Of The Software.	BB	1		2	14-06-2018	14-06-2018		
3	Software Engineering	Understand Software Engineering	BB	1		3	15-06-2018	15-06-2018		
4	Software Engineering Process.	Understand the Software Engineering Process.	LCD	1		4	21-06-2018	21-06-2018		
5	Software Engineering Practice.	Understand the Software Engineering Practice	BB	1		5	23-06-2018	23-06-2018		

6	Software Process Model.	Understand Software Process Model.	BB	1		6	25-06-2018	25-06-2018		
7	Prescriptive Models	Familiarize with Prescriptive Models	LCD	1		7	25-06-2018	26-06-2018		
8	Evolutionary Models.	Understand the Evolutionary Models	LCD	1		8	28-06-2018	28-06-2018		
9	Prescriptive Models, specialized Process Models	Familiarize with Prescriptive Models, specialized Process Models	LCD	1		9	30-06-2018	30-06-2018		
10	Personal And Team Process Models.	Understand the Personal And Team Process Models.	LCD	1		10	02-07-2018	02-07-2018		
11	Process Technology, Process And Product.	Understand the Process Technology, Process And Product.	BB	1		11	02-07-2018	03-07-2018		
12	Agile Process.	Understand the Agile Process.	LCD	1		12	05-07-2018	05-07-2018		
13	Extreme Programming(xp)	Understand Extreme Programming(xp)	BB	1		13	05-07-2018	07-07-2018		
14	Ixp	Understand Ixp	BB	1		14	09-07-2018	09-07-2018		
15	Dsdm, Crystal And Fdd	Understand Dsdm, Crystal And Fdd	BB	1		15	10-07-2018	10-07-2018		
16	Lsd,am,aup And A Tool Set For Agile Process	Understand Lsd,am,aup And A Tool Set For Agile Process	LCD	1		16	16-07-2018	16-07-2018		
17	Software Engineering Knowledge	Understand Software Engineering Knowledge	LCD	1		17	17-07-2018	17-07-2018		

18	Core Principles.	Understand Core Principles.	BB	1		18	19-07-2018	19-07-2018		
19	Requirements Engineering.	Specify Requirements	BB	1		19	23-07-2018	23-07-2018		
20	Requirements Groundwork,elicitating Requirements	Understand Requirements Groundwork,elicitating Requirements	BB	1		20	26-07-2018	26-07-2018		
21	Developing Use Case,building Requirements Model.	Implementing use cases	BB	1		21	26-07-2018	28-07-2018		
22	Validating Requirements And Negotiating Requirements	Testing requirements	LCD	1		22	30-07-2018	30-07-2018		
23	Requirements Analysis.	Understand Requirements Analysis.	BB	1		23	31-07-2018	31-07-2018		
24	Data Modeling	Designing data model.	BB	1		24	02-08-2018	02-08-2018		
25	Class-based Modeling	Understand Class-based Modeling	BB	1		25	06-08-2018	06-08-2018		
26	Crc Modeling.	Design Crc Modeling.	BB	1		26	07-08-2018	07-08-2018		
27	Flow Oriented Model.	Understand Flow Oriented Model.	BB	1		27	09-08-2018	09-08-2018		
28	Pattern For Requirements Modeling	Understand Pattern For Requirements Modeling	BB	1		28	23-08-2018	23-08-2018		
29	Requirements Modeling For Webapps,	Understand Requirements	BB	1		29	27-08-2018	27-08-2018		

		Modeling For Webapps,								
30	Design Concepts	specify Design Concepts	BB	1		30	28-08-2018	28-08-2018		
31	Design Concepts.	Implement Design Concepts.	BB	1		31	29-08-2018	29-08-2018		
32	Design Process And Design Concepts	Understand Design Process And Design Concepts	LCD	1		32	01-09-2018	01-09-2018		
33	The Design Model	Understand the Design Model	LCD	1		33	01-09-2018	04-09-2018		
34	Software Architecture, architectural Genre, architectural Styles.	Understand Software Architecture, architectural Genre, architectural Styles.	LCD	1		34	04-09-2018	06-09-2018		
35	Architectural Design And Assessing Architectural Mapping.	Familiarize with Architectural Design And Assessing Architectural Mapping.	BB	1		35	11-09-2018	11-09-2018		
36	Component Level Design Principles , Cohesion And Coupling.	Understand Component Level Design Principles , Cohesion And Coupling.	BB	1		36	15-09-2018	15-09-2018		
37	Component Level Design, component Design For Web Apps And Component Based Development.	Understand Component Level Design, component Design For Web Apps And Component Based Development	BB	1		37	17-09-2018	17-09-2018		

38	Quality Concepts.	Understand Quality Concepts.	BB	1		38	18-09-2018	18-09-2018		
39	Software Testing Strategy And Approach	Testing software	BB	1		39	20-09-2018	20-09-2018		
40	Testing Strategies for Conventional and Object Oriented Software	Understand Testing Strategies for Conventional and Object Oriented Software	BB	1		40	20-09-2018	24-09-2018		
41	Testing Software Fundamentals.	Understand Testing Software Fundamentals.	BB	1		41	24-09-2018	25-09-2018		
42	Basis Path Testing.	Implement Basis Path Testing.	BB	1		42	25-09-2018	27-09-2018		
43	Black-box Testing And Model-based Testing.	Understand Differences Black-box Testing And Model-based Testing.	BB	1		43	29-09-2018	01-10-2018		
44	Patterns And Software Metrics.	Testing Patterns And Software Metrics.	BB	1		44	01-10-2018	04-10-2018		
45	Metrics For Small Organizations.	Understand Metrics For Small Organizations.	LCD	1		45	04-10-2018	06-10-2018		
46	Decomposition Techniques And Empirical Models	Understand Decomposition Techniques And Empirical Models	LCD	1		47	06-10-2018	08-10-2018		
47	The Make/buy Decision	Specifying The Make/buy Decision	LCD	1		48	14-03-2019	09-10-2018		

K.Subramanyam
Signature of the Faculty

A. Srikanth
Signature of the HOD:
Date:

LESSON PLAN

Academic Year: 2018-2019

Year & Semester: B. Tech / III Year II SEM (ITA Section & ITB SECTION)

Branch: Information Technology

Subject Code & Name: IT307 (R16) NETWORK PROGRAMMING

Name of Faculty: Sri. K Srinivasa Rao / Sri.B. Venkateswarlu

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** Osi Model	Introduce the main objective of the course and explain the fundamental concepts of computer networks	BB/LCD	1		1	26-11-2018	29-11-2018		
2	Daytime Server	Understand the various server steps in server side and implement simple daytime server	BB/LCD	2		3	28-11-2018	30-11-2018		
3	Daytime Client	Understand the various steps in client side and implement simple daytime client.	BB/LCD	1		4	28-11-2018	03-12-2018		

4	Tcp And Udp	Compare TCP and UDP	BB/LCD	1		5	29-11-2018	29-11-2018		
5	Tcp Connection Establishment And Termination	Familiarize with TCP connection establishment and Termination	BB	2		7	30-11-2018	30-11-2018		
6	Tcp State Transition Diagram	Understand different states in TCP State Transition Diagram	BB	2		9	03-12-2018	03-12-2018		
7	Standard Internet Services	List various Standard Internet Services	BB/ LCD	3		12	05-12-2018	05-12-2018		
8	Common Applications And Protocol Usage	Understand the usage of Protocols in common applications	BB/ LCD	1		13	10-12-2018	10-12-2018		
9	Socket Address Structure	Familiarize with Socket address structure	BB/ LCD	2		15	12-12-2018	12-12-2018		
10	Comparing Different Socket Address Structures	Comparing Different Socket Address Structures	BB/ LCD	1		16	13-12-2018	13-12-2018		
11	Byte Ordering Functions	Determine the byte order of host	BB/ LCD	1		17	15-12-2018	15-12-2018		
12	Byte Manipulation Functions	Understand different byte manipulation functions	BB/ LCD	2		19	17-12-2018	17-12-2018		
15	**UNIT - II** Tcp Socket Functions	Understand and model database requirements using Conceptual Data Model	BB/LCD	1		22	26-12-2018	26-12-2018		
16	Tcp Echo Server using socket functions	Implement Concurrent Echo Server using TCP	LCD	2		24	27-12-2018	27-12-2018		
17	Fork And Exec And Signal Handling	Implement Signal handler in Concurrent server	LCD	1		25	27-12-2018	27-12-2018		
18	Normal Start Up And Termination	**Understand the TCP client/server Scenario of normal startup**	**LCD**	**1**		**26**	28-12-2018	28-12-2018		

19	Server Abort And Server Reboot And Shutdown	Understand the TCP client/server Scenarios : Server abort and reboot, shutdown	BB	1		27	29-12-2018	29-12-2018		
20	Server Restart	Understand the TCP client/server Scenario Server Restart	BB	1		28	02-01-2019	02-01-2019		
21	Data Format	Investigate different data formats	BB	1		29	04-01-2019	04-01-2019		
22	Summary Of Tcp	Summarize the TCP	LCD	1		30	05-01-2019	05-01-2019		
23	**UNIT - III** Io Multiplexing	Understand the I/O Multiplexing	BB	1		31	09-01-2019	09-01-2019		
24	Io Models	Specify various I/O Models.	BB	1		32	10-01-2019	10-01-2019		
25	Comparison Of Io Models	Compare I/O Models	BB	1		33	11-01-2019	11-01-2019		
26	Select() Function And Demo Program	Understand select()	BB	1		34	15-01-2019	23-01-2019		
27	File Transfer Application	Implement file transfer application	BB/ LCD	1		35	16-01-2019	25-01-2019		
28	TCP Client Uing Select	Implement TCP client using select()	BB	1		36	06-02-2019	06-02-2019		
29	SCTP Association And Termination	Understand SCTP state transition diagram	BB	1		37	07-02-2019	07-02-2019		

30	Concurrent Server Using Select	Implement concurrent server using select	BB	1		38	08-02-2019	08-02-2019		
31	Batch Input	Understand batch input	BB	2		40	13-02-2019	13-02-2019		
32	**Tutorial 3 : RA and RC**	**Implement a TCP server which can process the client requests**	**LeD: Learning by Dialogue : NPTEL Videos**		**1**	**41**	14-02-2019	14-02-2019		
33	**UNIT – IV** Elementary Udp Functions	Understand the Elementary Udp Functions	BB/ LCD	1		42	15-02-2019	15-02-2019		
34	Udp Echo Client And Server	Implement upd echo client/server	BB/ LCD	1		43	16-02-2019	16-02-2019		
35	Lost Data Grams, Verifying Recieved Response	Familiarize with udp client server scenarios	BB	1		44	20-02-2019	20-02-2019		
36	Determining Outgoing Interface, Connected Udp	Understand the connected UDP sockets	BB	1		45	21-02-2019	21-02-2019		
37	Tcp Udp Server	Implement the TCP UDP server	BB	1		46	22-02-2019	22-02-2019		
38	Daemon Process: Ways To Start The Daemon	Understand Daemon process	BB	2		48	23-02-2019	23-02-2019		
39	Sylogd Daemon	Understand Suslogd Daemon	BB	1		49	27-02-2019	27-02-2019		
40	Syslog,openlog And Closelog Functions	Understand syslog, openlog and closelog functions	BB	1		50	01-03-2019	01-03-2019		

41	Daemonize The Process Using Daemon_init()	Create a daemon using Daemon_init()	BB	1		51	02-03-2019	02-03-2019		
42	Inetd Super Server	Understand Inetd super server	BB	1		52	05-03-2019	05-03-2019		
43	**UNIT - V**	**Design a service using configuration file**	**LeD: Learning by Dialogue : NPTEL Videos**		**1**	**53**	06-03-2019	06-03-2019		
44	Threads Introduction	Understand basics of about threads	BB	1		54	08-03-2019	08-03-2019		
45	Thread Api	Understand thread API	BB/ LCD	1		55	13-03-2019	13-03-2019		
47	Multi Thread Server/client	Implement multithread server/client	BB/ LCD	1		56	18-03-2019	18-03-2019		
48	Client Server Design Alternatives	Identify different client/server design alternatives	BB/ LCD	1		57	19-03-2019	19-03-2019		
49	Prefork server	Implemt Prefork server	BB/ LCD	1		58	20-03-2019	20-03-2019		
50	PreThread server	Implemt PreThread server	BB/ LCD	3		61	22-03-2019	22-03-2019		

Signature of the Faculty

Signature of the HOD:
Date:

IT308 (R16) DATA ENGINEERING

Academic Year : 2018-2019

Year & Semester : B.Tech / III Year II SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT308 (R16) DATA ENGINEERING

Name of Faculty : Dr V. Sesha Srinivas / Sri. K. Srinivasa Rao

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	Introduction To Data Mining	Introduce the main objective of the course and explain the fundamental concepts of data engineering	BB/ LCD	1		1	27-11-2018	27-11-2018		
2	Dataware House And Oltp Vs Olap	Differentiate OLAP and OLTP	BB/ LCD	2		2	29-11-2018	29-11-2018		
3	Dimensional Modeling	Draw the Star schema and snow flake	BB/ LCD	1		3	30-11-2018	30-11-2018		

		schemas for all electronic sales								
4	Data Warehouse Architecture	Understand the 3-tier architecture of DWH	BB/ LCD	1		4	01-12-2018	01-12-2018		
5	Olap Operations	Understand the Data warehouse operations	BB/ LCD	2		5	04-12-2018	04-12-2018		
6	Data Warehouse Design And Usage	Understand data ware house design process	BB/ LCD	2		6	11-12-2018	11-12-2018		
7	Kdd Process	Understand the Knowledge discovery in data bases	BB/ LCD	3		7	13-12-2018	13-12-2018		
8	Data Mining Functionalities	Understand the Data Mining Functionalities	BB/ LCD	1		8	14-12-2018	14-12-2018		
9	Data Mining Issues	Understand the Data Mining Issues.	BB/ LCD	2		9	15-12-2018	15-12-2018		
10	Data Ware House Implementation	Familiarize with the Data Ware House Implementation	BB/ LCD	1		10	15-12-2018	15-12-2018		
11	Data Mining Applications And Evolution	Understand the Evolution of Data mining	BB/ LCD	1		11	17-12-2018	17-12-2018		
12	Data Pre Processing	Understand various Data Pre Processing Techniques	BB/ LCD	2		12	21-12-2018	21-12-2018		
13	Data Cleaning	Understand Data cleaning process	BB/ LCD	1		13	27-12-2018	27-12-2018		
14	Data Integration	Understand Data Integration	**LeD: Learning by Dialog**		**1**	**14**	29-12-2018	29-12-2018		

			ue: NPTEL Videos							
15	Data Reduction	Understand Data Reduction	BB/LCD	1		15	31-12-2018	31-12-2018		
16	Types Of Data Objects	Identify Different data types	BB/ LCD	2		16	05-01-2019	05-01-2019		
17	Types Of Data Objects, Attributes	Understand data objects and attributes	BB/ LCD	1		17	07-01-2019	07-01-2019		
18	Proximity Measures	Understand Proximity Measures.	LeD: Learning by Dialogue: NPTEL Videos		1	18	08-01-2019	08-01-2019		
19	Proximity Measures	Solve the problems using Proximity Measures	BB	1		19	10-01-2019	10-01-2019		
20	Association Rule Mining	Understand Association Rule Mining	BB	1		20	21-01-2019	21-01-2019		
21	Apriori Algorithm	Implement Apriori Algorithm	BB	1		21	22-01-2019	22-01-2019		
22	Improvement In Apriori	Examine Improvement In Apriori	LCD	1		22	24-01-2019	24-01-2019		

23	Example Problems	Apply the data mining technique to sove the problems	BB/ LCD	1		23	28-01-2019	28-01-2019		
24	Fp Growth Algorith	Implement Fp Growth Algorith	BB/ LCD	1		24	07-02-2019	07-02-2019		
25	Example Of Apriori And Fp-growth	Solve problems using Apriori And Fp-growth	BB/ LCD	1		25	07-02-2019	07-02-2019		
26	Frequent Patterns Using Vertical Data Format	Understand Frequent Patterns Using Vertical Data Format	BB/ LCD	1		26	09-02-2019	09-02-2019		
27	Multi Level Association Mining	Understand Multi Level Association Mining	BB/ LCD	1		27	11-02-2019	11-02-2019		
28	Multi Dimensional Association Rule Mining	Understand Multi Dimensional Association Rule Mining	BB/ LCD	1		28	12-02-2019	12-02-2019		
29	Constraint Based Association Mining	Understand Constraint Based Association Mining	BB/ LCD	1		29	14-02-2019	14-02-2019		
30	Classification Basics	Understand Classification Basics	BB	1		30	16-02-2019	16-02-2019		
31	Classification By Decision Tree Induction	Implement Classification By Decision Tree Induction	BB/ LCD	2		31	18-02-2019	18-02-2019		

32	Splitting Criterion:	Understand Splitting Criterion:	LeD: Learning by Dialogue: NPTEL Videos		1	32	19-02-2019	19-02-2019		
33	Naive Baysian Classification	Implement Naive Baysian Classification	BB/ LCD	1		33	21-02-2019	21-02-2019		
34	Rule Based Classification	Understand Rule Based Classification	BB/ LCD	1		34	23-02-2019	23-02-2019		
35	Evaluation Of Classifiers	Familiarize Evaluation Of Classifiers	BB/ LCD	1		35	25-02-2019	25-02-2019		
36	Comparision Of Classifiers	Compare different Classifiers	BB/ LCD	1		36	26-02-2019	26-02-2019		
37	Clustering Methods	Understand the Clustering Methods	BB/ LCD	1		37	28-02-2019	28-02-2019		
38	K-means Algorithm	Implement K-means Algorithm	BB/ LCD	2		38	02-03-2019	02-03-2019		
39	Hierarchical Clustering	Understand Hierarchical Clustering	BB/ LCD	1		39	05-03-2019	05-03-2019		
40	Density Based Clustering	Understand Density Based Clustering	BB/ LCD	1		40	07-03-2019	07-03-2019		
41	Outlier Analysis	Understand Outlier Analysis	BB/ LCD	1		41	12-03-2019	12-03-2019		

42	Statistical Approaches	Understand various Statistical Approaches	BB/ LCD	1		42	14-03-2019	14-03-2019		
43	Statistical Approaches	Understand various Statistical Approaches	LeD: Learning by Dialogue: NPTEL Videos		1	43	19-03-2019	19-03-2019		
44	Proximity based Approaches	Understand various proximity based Approaches.	BB/ LCD	1		44	25-03-2019	25-03-2019		

Signature of the Faculty

Signature of the HOD:
Date:

IT309 (R16) Object Oriented Analysis and Design

Academic Year: 2018-2019

Year & Semester: B.Tech / III Year II SEM (ITA Section & ITB SECTION)

Branch: Information Technology

Subject Code & Name: IT309 (R16) Object Oriented Analysis and Design

Name of Faculty: Dr.M.Pompapathi / M.Siddardha Kumar

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** Introduction, Importance of studying this subject. Applications of this subject.	Introduce the main objective of the course and explain the fundamental concepts subject	BB	1		1	26-11-2018	26-11-2018		
2	Basic Object Oriented Concepts	Understand Object Oriented Concepts, Importance of object oriented approach rather than structured approach.	BB	1		2	27-11-2018	27-11-2018		
3	Characteristics of	Discuss	BB	1		3	29-11-	29-11-		

	Information System. Problems In Information System	Characteristics of Information System. Problems In Information System					2018	2018		
4	Avoiding The Problems in information system.	Understand how to avoiding The Problems in information system	BB	1		4	03-12-2018	03-12-2018		
5	Life Cycle Problems in Information system.	Understand Life Cycle Problems in Information system.	BB	1		5	04-12-2018	04-12-2018		
6	Conceptual Model of Uml, Various things in Uml.	Understand Conceptual Model of Uml, Various things in Uml.	LCD	1		6	06-12-2018	10-12-2018		
7	Relation Ships And Diagrams In Uml.	Understand Relation Ships And Diagrams In Uml.	BB/ LCD	1		7	07-12-2018	11-12-2018		
8	Implementing Activity Diagrams	Understand how to Implementing Activity Diagrams.	BB/ LCD	1		8	10-12-2018	13-12-2018		
9	**Tutorial 1:Introduction to Agate Ltd., Requirements Model.**	Studying Agate Information system and how to model requirements of Agate.	**LeD: Learning by Doing: Understand Rational Rose**		1	9	11-12-2018	15-12-2018		
10	**UNIT - II** Requirements Analysis: Use Case Realization, The Class	Understand the usecase realization to find out classes from	LCD	1		10	13-12-2018	17-12-2018		

	Diagrams	usecase								
11	Approaches for Identifying Classes.	Understand different Approaches to find out Classes.	LCD	1		11	17-12-2018	18-12-2018		
12	CRC Cards- Class Responsibility Collaborations Cards	Understand CRC Cards for Designing Classes.	BB/ LCD	1		12	18-12-2018	27-12-2018		
13	Assembling the Analysis Class Diagram.	Understand how to draw class diagrams.	BB/LCD	1		13	27-12-2018	28-12-2018		
14	Agate Ltd Case study - Requirements Analysis	Understand Agate Requirements and Model Agate Usecase Diagram.	LCD	1		14	28-12-2018	31-12-2018		
15	Refining the Requirements Model	Understand how to Refining the Requirements Model.	BB/LCD	1		15	02-1-2019	03-01-2019		
16	Component based development, Adding further structure,	Importance of Component Based Development for Object-Oriented Approaches.	BB	1		16	03-1-2019	03-01-2019		
17	Correlated Subqueries	Implement SQL queries using correlated subqueries	LCD	1		17	04-1-2019	04-01-2019		
18	Software development patterns.	Understand the usage and types of patterns.	BB/LCD	1		18	07-1-2019	07-01-2019		
19	Object Interaction and Collaboration	Understanding Object interactions.	BB	1		19	08-01-2019	08-01-2019		
20	Interaction Sequence Diagrams,	Understand how to model interactions using	LCD	1		20	09-01-2019	09-01-2019		

		Sequence Diagrams.								
21	Interaction Collaboration Diagrams, Model Consistency;	Understand how to model interactions using Collaboration Diagrams .	BB	1		21	10-01-2019	10-01-2019		
22	**Tutorial 2: Agate Interaction Diagrams**	Understand how to Model Interaction diagrams for Agate.	**LeD: Learning by Doing: Rational Rose**		1	22	11-01-2019	11-01-2019		
23	**UNIT - III** Specifying Operations: The Role of Operation Specifications, Contracts,	Understand the Role of Operation Specifications	BB	1		23	21-01-2019	21-01-2019		
24	Describing Operation Logic	Understand Approaches for Design Operational Logic.	BB/LCD	1		24	22-01-2019	22-01-2019		
25	Object Constraint Language, Creating an Operation Specification	Use of OCL for Designing Operations.	BB	1		25	23-01-2019	25-01-2019		
26	Specifying Control: States and Events, Basic Notation	Understand State machine, Events, Action Expressions	LCD	1		26	25-01-2019	28-01-2019		

27	Preparing a State chart Diagrams.	Understand Approaches for Designing State-Chart Diagrams.	LCD	1		27	28-01-2019	29-01-2019		
28	Consistency Checking, Quality Guidelines;	Specify Consistency Checking, Quality Guidelines	BB	1		28	29-01-2019	08-02-2019		
29	How is Design Different from Analysis?,Logical and Physical Design, System Design and Detailed Design	Analysis of Logical and Physical Design, System Design and Detailed Design	BB	1		29	06-02-2019	11-02-2019		
30	Qualities and objectives of Analysisand Design. Measurable Objectives in Design, Planning for Design.	Understanding Qualities and objectives of Analysis and Design.	BB	1		30	07-02-2019	12-02-2019		
31	**Tutorial 3:State chart Diagrams for Agate**	**Understand State Chart Diagrams.**	**LcD: Learning by Doing: Rational Rose**		**1**	31	08-02-2019	14-02-2019		
32	**UNIT - IV** The Major Elements of SystemDesign, Software Architecture. Different types of Architectures	Understand The Major Elements of System Design, Software Architecture.	LCD		1	32	08-02-2019	15-02-2019		
33	Prioritizing Design Trade-offs, Design for Implementation;	Understand Prioritizing Design Trade-offs, Design for Implementation;	BB/ LCD	1		33	14-02-2019	18-02-2019		

34	Object Design: Class Specification, Interfaces, Criteria for Good Design	Understand Object Design: ClassSpecification, Interfaces	LCD	1		34	15-02-2019	21-02-2019		
35	Designing Associations, Integrity Constraints	Understand how to Design Associations between classes.	BB/LCD	1		35	21-02-2019	25-02-2019		
36	Designing Operations, normalization	Understand Designing Operations between Classes and Normalization.	BB	1		36	22-02-2019	26-02-2019		
37	Design Patterns: Software Development Patterns,	Understand Different Patterns for Design the System. Creational, Structural, Behavioral Patterns.	LCD	1		37	26-02-2019	28-02-2019		
38	Documenting Patterns-Pattern Templates	Understand Documenting Patterns- Pattern Templates	BB/LCD	1		38	28-03-2019	05-03-2019		
39	**Tutorial 4: Class Diagrams For Agate Information System.**	**Design Class Diagram for Agate**	**LeD: Learning by Doing: Rational Rose**	1		39	01-03-2019	05-03-2019		
40	**UNIT - V** The Architecture of the Presentation Layer, Prototyping the User Interface	Understand Architecture of the Presentation Layer, Prototyping the User Interface	LCD	1		40	02-03-2019	08-03-2019		

41	Designing Classes, Designing with Sequence diagrams.	Understand how classes are design with Sequence Diagrams.	LCD	1		41	05-03-2019	11-03-2019		
42	User Interface Design Patterns, Modeling the Interface Using State charts	Understand User Interface Design Patterns.	LCD	1		42	06-03-2019	12-03-2019		
43	Software Implementation, Component Diagrams,	Understand Implementation Diagrams	BB/LCD	1		43	07-03-2019	14-03-2019		
44	Managing Object-Oriented Projects: Resource Allocation and Planning,	Understand Resource Allocation and Planning	LCD	1		44	14-03-2019	22-03-2019		
45	Critical Path Analysis, Gantt Charts Managing Iteration.	Understand how to find Critical Path, Gantt charts.	LCD	1		45	22-03-2019	23-03-2019		
46	Dynamic Systems Development Method, Extreme Programming.	Understand Dynamic Systems Development Method, Extreme Programming	LCD	1		46	23-03-2019	25-03-2019		

M-Siddardha Kumar

Signature of the Faculty

A. Srikanth

Signature of the HOD:

Date:

KGS (IT)

IT310 (R16) – Computer Network Security

Academic Year : 2018-2019

Year & Semester : B.Tech / III Year II SEM (IT A Section & B section)

Branch : Information Technology

Subject Code & Name : IT310 (R16)

Name of Faculty :Sri K.Gowri Sankar / Sri M.V.Bhujanga Rao

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture (L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	The OSI Security Architecture, Security Attacks.	Able to understand The OSI Security Architecture, Security Attacks.	BB/ LCD	1		1	26-11-2018	26-11-2018		
2	Security Services.	Able to know Security Services.	BB/ LCD	1		2	27-11-2018	27-11-2018		
3	Symmetric Chiper Model.	Able to Under stand Symmetric Chiper Model.	BB/ LCD	1		3	29-11-2018	29-11-2018		

4	Substitution Techniques.	Able to know Substitution Techniques.	BB/ LCD	1		4	01-12-2018	01-12-2018		
5	Transposition Techniques, Rotor Machines, Steganography.	Able to know Transposition Techniques, Rotor Machines, Steganography.	BB/ LCD	1		5	03-12-2018	03-12-2018		
6	Block Cipher Principles.	Able to know Block Cipher Principles.	BB/ LCD	1		6	04-12-2018	04-12-2018		
7	The DES, Strength of DES.	Able to understand able to know The DES, Strength of DES.	BB/ LCD	1		7	10-12-2018	10-12-2018		
8	Differential and Linear Cryptanalysis.	Able to know Differential and Linear Cryptanalysis.	BB/ LCD	1		8	11-12-2018	11-12-2018		
9	Block Cipher Design Principles.	Able to learn Block Cipher Design Principles.	BB/ LCD	1		9	12-12-2018 & 14-12-2018	12-12-2018 & 14-12-2018		
10	The AES cipher.	Able to understand The AES cipher.	BB/ LCD	2		11	15-12-2018	15-12-2018		
11	Block Cipher modes of Operation.	Able to learn Block Cipher modes of Operation.	BB/ LCD	1		12	18-12-2018	18-12-2018		
12	**UNIT - II** Prime Numbers, Fermat's and Euler's Theorems.	**UNIT - II** Familiarize with Prime Numbers, Fermat's and Euler's Theorems.	BB	1		13	18-12-2018	18-12-2018		

13	Testing for Primality.	Familiarize with Testing for Primality.	BB	1		14	20-12-2018	20-12-2018		
14	the Chinese Remainder Theorem.	Familiarize with Chinese Remainder Theorem.	BB	1		15	22-12-2018	22-12-2018		
15	Discrete Logarithms.	Familiarize with Discrete Logarithms.	**BB**	1		**16**	29-12-2018	29-12-2018		
16	Principles of Public – Key Cryptosystems.	Able to analyze Principles of Public – Key Cryptosystems.	BB/ LCD	1		17	03-01-2019	03-01-2019		
17	The RSA algorithm.	Able to know The RSA algorithm.	BB/ LCD	2		19	03-01-2019 & 05-01-2019	03-01-2019 & 05-01-2019		
18	Key Management, Diffie-Hellman Key Exchange.	Able to understand Key Management, Diffie-Hellman Key Exchange.	BB	1		20	07-01-2019	07-01-2019		
19	**UNIT - III** Authentication Requirements.	**UNIT - III** Able to know Authentication Requirements.	BB	1		21	08-01-2019	08-01-2019		
20	Authentication Functions.	Familiarize with Authentication Functions.	BB	2		23	10-01-2019 & 10-01-2019	10-01-2019 & 10-01-2019		
21	Message Authentication Codes.	Able to understand Message Authentication Codes.	BB	1		24	21-01-2019	21-01-2019		

22	Hash Functions.	Able to know Hash Functions.	BB/ LCD	1		25	22-01-2019	22-01-2019		
23	Security Hash Functions and MACs.	Able to learn Security Hash Functions and MACs.	BB/ LCD	1		26	24-01-2019	24-01-2019		
24	Secure Hash Algorithm, HMAC.	Able to know Secure Hash Algorithm, HMAC.	BB/ LCD	1		27	28-01-2019	28-01-2019		
25	Digital Signatures.	Able to understand Digital Signatures.	BB/ LCD	2		29	29-01-2019 & 07-02-2019	29-01-2019 & 07-02-2019		
26	Authentication Protocols.	Able to know Authentication Protocols.	BB/ LCD	1		30	09-02-2019	09-02-2019		
27	Digital Signature Standard.	Able to understand Digital Signature Standard.	BB/ LCD	2		32	11-02-2019 & 12-02-2019	11-02-2019 & 12-02-2019		
28	**UNIT - IV** Kerberos.	**UNIT - IV** Familiarize with Kerberos.	BB/ LCD	1		33	14-02-2019	14-02-2019		
29	X-509 Authentication Service.	Familiarize with X-509 Authentication Service.	BB/ LCD	1		34	16-02-2019	16-02-2019		
30	Pretty Good Privacy (PGP).	Familiarize with Pretty Good Privacy (PGP).	BB	1		35	18-02-2019	18-02-2019		

31	IP Security Overview, IP Security Architecture.	Able to know IP Security Overview, IP Security Architecture.	BB	2		37	19-02-2019 & 23-02-2019	19-02-2019 & 23-02-2019		
32	Authentication Header.	Able to know Authentication Header.	BB	1		38	25-02-2019	25-02-2019		
33	Encapsulating Security Pay Load,	Able to understand Encapsulating Security Pay Load,	BB	1		39	26-02-2019	26-02-2019		
34	Key Management.	Able to learn Key Management.	BB	1		40	28-02-2019	28-02-2019		
35	**UNIT - V** Secure Sockets Layer.	**UNIT - V** Able to know Secure Sockets Layer.	BB	1		41	02-03-2019	02-03-2019		
36	Transport Layer Security.	Able to know Transport Layer Security.	BB/ LCD	1		42	07-03-2019	07-03-2019		
37	Secure Electronic .Transaction.	Able to understand Secure Electronic .Transaction.	BB/ LCD	2		44	12-03-2019 & 14-03-2019	12-03-2019 & 14-03-2019		
38	Intruders, Intrusion Detection.	Able to learn Intruders, Intrusion Detection.	BB/ LCD	1		45	18-03-2019	18-03-2019		
39	Password Management.	Able to know Password Management.	BB/ LCD	1		46	19-03-2019	19-03-2019		
40	Firewall Design Principles.	Able to understand Firewall Design Principles.	BB/ LCD	1		47	23-03-2019	23-03-2019		

41	Trusted Systems.	Able to know Trusted Systems.	BB/ LCD	1		48	25-03-2019	25-03-2019		

Signature of the Faculty

Signature of the HOD:

Date:

IT312 D (R16) Mobile Application Development

Academic Year : 2018-2019
Year & Semester : B.Tech / III Year II SEM (312 D Elective)
Branch : Information Technology
Subject Code & Name : IT312 D (R16) Mobile Application Development
Name of Faculty : Y.Madhulika

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT-I** What Is Android? Android Versions, Features of Android, Architecture of Android, Android Devices in the Market, The Android Market	Introduce the main objective of the course and explain the architecture of android, android devices in the market	BB	1		1	27-11-2018	27-11-2018		
2	Obtaining the Required Tools Eclipse, Android SDK, Android Development Tools (ADT)	Able to install the tools required for android development.	LCD	1		2	29-11-2018	29-11-2018		
3	Creating Android Virtual Devices (AVDs), Creating Your First Android Application,	Able to create AVD and android application.	LCD	1		3	04-12-2018	04-12-2018		

4	Anatomy of an Android Application	Understand the anatomy of android application	LCD	1		4	06-12-2018	06-12-2018		
5	Understanding Activities: Applying Styles and Themes to Activity	Understand the life cycle of activity and able to apply styles and themes to activity.	LCD	1		5	07-12-2018	07-12-2018		
6	Hiding the Activity Title, displaying a Dialog Window, Displaying a Progress Dialog	Able to display dialog window and progress dialog.	LCD	1		6	11-12-2018	11-12-2018		
7	Linking Activities Using Intents: Resolving Intent Filter Collision, Returning Results from an Intent	Able to link activities using intents and return results from an intent.	LCD	1		7	14-12-2018	14-12-2018		
8	Passing Data Using an Intent Object, Fragments: Adding fragments dynamically	Understand the fragments and add the fragments dynamically.	LCD	1		8	15-12-2018	15-12-2018		
9	life cycle of a fragment, interaction between fragments, Calling Built-In Applications Using Intents: Understanding the Intent Object, Using Intent Filters, Adding Categories.	Understand the life cycle of fragment and interaction between them.	LCD	1		9	18-12-2018	18-12-2018		
10	**Tutorial 1: Installation of tools required for android application development.**	**Understand various tools**	**LeD: Learning by Dialogue: Videos**		**1**	**10**	20-12-2018	20-12-2018		

11	**UNIT-II** Understanding the Components of a Screen: Views and View Groups	Understand components of screen.	LCD	1		11	21-12-2018	21-12-2018		
12	Linear Layout , Absolute Layout , Table Layout	Able to create layouts.	LCD	1		12	27-12-2018	27-12-2018		
13	Relative Layout , Frame Layout , Scroll View	Able to create layouts.	LCD	1		13	28-12-2018	28-12-2018		
14	Adapting to Display Orientation: Anchoring Views , Resizing and Repositioning	**Understand the display orientation.**	LCD	**1**		**14**	29-12-2018	29-12-2018		
15	Managing Changes to Screen Orientation : Persisting State Information during Changes in Configuration, Detecting Orientation Changes	Able to manage changes to screen orientation.	LCD	1		15	03-01-2019	03-01-2019		
16	Controlling the Orientation of the Activity: Creating the User Interface Programmatically , Listening for UI Notifications	Understand the controlling of the orientation activity.	LCD	1		16	04-01-2019	04-01-2019		
17	Overriding Methods Defined in an Activity , Registering Events for Views.	Able to register events for views.	LCD	1		17	05-01-2019	05-01-2019		
18	**Tutorial 1: Components of a screen .**	**Understand the android screen and its components.**	**LeD: Learni ng by**		1	18	08-01-2019	08-01-2019		

			Dialogue: Videos							
19	**UNIT - III** Basic Views :Text View , Button, Image Button, Edit Text, Checkbox	Able to design user interfaces with basic views.	LCD	1		19	10-01-2019	10-01-2019		
20	Toggle Button, Radio Button, and Radio Group Views	Able to design user interfaces with basic views.	LCD	1		20	11-01-2019	11-01-2019		
21	Progress Bar View , Auto Complete Text View View	Able to design user interfaces with basic views.	LCD	1		21	22-01-2019	22-01-2019		
22	Picker Views:TimePicker View ,Displaying the Time Picker in a Dialog Window	Able to design time picker view.	LCD	1		22	24-01-2019	24-01-2019		
23	Date Picker View, Displaying the Date Picker View in a Dialog Window	Able to design date picker view.	LCD	1		23	25-01-2019	25-01-2019		
24	List Views : List View View , Customizing the List View ,Using the Spinner View.	Able to design list and spinner views.	LCD	1		24	29-01-2019	29-01-2019		
25	Using Image Views to Display Pictures	Able to design image views.	LCD	1		25	07-02-2019	07-02-2019		
26	Gallery and Image View Views, Image Switcher , Grid View	Able to deisgn Gallery view, image switcher and grid view.	LCD	1		26	08-02-2019	08-02-2019		
27	Using Menus with Views ,Creating the Helper	Able to create menus with views.	LCD	1		27	09-02-2019	09-02-2019		

	Methods									
28	Options Menu ,Context Menu	Able to create options and context menu.	LCD	1		28	12-02-2019	12-02-2019		
29	Some Additional Views , Analog Clock and Digital Clock Views , Web View	Able to create analog and digital clock views.	LCD	1		29	14-02-2019	14-02-2019		
30	**Tutorial 3 : Designing user interfaces using views.**	**Able to design user interfaces with views.**	**LeD: Learning by Dialogue: Videos**		**1**	**30**	15-02-2019	15-02-2019		
31	**UNIT - IV** **Data Persistance:** Saving and Loading User Preferences	Understand Data persistance	LCD	1		31	16-02-2019	16-02-2019		
32	Using getSharedPreferences(),Using get Preferences()	Understand data persistance using shared preferences.	LCD	1		32	19-02-2019	19-02-2019		
33	Persisting Data to Files	Able to save data to files	LCD	1		33	21-02-2019	21-02-2019		
34	Saving to Internal Storage ,Saving to External Storage (SD Card)	Able to save data to internal and external storage.	LCD	1		34	22-02-2019	22-02-2019		
35	Choosing the Best Storage Option, Using Static Resources	Able to choose best storage option.	LCD	1		35	23-02-2019	23-02-2019		
36	Creating and Using Databases	Able to create and use databases.	LCD	1		36	26-02-2019	26-02-2019		

37	Creating the DB Adapter Helper Class, Using the Database Programmatically	Able to create data base programmatically.	LCD	1		37	28-02-2019	28-02-2019		
38	Adding Contacts , Retrieving All the Contacts , Retrieving a Single Contact, Updating a Contact , Deleting a Contact	Able to create , retrive and delete contacts.	LCD	1		38	01-03-2019	01-03-2019		
39	Upgrading the Database, Pre-Creating the Database , Bundling the Database with an Application.	Understand the pre-creating data base and bundling with application.	LCD	1		39	02-03-2019	02-03-2019		
40	**Tutorial 4 : Data Persistance**	**Understand data persistance**	**LeD: Learning by Dialogue: Videos**		1	40	05-03-2019	05-03-2019		
41	**UNIT-V** Sharing Data in Android, using a Content Provider, Predefined Query String Constants, CONTENTS Projections, Filtering, Sorting	Able to share data using content providers.	LCD	1		41	07-03-2019	07-03-2019		
42	Creating Your Own Content Providers, Using the Content Provider.	Able to create and use our own content providers	LCD	1		42	08-03-2019	08-03-2019		
43	SMS Messaging, Sending SMS Messages Programmatically	Able to send SMS messagi ng.	LCD	1		43	12-03-2019	12-03-2019		
44	Getting Feedback After Sending the Message	Able to get feedback after sending	LCD	1		44	14-03-2019	14-03-2019		

		messages.								
45	Sending SMS Messages Using Intent, Receiving SMS Messages	Able to send receive SMS messages using intents.	LCD	1		45	19-03-2019	19-03-2019		
46	Updating an Activity from a Broadcast Receiver	Able to update activity from a broadcast receiver.	LCD	1		46	19-03-2019	19-03-2019		
47	Invoking an Activity from a Broadcast Receiver, Caveats and Warnings	Understand invoking activity from a broadcast receiver.	LCD	1		47	22-03-2019	22-03-2019		
48	Sending E-Mail , Networking :Downloading Binary Data	Understand networking	LCD	1		48	22-03-2019	22-03-2019		
49	Downloading Text Files , Accessing Web Services, Performing Asynchronous Calls.	Able to download binary and text data.	LCD	1		49	23-03-2019	23-03-2019		
50	**Tutorial 5 : content providers, networking and messaging.**	Able to create and use content provider, understand networking and messaging.	**LeD: Learning by Dialogue: Videos**		1	50	23-03-2019	23-03-2019		

Signature of the Faculty

Signature of the HOD:

Date:

IT312(B) (R16) ADVANCED DATABASE MANAGEMENT SYSTEMS

Academic Year : 2018-2019

Year & Semester : B.Tech / III Year II SEM (ITA Section & ITB SECTION-ELECTIVE)

Branch : Information Technology

Subject Code & Name : IT312(B) (R16) ADVANCED DATABASE MANAGEMENT SYSTEMS

Name of Faculty : Dr.B. Hemantha Kumar

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** Introduction to ADBMS, Course objectives and outcomes.	Introduce the main objectives and outcomes of the course and ADBMS.	BB	1		1	27-11-2018	27-11-2018		
2	Centralized DBMS Architecture	Understand the various DBMS Architectures	BB	1		2	29-11-2018	29-11-2018		
3	System Catalogs	Understand DBMS structures	BB	1		3	04-12-2018	04-12-2018		
4	System Catologs for internal,external schemas, Catalogs In Oracle	Understand various internal, external structures of DBMS	LCD	2		5	06-12-2018	06-12-2018		

		and Oracle								
5	DBMS S/w To Access Catalog	Understand the DBMS Catalog	BB	1		6	07-12-2018	07-12-2018		
6	Distributed DBMS Concepts	Understand Distributed DBMS .	BB	1		7	11-12-2018	11-12-2018		
7	Multi Database Systems	Familiarize with Multi Database Systems	BB	1		8	14-12-2018	14-12-2018		
8	Ddbms Functions	Understand various functionalities of DBMS	BB/ LCD	1		9	15-12-2018	15-12-2018		
9	Ddbms Architecture	Familiarize with Ddbms Architecture	BB/ LCD	1		10	18-12-2018	18-12-2018		
10	**UNIT - II** Ddbms Design, Concepts	Understand the design concepts of DBMS	BB/ LCD	1		11	20-12-2018	20-12-2018		
11	Fragmentation Rules, Types	Understand the usage data fragmentation	BB/ LCD	1		12	21-12-2018	21-12-2018		
12	Horizontal , Vertical and mixed Fragmentations	Understand the fragmentation types	BB/ LCD	2		14	28-12-2018	28-12-2018		
13	Transparencies In Ddbms	Understand various Data Base transparencies	BB	2		16	29-12-2018	29-12-2018		
14	Distributed Transparencies, Transaction Transparency and Classification Of Transactions	Understand various Transparencies	BB/LC D	3		19	05-01-2019	05-01-2019		

15	Performance Transparency	Understand the Performance of Transparency	BB	1		20	08-01-2019	08-01-2019		
16	Dates 12 Rules	Understand various rules of DDBMS	BB	1		21	10-01-2019	10-01-2019		
17	Distributed Transaction Management	Understand Distributed Transaction Management	LCD	2		23	11-01-2019	11-01-2019		
18	Distributed Concurrency Control	Understand Distributed Concurrency Control.	BB	1		24	22-01-2019	22-01-2019		
19	Locking Protocols, Distributed Dead Lock Detection	Familiarize with Ddbms Locking Protocols	BB	2		26	25-01-2019	25-01-2019		
20	Distributed DL Detection Methods	Understand DL detection methods	BB	1		27	29-01-2019	29-01-2019		
21	Two Phase Commit Protocol and Termination Protocol For 2pc	Understand Locking protocols	BB	2		29	08-02-2019	08-02-2019		
22	Communication Topology For 2pc	Understand Topologies in DDBMS	LCD	1		30	09-02-2019	09-02-2019		
23	Three Phase Commit Protocol	Understand the locking protocols	BB	1		31	12-02-2019	12-02-2019		
24	X-open Interface	Specify DDBMS interfaces .	LCD	2		33	14-02-2019	19-02-2019		

25	Replication Servers	Understand data replication	BB	1		34	16-02-2019	21-02-2019		
26	**UNIT – III** Advanced database applications	Understand advanced data base applications	BB	1		35	22-02-2019	22-02-2019		
27	Limitations of RDBMS	Understand Limitations of RDBMS	BB	1		36	23-02-2019	23-02-2019		
28	Mapping Classes and Relations	Understand Objects and Relations	BB	1		37	26-02-2019	26-02-2019		
29	Storing and accessing Objects	Understand Object database	BB	1		38	28-02-2019	28-02-2019		
30	OODBMS Concepts	Understand Object Oriented databases OODBMS Concepts	BB	1		39	28-02-2019	01-03-2019		
31	Pointer Swizzling	Understand Memory mapping	BB	1		40	01-03-2019	02-03-2019		
32	OODBMS Issues	specify issues of OODBMS	LCD	1		41	02-03-2019	05-03-2019		
33	**UNIT - IV** Oodbms Manifesto, Advantages , disadvantages	Familiarize with OODBMS	BB/ LCD	1		42	05-03-2019	07-03-2019		
34	Object Relational Database	Familiarize with ORDBMS	BB/ LCD	1		43	07-03-2019	08-03-2019		
35	3rd Generation Database Manifesto, Postgres	Understand 3rd Generation Databases	BB	1		44	08-03-2019	12-03-2019		

36	SQL3	Understand syntax of SQL3	LCD	1		45	12-03-2019	14-03-2019		
37	**UNIT - IV** Xml- Databases	Understand XML structures	LCD	1		46	14-03-2019	19-03-2019		
38	Mobile Database	Understand Mobile Databases	LCD	1		47	19-03-2019	20-03-2019		
39	Geographical Data	Understand GIS system	LCD	1		48	20-03-2019	22-03-2019		
40	Genome Data Management	Understand Genome Data	LCD	1		49	22-03-2019	23-03-2019		

Signature of the Faculty

Signature of the HOD:

Date:

IT351 (R16) WEB TECHNOLOGIES LAB

Academic Year : 2018-2019

Year & Semester : B.Tech / III Year I SEM (IT A Section & IT B SECTION)

Branch : Information Technology

Subject Code & Name : IT351 (R16) WEB TECHNOLOGIES LAB

Name of Faculty : Dr. B. Hemantha Kumar/Dr.G.Ramamohan Babu

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review/ Remarks (By HOD)
Week1	Program : static web site using HTML Frames, Tables, Lists, Anchor	Implement any static website using frames, forms, tables, etc.,	3	3	11-06-2018	11-06-2018	
Week2	Program: Write the CSS background, border, margin, font rules for a simple static website	Implement CSS rules any static website.	3	6	18-06-2018	18-06-2018	
Week3	Program: Java script to encrypt, decrypt and functions to find factorial, m power n.	Understand the usage data types, functions, recursive functions	3	9	25-06-2018	25-06-2018	
Week4	Program : Java script programs for Searching, sorting, matrix operations	Implementing sorting, searching and matrix operations using Arrays	3	12	02-07-2018	02-07-2018	
Week5	Program: Java script programs to dynamically change font color and size of text area	Implement events to change text color and size and using GUI components	3	15	16-07-2018	16-07-2018	

	using DOM events						
Week6	Program: Java script to dynamically o generate random sentences using DOM events and Math object	Implement events to generate random statements using DOM and Math random method.	3	18	23-07-2018	23-07-2018	
Week7	Program : Display all anchor elements in a given page into a XHTML table using DOM collections.	Implement all and children collections to select anchor elements	3	21	30-07-2018	30-07-2018	
Week8	Program : Display XML data in the XHTML table (Data Island). And program to Validate XML documents using DTD & XML Schema (XSD).	Implement XML and Data island using HTML document. Define DTD, and XSD to the XML	3	24	06-08-2018	06-08-2018	
Week9	Program :Display XML data in the XHTML table using XSL	Implement XML and XSL to transform XML to XSL.	3	27	27-08-2018	27-08-2018	
Week10	Program : Programs on ruby script to maintain employee information using class, find minimum and maximum values from a given set of numbers, and to demonstrate Ruby Hash structure.	Implement end user ruby console application using ruby class, function and hash structure	3	30	17-09-2018	17-09-2018	
Week11	Program : Design a web page to simulate Google suggests using AJAX.	Implement AJAX application to simulate Google suggestions.	3	33	24-09-2018	24-09-2018	
Week12	Program: Write a web application to display current	Implement Server side program using servlets using Generic	3	36	01-10-2018	01-10-2018	

	date and time and to demonstrate cookie and session.	Servlet					
Week13	Program : Write a Servlet application to validate user login details using HTTPServlet.	Implement login form data validations using servlets using HTTP Servlet	3	39	08-10-2018	08-10-2018	

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Signature of the HOD:
Date:

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required Lab	Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review/ Remarks (By HOD)
W1	Magic Square Program	Programming Skill	3	3	13-06-2018	13-06-2018	
W2	Finding Min-max Program Using Divide & Conquer	Application of DAndC	3	6	20-06-2018	20-06-2018	
W3	Merge Sort Using Links.	Application of DAndC	3	9	27-06-2018	27-06-2018	
W4	Knapsack Problem.	Application of Greedy	3	12	04-07-2018	04-07-2018	
W5	Knapsack Problem	Application of Greedy	3	15	07-07-2018	07-07-2018	
W6	Knapsack Problem Using Greedy Method	Application of Greedy	3	18	11-07-2018	11-07-2018	
W7	Kruskal Algorithm	Application of Greedy	3	21	18-07-2018	18-07-2018	
W8	Kruskal Algorithm And Dijkstras Algorithm	Application of Greedy	3	24	25-07-2018	25-07-2018	
W9	Multi Stage Graph Forward Approach	Application of Dynamic Programming	3	27	01-08-2018	01-08-2018	
W10	Multistage Graph, Backward Approach	Application of Dynamic Programming	3	30	08-08-2018	08-08-2018	
W11	All Pairs Shortest Paths Algorithm	Application of Dynamic Programming	3	33	29-08-2018	29-08-2018	
W12	Knapsack Problem Using Dp	Application of Dynamic	3	36	05-09-2018	05-09-2018	

		Programming					
W13	String Editing Using Dp	Application of Dynamic Programming	3	39	12-09-2018	12-09-2018	
W14	Biconnected Components	Application on Graphs	3	42	26-09-2018	26-09-2018	
W15	Graph Coloring Using Backtracking	Application of Backtracking	3	45	03-10-2018	03-10-2018	
W16	Knapsack Using Backtracking.	Application of Backtracking	3	48	10-10-2018	10-10-2018	

Signature of Faculty

Signature of HoD
Date:

IT353(R16) UNIX PROGRAMMING LAB

Academic Year : 2018-2019

Year & Semester : B.Tech / III Year I SEM (ITA Section)

Branch : Information Technology

Subject Code & Name : IT353(R16) UNIX PROGRAMMING LAB

Name of Faculty : Sri G. SRINIVASA RAO

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review / Remarks (By HOD)
Week1	.Working with different unix commands	.Understand unix environment and execution of unix commands	3	3	13-06-2018	15-06-2018	
Week2	Working with different unix commands and AWK prgramming.	.Understand usage of unix commands and execution of AWK scripts	3	6	15-06-2018	22-06-2018	
Week3	.Unix shell programs	Understand implementation of unix Bourne shell scripts	3	9	22-06-2018	29-06-2018	
Week4	Unix shell programming	Understand implementation of unix Bourne shell scripts using arrays and functions	3	12	29-06-2018	06-07-2018	
Week5	.C programs using unix file management system calls	Understand implementation of .C programs using unix file management system calls	3	15	06-07-2018	13-07-2018	
Week6	.C programs using unix process management system	. Understand implementation of .C programs using unix process	3	18	13-07-2018	03-08-2018	

	calls	management system calls					
Week7	.C programs using unix signals	.. . Understand implementation of .C programs using unix signals	3	21	03-08-2018	24-08-2018	
Week8	IPC using unnamed pipes	Understand the implementation of IPC using unnamed pipes in unix.	3	24	24-08-2018	31-08-2018	
Week9	IPC using named pipes	Understand the implementation of IPC using named pipes in unix.	3	27	31-08-2018	14-09-2018	
Week10	IPC using shared memory	. Understand the implementation of IPC using shared memory system calls in unix	3	30	14-09-2018	28-09-2018	
Week11	IPC using unix socket programming	. Understand the implementation of IPC using socket programming system calls in unix	3	33	28-09-2018	05-10-2010	

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Date:

LESSON PLAN

Academic Year: 2018-2019

Year & Semester: B. Tech / III Year II SEM (ITA Section & ITB SECTION)

Branch: Information Technology

Subject Code & Name: IT354 (R16) NETWORK PROGRAMMING LAB

Name of Faculty: Sri.K. Srinivasa Rao / Sri.B. Venkateswarlu.

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review / Remarks (By HOD)
Week1	Daytime Server	Create/implement database table for any application by enforcing constraints to the database tables	3	3	28-11-2018	28-11-2018	
Week2	Echo Server And Client	Understand the usage of null value and comparison and special comparison operators in specifying retrieval requests to the database tables.	3	6	05-12-2018	05-12-2018	
Week3	Echo Server To Reverse The String	Understand the usage of Datetime Functions and Conversion Function In S Q L	3	9	12-12-2018	12-12-2018	
Week4	Concurrent Server Using Fork()	Understand the usage of General and group Functions In S Q L	3	12	19-12-2018	19-12-2018	
Week5	Signal Handling	Understand the usage of Set Operators, Joins In S Q L, Subqueries and Correlated	3	15	26-12-2018	26-12-2018	

		Subqueries in SQL					
Week6	Tcp Server To Add Two Integers	Implement end user retrieval requests through basic queries on employee, department tables	3	18	02-01-2019	02-01-2019	
Week7	File Transfer Using Tcp	Implement end user retrieval requests through SQL functions, joins and nested queries on employee, department tables	3	21	09-01-2019	09-01-2019	
Week8	File Tranfer Using Tcp	Implement end user retrieval requests through basic queries on COMPANY database tables.	3	24	23-01-2019	23-01-2019	
Week9	Concurrent Server Using Select()	Implement end user retrieval requests on COMPANY database tables using joins, subqueries, EXISTS operator.	3	27	06-02-2019	06-02-2019	
Week10	Udp Echo Server	Implement unnamed blocks to calculate gross salary of an entered employee number from the database table	3	30	13-02-2019	20-02-2019	
Week11	Concurrent Server Using Poll	Implement cursors and pre-defined and user defined exception handling in PL/SQL.	3	33	20-02-2019	27-02-2019	
Week12	Tcp Udp Server	Implement named blocks using subprograms.	3	36	27-02-2019	06-03-2019	
Week13	Multi-thread Server / Client	Design the database tables using SCHEMA BUILDER	3	39	06-03-2019	13-03-2019	
Week14	Day time server as daemon	Specify queries using QUERY BUILDER for end user requirements	3	42	13-03-2019	20-03-2019	

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Signature of the HOD:
Date:

IT355 (R16) DATA ENGINEERING LAB

Academic Year : 2018-2019

Year & Semester : B.Tech / III Year II SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT355 (R16) DATA ENGINEERING LAB

Name of Faculty : Dr.V.Sesha Srinivas / Sri.K.Srinivasa Rao

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review / Remarks (By HOD)
Week1	Creating Star Schema/snowflake Schema / Fact constellation Schema using any tool a) All Electronics sales application. b) Identify the facts and dimensions for banking environment.	Design and implement data warehouse schemas for applications by using Schema Builder and oracle SQL	3	3	30-11-2018	30-11-2018	
Week2	Compute all the cuboids of 4D cube using group-bys.	Compute all the cuboids of 4D cube using group-bys.	3	6	03-12-2018	03-12-2018	
Week3	Compute all the cuboids of 4D cube using Rollup and Cube operators of oracle SQL.	Compute all the cuboids of 4D cube using Rollup and Cube operators of oracle SQL.	3	9	14-12-2018	14-12-2018	

Week4	SQL queries for implementing different OLAP operations.	SQL queries for implementing different OLAP operations.	3	12	21-12-2018	21-12-2018	
Week5	Design and develop different types of data transformations using a software tool.	Design and develop different types of data transformations using Microsoft BI Tool.	3	15	28-12-2018	28-12-2018	
Week6	Build ETL solutions using a software tool.	Build ETL solutions using Microsoft BI Tool	3	18	04-01-2019	04-01-2019	
Week7	Write high level language programs to implement different data pre-processing techniques.	Write high level language programs to implement different data pre-processing techniques.	3	21	11-01-2019	11-01-2019	
Week8	Mine strong association rules out of a given data set using a mining tool.	Identify strong association rules out of a given data set using a mining tool.	3	24	25-01-2019	25-01-2019	
Week9	Write high level language programs to implement Association rule mining/ classification/clustering techniques.	Write high level language programs to implement Association rule mining/ classification/clustering techniques. .	3	27	08-02-2019	08-02-2019	
Week10	Write high level language programs to implement Association rule mining/ classification/clustering techniques.	Write high level language programs to implement Association rule mining/ classification/clustering techniques.	3	30	22-02-2019	22-02-2019	
Week11	Implement various classification techniques on data sets using a data mining tool.	Implement various classification techniques on data sets using a data mining tool.	3	33	01-03-2019	01-03-2019	

Week12	Cluster the given set of data objects by applying various clustering techniques using a data mining tool.	Cluster the given set of data objects by applying various clustering techniques using a data mining tool.	3	36	08-03-2019	08-03-2019	
Week13	Estimate the values of numeric attributes, through Prediction, using a data mining tool.	Estimate the values of numeric attributes, through prediction, using a data mining tool.	3	39	22-03-2019	22-03-2019	

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Date:

IT356 (R16) Object Oriented Analysis and Design LAB

Academic Year : 2018-2019

Year & Semester : B.Tech / III Year II SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT356 (R16) Object Oriented Analysis and Design LAB

Name of Faculty : Dr.M.Pompapathi / M.Siddardha Kumar

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review / Remarks (By HOD)
Week1	Introduction To UML, Importance of UML for object oriented systems, various diagrams in UML.	Understand how to represent various UML diagrams in different views in Rational Rose software. use case view, logical view, component view and deployment view	3	3	28-11-2018	28-11-2018	
Week2	Studying different Information systems.	How to understand different information systems. Identify requirements from information system.	3	6	05-12-2018	05-12-2018	
Week3	Implementing usecase diagrams.	Understand how to draw usecase diagrams.	3	9	12-12-2018	12-12-2018	
Week4	Implementing flow of events.	Understand how to model flow of events for the usecases.	3	12	19-12-2018	19-12-2018	
Week5	Implementing Activity diagrams.	Understand how to draw Activity	3	15	26-12-2018	26-12-2018	

		diagrams.					
Week6	Mini project batches formation and identify mini project titles.	Identify the projects for batches.	3	18	02-01-2019	02-01-2019	
Week7	Implementing usecase and activity diagrams for mini project	Understand how to Implementing usecase and activity diagrams for mini project.	3	21	09-01-2019	09-01-2019	
Week8	Applying Usecase Realization.	Understand how to apply realization to usecase for finding classes.	3	24	23-01-2019	23-01-2019	
Week9	Implementing Interaction Sequence diagrams.	Understand how to Implementing Interaction Sequence diagrams.	3	27	06-02-2019	06-02-2019	
Week10	Implementing Interaction collaboration diagrams.	Understand how to Implementing Interaction collaboration diagrams.	3	30	13-02-2019	13-02-2019	
Week11	Implementing Class Diagrams.	Understand how to Implementing Class Diagrams.	3	33	20-02-2019	20-02-2019	
Week12	Implementing Statechart Diagrams.	Understand how to Implementing Statechart Diagrams	3	36	27-02-2019	27-02-2019	
Week13	Implementing Component Diagrams	Understand how to Implementing Component Diagrams	3	39	06-03-2019	06-03-2019	
Week14	Implementing Deployment Diagrams	Understand how to Implementing Deployment Diagrams	3	42	13-03-2019	13-03-2019	
Week15	Review the diagrams and clarify Doubts.	Revise the diagrams for mini project .	3	45	20-03-2019	20-03-2019	

Signature of the Faculty

Signature of the HOD:

Date:

LESSON PLAN

Academic Year : 2019-2020

Year & Semester : B.Tech / IV Year 7Th SEM (IT B Section)

Branch : Information Technology

Subject Code & Name : IT401 (R16)

Name of Faculty : Dr N.Naga Malleswara Rao/Sri M.V.Bhujanga Rao

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT I** Definition of a Distributed System.	**UNIT I** Able to know the Definition of a Distributed System.	BB	1		1	07-06-2019	07-06-2019		
2	Goals.	Understand the Goals of distributed sysytems	BB	1		2	12-06-2019	12-06-2019		

3	Types Of Distributed Systems.	Familiarize with Types of Distributed Systems.	BB	1		3	14-06-2019	14-06-2019		
4	Distributed Computing Systems.	Able to know Distributed Computing Systems.	BB	1		4	15-07-2019	15-07-2019		
5	Distributed Information Systems.	Able to know Distributed Information Systems.	BB	1		5	17-06-2019	17-06-2019		
6	Architectural Styles.	Familiarize with Architectural Styles.	BB	1		6	19-06-2019	19-06-2019		
7	System Architectures. Centralized Architectures.	Familiarize with System Architectures. Familiarize with Centralized Architectures.	BB	1		7	21-06-2019	21-06-2019		

8	Decentralized Architectures. Hybrid Architectures.	Familiarize with Decentralized Architectures. Familiarize with Hybrid Architectures.	BB	1		8	22-06-2019	22-06-2019		
9	Architectures Versus Middleware. Interceptors. General Approaches and Adaptive Software.	Able to understand Architectures Versus and Middleware. Interceptors. Able to understand General Approaches and Adaptive Software.	BB	1		9	24-06-2019	24-06-2019		
10	Self-Management In Distributed Systems. and The Feedback Control Model.	Able to know Self-Management In Distributed Systems and The Feedback Control Model.	BB	1		10	26-04-2019	26-04-2019		
11	Example: Systems	Able to understand	BB	1		11	28-06-	28-06-		

	Monitoring With Astrolabe.	Example: Systems Monitoring With Astrolabe.					2019	2019		
12	Example: Differentiating Replication Strategies In Globule Example: Automatic Component Repair Management In Jade	Able to understand Example: Differentiating Replication Strategies In Globule Example: Automatic Component Repair Management In Jade	BB	1		12	01-07-2019	01-07-2019		
13	**UNIT II** Threads.	**UNIT II** Able to know Threads.	BB	2		13	03-07-2019	03-07-2019		
14	Virtualization.	Able to know Virtualization.	BB	1		14	05-07-2019	05-07-2019		

15	Clients.	Able to know Clients.	BB	1		15	06-07-2019	06-07-2019		
16	Networked User Interfaces.	Able to know Networked User Interfaces.	BB	1		16	08-07-2019	08-07-2019		
17	Client-Side Software for Distribution Transparency.	Able to know Client-Side Software for Distribution Transparency.	BB	1		17	10-07-2019	10-07-2019		
18	Servers.	Able to know Servers.	BB	1		18	12-07-2019	12-07-2019		
19	Code Migration.	Able to know Code Migration.	BB	1		19	15-07-2019	15-07-2019		
20	Fundamentals	Able to understand Fundamentals	BB	1		20	17-07-2019	17-07-2019		

21	Remote Procedure Call.	Able to know Remote Procedure Call.	BB	1		21	19-07-2019	19-07-2019		
22	Remote Procedure Call.	Able to know Remote Procedure Call.	BB	1		22	20-07-2019	20-07-2019		
23	Message-Oriented Communication	Able to know Message-Oriented Communication	BB	1		23	22-07-2019	22-07-2019		
24	Stream-Oriented Communication.	Able to know Stream-Oriented Communication.	BB	1		24	24-07-2019	24-07-2019		
25	Multicast Communication	Able to know Multicast Communication	BB	1		25	26-07-2019	26-07-2019		
26	Multicast Communication	Able to know Multicast Communication	BB	1		26	27-07-2019	27-07-2019		
27	**UNIT III** Names, Identifiers, and Addresses	**UNIT III** Able to understand Names, Identifiers, and	BB	1		27	29-07-2019	29-07-2019		

		Addresses								
28	Flat Naming	Able to understand Flat Naming	BB	1		28	31-07-2019	31-07-2019		
29	Structured Naming	Able to understand Structured Naming	BB	1		29	02-08-2019	02-08-2019		
30	Attribute-Based Naming	Able to understand Attribute-Based Naming	BB	1		30	03-08-2019	03-08-2019		
31	Clock Synchronization	Able to understand Clock Synchronization	BB	1		31	05-08-2019	05-08-2019		
32	Logical Clocks	Able to understand Logical Clocks	BB	1		32	07-08-2019	07-08-2019		
33	Mutual Exclusion	Able to understand Mutual Exclusion	BB	1		33	09-08-2019	09-08-2019		
34	Global Positioning of Nodes. Election Algorithms	Able to understand Global Positioning of Nodes. Election Algorithms	BB	1		34	14-08-2019	14-08-2019		
35	**UNIT IV** Consistency and Replication Introduction	**UNIT IV** Familiarize with Consistency and Replication	BB	1		35	16-08-2019	16-08-2019		

		Introduction								
36	Data-Centric Consistency Models	Able to understand Data-Centric Consistency Models	BB	1		36	17-08-2019	17-08-2019		
37	Client-Centric Consistency Models	Familiarize with Client-Centric Consistency Models	BB	1		37	19-08-2019	19-08-2019		
38	Replica Management	Able to understand Replica Management	BB	1		38	21-08-2019	21-08-2019		
39	Consistency Protocols	Able to understand Consistency Protocols	BB	1		39	23-08-2019	23-08-2019		
40	Introduction io Fault Tolerance	Familiarize with Introduction io Fault Tolerance	BB	1		40	26-08-2019	26-08-2019		
41	Process Resilience	Able to understand Process Resilience	BB	1		41	28-08-2019	28-08-2019		
42	Reliable Client-Server Communication	Able to understand Reliable Client-Server Communication	BB	1		42	30-08-2019	30-08-2019		
43	Reliable Group Communication	Familiarize with Reliable Group Communication	BB	1		43	31-08-2019	31-08-2019		
44	Distributed Commit	Able to understand	BB	1		44	04-09-2019	04-09-2019		

		Distributed Commit								
45	Recovery	Familiarize with Recovery	BB	1		45	06-09-2019	06-09-2019		
46	**Unit V** Distributed File Systems Introduction	**Unit V** Familiarize with Distributed File Systems Introduction	BB	1		46	07-09-2019	07-09-2019		
47	Architecture	Able to know Architecture	BB	1		47	09-09-2019	09-09-2019		
48	Processes	Able to know Processes	BB	1		48	11-09-2019	11-09-2019		
49	Communication	Able to know Communication	BB	1		49	13-09-2019	13-09-2019		
50	Naming	Able to know Naming	BB	1		50	14-09-2019	14-09-2019		
51	Synchronization	Able to know Synchronization	BB	1		51	16-09-2019	16-09-2019		
52	Consistency and Replication	Able to understand Consistency and Replication	BB	1		52	18-09-2019	18-09-2019		
53	Fault Tolerance	Able to understand Fault Tolerance	BB	1		53	20-09-2019	20-09-2019		
54	Security	Able to know Security	BB	1		54	21-09-2019	21-09-2019		
55	Distributed Web-Based Systems Introduction	Distributed Web-Based Systems Introduction	BB	1		55	23-09-2019	23-09-2019		
56	Architecture	Able to understand Architecture	BB	1		56	25-09-2019	25-09-2019		

57	Processes	Able to know Processes	BB	1		57	27-09-2019	27-09-2019		
58	Communication	Able to understand Communication	BB	1		58	28-09-2019	28-09-2019		
59	Naming	Able to understand Able to understand Naming	BB	1		59	30-09-2019	30-09-2019		
69	Synchronization	Able to understand Synchronization	BB	1		69	04-10-2019	04-10-2019		
61	Consistency and Replication	Able to understand Consistency and Replication	BB	1/2		61	05-10-2019	05-10-2019		
62	Fault Tolerance	Able to understand Fault Tolerance	BB	1/2		62	05-10-2019	05-10-2019		

Signature of the Faculty

Signature of the HOD:

Date:

LESSON PLAN

Academic Year : 2019-2020

Year & Semester : B.Tech / IV Year I SEM (IT-A Section & IT-B SECTION)

Branch : Information Technology

Subject Code & Name : IT402 (R16) WEB SERVICES

Name of Faculty : Dr. B. Hemantha Kumar/Smt. Y. Madhulika

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** Introduction To J2ee Web Services	Introduce the main objectives and outcomes of the course and Web Services.	BB	1		1	06-06-2019	10-06-2019		
2	J2ee Multi-tier Architecture	Understand different tiers	BB	2		3	10-06-2019	12-06-2019		
3	J2ee 4 Tier Implementation	Understand different technologies to implement 4 tier architecture	LCD	1		4	12-06-2019	13-06-2019		
4	Introduction to JSP	Understand JSP server side technology	BB	1		5	13-06-2019	15-06-2019		
5	Jsp Tags	Understand different JSP elements	BB	1		6	17-06-2019	24-06-2019	CRT program	
6	Jsp Directive Tags	Understand how to provide Directive tags	BB	1		7	19-06-2019	26-06-2019	CRT program	

7	Jsp Page Directive Tag, Examples	Familiarize with JSP directive tags .	BB/ LCD	1		8	20-06-2019	27-06-2019	CRT program	
8	**JSP Action Tags, example**	Understand the usage of **JSP Action Tags**	BB/ LCD	2		10	22-06-2019	28-06-2019	CRT program	
9	Jsp Forward, Include Action Tags, Examples	Understand how to provide Jsp Forward, Include Action Tags	BB	1		11	24-06-2019	01-07-2019		
10	Jsp Bean	Familiarize with JSP Beans	BB/ LCD	1		12	26-06-2019	03-07-2019		
11	Jsp Implicit Objects	**Understand the usage of** Jsp Implicit Objects	**BB**	**1**		**13**	27-06-2019	11-07-2019		
12	Jsp Sessions & Cookies	Understand the Session Tracking Mechanism	BB	1		14	28-06-2019	15-07-2019		
13	**Jsp Examples**	**Understand how to use various JSP tags**	**BB**		**1**	**15**	**01-07-2019**	**16-07-2019**		
14	**UNIT - II** Jsp tag library	Understand various tag libraries	BB	1		16	03-07-2019	17-07-2019		
15	Jsp Tag Lifecycle	Understand Tag Life cycle methods	BB	1		17	11-07-2019	18-07-2019		
16	Tag Life Cycle Example	Familiarize with custom tags	BB	1		18	15-07-2019	20-07-2019		
17	Java-xml, Creating Xml Document	Understand the usage of XML.	BB	2		20	16-07-2019	22-07-2019		
18	Xml Dom Parser, Examples	Understand how the DOM parser parse the XML	BB	1		21	17-07-2019	24-07-2019		
19	Xml Sax Parser, Example	Understand how the event driven SAX parser parse the XML	BB	2		23	18-07-2019	25-07-2019		
20	**Jstl Tag Libraries**	**Understand different JSTL libraries**	**BB**		**1**	**24**	20-07-2019	27-07-2019		
21	**UNIT - III** Enter Prize Java Beans, Introduction	Understand the usage Enter Prize Beans	BB	1		25	22-07-2019	29-07-2019		
22	Ejb Types Of Beans	Understand various types of Enter Prize Beans	LCD	2		27	25-07-2019	31-07-2019		

23	Session Bean	Understand the usage of Session Bean	BB	1		28	27-07-2019	06-08-2019		
24	Session Bean Life Cycle Methods, Example	Understand the life cycle methods of Session Bean	LCD	1		29	29-07-2019	08-08-2019		
25	Creating Session Bean	Familiarize with creating Session Bean	LCD	1		30	31-07-2019	14-08-2019		
26	Entity Bean Life Cycle	Understand the life cycle methods of entity Bean	LCD	1		31	06-08-2019	28-08-2019		
27	Creating Entity Bean	Familiarize with creating Entity Bean	BB	2		33	08-08-2019	31-08-2019		
28	**Message Driven Bean**	**Familiarize with creating Message Driven Bean**	**LCD**		**2**	**35**	**14-08-2019**	**05-09-2019**		
29	Java-mail Api- Protocols, components	Understand various mail protocols and components to create mail user agent applications.	BB	2		37	28-08-2019	11-09-2019		
30	Send Mail & Read Mail	Familiarize with Creating and Reading mail using java mail api	BB	1		38	31-08-2019	12-09-2019		
31	**Mail Attachment, Delete, Exceptions**	**Understand how to attach files to mail and how to delete mails from INBOX**	**BB/ LCD**		**1**	**39**	**05-09-2019**	**14-09-2019**		
32	UNIT - IV RMI Technology	Understand distributed RMI Technology	BB/ LCD	2		41	11-09-2019	16-09-2019		
33	Creating RMI application	Understand how to create distributed applications using RMI	BB/ LCD	2		43	12-09-2019	17-09-2019		
34	Java Idl-CORBA Technology	Understand distributed applications	BB	1		44	13-09-2019	17-09-2019		
35	Java-idl CORBA	Understand how to create distributed applications using CORBA standards	BB/LCD	1		45	14-09-2019	18-09-2019		
36	Web Service technology	Understand various web services	LCD	1		46	15-09-2019	18-09-2019		

37	Web Service components	Understand various web service components	LCD	1		47	17-09-2019	19-09-2019		
38	**Web Services, Example**	**Understand how to create a web service**	**LCD**		**2**	**49**	**17-09-2019**	**21-09-2019**		
39	**UNIT - V** SOAP technology	Understand requirement of SOAP	BB	1		50	18-09-2019	23-09-2019		
40	SOAP elements	Understand SOAP elements	LCD	1		51	19-09-2019	25-09-2019		
41	SOAP example	Understand SOAP messaging System	LCD	1		52	21-09-2019	25-09-2019		
42	WSDL	Understand importance WSDL	BB	1		53	23-09-2019	26-09-2019		
43	WSDL elements	Understand WSDL elements	BB	1		54	25-09-2019	26-09-2019		
44	WSDL example	Understand how to create a WSDL document	BB	1		55	26-09-2019	28-09-2019		
45	UDDI technology	Understand how to register Web service	BB	1		56	28-09-2019	30-09-2019		
46	Publisher APIs	Understand various Publisher API calls	LCD	2		58	30-09-2019	01-10-2019		
47	Enquiry APIs	Understand various Enquiry API calls	LCD	1		59	01-10-2019	03-10-2019		
48	**UDDI example**	**Understand various Enquiry API calls**	**LCD**		**1**	**60**	**03-10-2019**	**05-10-2019**		

Signature of the Faculty

Signature of the HOD:
Date:

LESSON PLAN

Academic Year : 2019-2020

Year & Semester : B.Tech / IV Year I SEM (OPEN ELECTIVE)

Branch : Information Technology

Subject Code & Name : IT404B (R16) WEB TECHNOLOGIES

Name of Faculty : Sri. V. Venkata Srinivasu

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** **Fundamentals:** A Brief introduction to the internet, the world wide web	Introduce the main objective of the course and explain the fundamental concepts of internet	BB	1		1	07-06-2019	07-06-2019		
2	Web browsers, web servers, uniform resource locators, MIME, The HTTP	Understand the various web browsers, web servers, URL, MIME, and HTTP	BB	1		2	07-06-2019	07-06-2019		
3	**Introduction to XHTML:** Introduction to html, origins and evolution of HTML and XHTML,	Able to understand html, orignins and evolution of HTML and XHTML	BB	2		4	12-06-2019	14-06-2019		

4	Basic syntax, standard XHTML, document structures, basic text markup	Understand the basic syntax of HTML, document structures and basic text markup	LCD	2		6	14-06-2019	19-06-2019		
5	Images, hypertext links, lists	Understand the image, hypertext links and lists tags	LCD	2		8	19-06-2019	21-06-2019		
6	Tables, frames and syntactic differences between HTML & XHTML	Understand the tables, frames	BB/LCD	2		10	21-06-2019	26-06-2019		
7	syntactic differences between html & xhtml	Familiarize with syntactic differences between html & xhtml	BB/ LCD	2		12	26-06-2019	26-06-2019		
8	**UNIT-II** **Cascading Style Sheets(CSS):** Introduction, levels of style sheets, style specification formats	Understand the css introduction, levels of style sheets, style specification formats	BB/ LCD	1		13	26-06-2019	03-07-2019		
9	selector forms, property value forms, font properties	Familiarize with selector forms, property value forms, font properties	BB/ LCD	1		14	03-07-2019	03-07-2019		
10	list properties, color, alignment text, The Box model	Able to understand the list properties, color, alignment text, The Box model	BB/ LCD	2		16	05-07-2019	05-07-2019		
11	Background images, the span and div tags	Understand the Background images, the span and div tags	BB/ LCD	2		18	05-07-2019	05-07-2019		
12	**The Basics of JavaScript:** Overview of JavaScript, Object orientation and JavaScript	Familiarize with Overview of JavaScript, Object orientation and JavaScript	BB	2		20	10-07-2019	10-07-2019		
13	General Syntactic characteristics, primitives, operations and expressions	Understand various General Syntactic characteristics, primitives, operations and expressions	BB	2		22	12-07-2019	12-07-2019		
14	Screen output and keyboard input, control statements	Understand the Screen output and keyboard input, control statements	BB	2		24	12-07-2019	17-07-2019		

15	**UNIT - III** **JavaScript**: Object creation and modification	Understand Object creation and modification	BB/LCD	1		25	17-07-2019	17-07-2019		
16	Arrays, Functions, An Example	Implement Arrays, Functions, An Example	BB/LCD	1		26	17-07-2019	17-07-2019		
17	Constructors, Pattern matching using regular expressions, Errors in scripts	Implement Constructors, Pattern matching using regular expressions, Errors in scripts	BB/LCD	2		28	19-07-2019	19-07-2019		
18	**JavaScript and HTML Documents**: The JavaScript Execution Environment, The Document Object Model	Understand the JavaScript Execution Environment, The Document Object Model	BB	2		30	24-07-2019	24-07-2019		
19	Element accessing in JavaScript, Events and Event Handling	Understand the Element accessing in JavaScript, Events and Event Handling	BB/LCD	2		32	26-07-2019	26-07-2019		
20	Handling Events from Body elements, Handling events from Button elements	Understand basic concepts of Handling Events from Body elements, Handling events from Button elements	BB/LCD	2		34	31-07-2019	31-07-2019		
21	Handling Events from Text boxes and password elements	Able to understand Handling Events from Text boxes and password elements	BB /LCD	2		36	31-07-2019	02-08-2019		
22	The DOM 2 Event model, The Navigator object	Familiarize with The DOM 2 Event model, The Navigator object	BB/LCD	1		37	02-08-2019	02-08-2019		
23	**UNIT - IV** **Dynamic Documents with JavaScript**: Introduction	Familiarize with Dynamic Documents with JavaScript Introduction	BB	1		38	02-08-2019	02-08-2019		
24	Element Passing, Moving Elements	Understand Element Passing, Moving Elements	BB/LCD	1		39	07-08-2019	07-08-2019		
25	Element Visibility, Changing colors and Fonts	Understand Element Visibility, Changing colors and Fonts	BB/LCD	1		40	07-08-2019	07-08-2019		

26	Dynamic Content, Stacking Elements, Locating the mouse cursor	Understand Dynamic Content, Stacking Elements, Locating the mouse cursor	BB/LCD	1		41	09-08-2019	09-08-2019		
27	Reacting to mouse click, slow movement of elements, dragging and dropping elements.	Implement Reacting to mouse click, slow movement of elements, dragging and dropping elements.	BB/ LCD	1		42	09-08-2019	09-08-2019		
28	**Introduction to XML:** Introduction, The syntax of XML	Familiarize with introduction to XML, and the syntax of XML	BB	1		43	14-08-2019	14-08-2019		
29	XML document structure, Document Type Definition	Understand XML document structure, Document Type Definition	BB/LCD	1		44	14-08-2019	16-08-2019		
30	Namespaces	Understand the concept of Namespaces	BB	1		45	16-08-2019	16-08-2019		
31	XML Schemas, Displaying Raw XML documents	Understand XML Schemas, Displaying Raw XML documents	BB/LCD	1		46	16-08-2019	16-08-2019		
32	displaying XML documents with CSS	Understand displaying XML documents with CSS	BB/LCD	1		47	30-08-2019	30-08-2019		
33	XSLT Style sheets	Understand the XSLT Style sheets	BB/ LCD	1		48	04-09-2019	04-09-2019		
34	UNIT-V Introduction To PHP : Origins and uses of PHP, Overview of PHP, General Syntactic Characteristics, primitives	Understand the origins and overview of PHP	BB/ LCD	2		50	06-09-2019	06-09-2019		
35	Operations and Expressions, Output, Control Statements	Familiarize with Operations and Expressions, Output, Control Statements	BB/ LCD	2		52	11-09-2019	11-09-2019		
36	Arrays, Functions	Understand the Arrays, Functions	BB/ LCD	2		54	13-09-2019	13-09-2019		
37	Pattern Matching, Form Handling	Understand the Pattern Matching, Form Handling	BB/ LCD	2		56	18-09-2019	18-09-2019		

38	**Database Access through the web** : Relational Databases, An Introduction to the Structured Query Language	Understand the Relational Databases, An Introduction to the Structured Query Language	BB/ LCD	2		58	20-09-2019	20-09-2019		
39	MYSQL Database System, Database Access with PHP and MYSQL	Understand MYSQL Database System, Database Access with PHP and MYSQL	BB/ LCD	2		60	25-09-2019	25-09-2019		

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Signature of the Faculty

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Signature of the HOD:
Date:

LESSON PLAN

Academic Year : 2019-2020

Year & Semester : B.Tech. IV Year I SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT405 (R16) INTERACTIVE COMPUTER GRAPHICS

Name of Faculty : Dr.A.Srikrishna

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading /Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** **Introduction :** Basic concepts	Students will know the functions and operations of display hardware and associated devices	BB	1		1	10-06-2019	10-06-2019		
2	Application areas of Computer Graphics, overview of graphics systems		BB	2		3	12-06-2019	12-06-2019		
3	video-display devices, raster-scan systems		BB	1		4	14-06-2019	14-06-2019		
4	random scan systems, graphics monitors and work stations, Hard copy devices and Graphics software.		BB	2		6	25-06-2019	25-06-2019		
5	**Output primitives**: Points and lines, line drawing algorithms – DDA		BB	2		8	27-06-2019	27-06-2019		

6	line drawing algorithms – Bresenham's		BB	1		9	28-06-2019	28-06-2019		
7	line drawing algorithms – mid-point circle and mid-point ellipse algorithms		BB	1		10	01-07-2019	01-07-2019		
8	**UNIT II** **Filled area primitives** - Scan line polygon fill algorithm	Able to familiarize with algorithms on to draw lines, circles, and ellipse, able to implement polygon fill algorithms and 2D transformations.	BB	2		12	02-07-2019	02-07-2019		
9	boundary-fill and flood-fill algorithms		BB	1		13	15-07-2019	15-07-2019		
10	character generation and Ant aliasing		BB	1		14	15-07-2019	15-07-2019		
11	**2-D geometrical transforms:** Translation, scaling, rotation		BB	1		15	18-07-2019	18-07-2019		
12	2-D geometrical transforms: Translation		BB	1		16	22-07-2019	22-07-2019		
13	2-D geometrical transforms: Translation reflection and shear transformations		BB	1		17	23-07-2019	23-07-2019		
14	matrix representations and homogeneous coordinates		BB	2		19	25-07-2019	25-07-2019		
15	composite transforms		BB	2		21	26-07-2019	26-07-2019		
16	UNIT III **2-D viewing**: The viewing pipeline	Able to implement 2D clipping and projections.	BB	1		22	27-07-2019	27-07-2019		
17	viewing coordinate reference frame		BB	1		23	29-07-2019	29-07-2019		
18	window to view-port coordinate transformation		BB	1		24	30-07-2019	30-07-2019		
19	Viewing functions		BB	1		25	02-08-2019	02-08-2019		
20	Cohen-Sutherland line clipping algorithm		BB	1		26	05-08-2019	05-08-2019		
21	Sutherland –Hodgeman polygon clipping algorithm		BB	2		28	08-08-2019	08-08-2019		
22	window to view-port coordinate transformation		BB	1		29	27-08-2019	27-08-2019		
23	**Three Dimensional Concepts:** 3-D Display method		BB	1		30	30-08-2019	30-08-2019		

24	Parallel Projection, Perspective Projections		BB	1		31	03-09-2019	03-09-2019		
25	Depth Cueing, Visible Lines		BB	1		32	04-09-2019	04-09-2019		
26	Surface Identification and Surface Rendering		BB	1		33	05-09-2019	05-09-2019		
27	**UNIT IV** **3-D object representation:** Polygon surfaces	Able to implement 3D representations and transformations.	BB	1		34	06-09-2019	06-09-2019		
28	Curved lines and surfaces		BB	1		35	11-09-2019	11-09-2019		
29	quadric surfaces, spline representation.		BB	1		36	16-09-2019	16-09-2019		
30	**3-D Geometric Transformations:** Translation, rotation, scaling, reflection and shear transformations,		BB	2		38	17-09-2019	17-09-2019		
31	Composite transformations.		BB	1		39	19-09-2019	19-09-2019		
32	**UNIT V** **3-D viewing& Clipping:** Viewing pipeline	Able to implement 3D clipping and projections	BB	2		41	20-09-2019	20-09-2019		
33	viewing coordinates, projections.		BB	1		42	24-09-2019	24-09-2019		
34	**3-D viewing& Clipping:** View volume and general projection transforms.		BB	2		44	26-09-2019	26-09-2019		
35	Normalized View Volumes		BB	2		46	01-10-2019	01-10-2019		
36	Viewport Clipping, Clipping in Homogeneous coordinates.		BB	1		47	04-10-2019	04-10-2019		

A. Srikrishna

Signature of the Faculty

A. Srikrish

Signature of the HOD:

Date:

LESSON PLAN

Academic Year: 2019-2020

Year & Semester: B.Tech IV/ IV Year - I SEM (IT-A Section & IT-B Section)

Branch: Information Technology

Subject Code & Name: IT406 (C) (R16) Programming with Python

Name of Faculty: Dr.M.Pompapathi / Mr. K. Gowrisankar

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board (BB)/ LCD:	Hours Required Lecture(L)/ Tutorial(T)		Total number of Hours (cum.)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/ Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** **Introduction:** What is a computer science? Computer Algorithms.	Students will be able to describe various types of data, and control structures in python	BB	1		1	10-06-2019	10-06-2019		
2	The process of computational problem solving.		BB	2		3	11-06-2019	11-06-2019 & 12-06-2019		
3	**Data and Expressions** -Literals, Variables and Identifiers,		BB	1		4	12-06-2019	13-06-2019		
4	Operators, Different Types of Operators.		BB	2		6	13-06-2019	15-06-2019 & 18-06-2019		
5	Expressions and Data Types.		BB	1		7	15-06-2019	18-06-2019		

6	**Control Structures** – What Is a Control Structure?		BB	1		8	18-06-2019	19-06-2019		
7	Boolean Expressions (Conditions), Selection Control with Programs		BB	2		10	19-06-2019	20-06-2019 & 22-06-2019		
8	Iterative Control structure with example programs.		BB	2		12	20-06-2019	25-06-2019 & 26-06-2019		
9	**UNIT – II** **Lists** – Introduction of List Structures.	Students will be able to use procedure oriented features of python.	BB	1		13	22-06-2019	26-06-2019		
10	Lists (Sequences) in Python,		BB	2		15	25-06-2019	27-06-2019 & 29-06-2019		
11	Iterating over Lists (Sequences) in Python,		BB	2		17	29-06-2019	02-07-2019 & 03-07-2019		
12	More on Python Lists with examples		BB	2		19	02-07-2019	04-07-2019 & 10-07-2019		
13	**Functions**– Program Routines,		BB	2		21	03-07-2019	17-07-2019		
14	More on Functions with example programs		BB	2		23	10-07-2019	18-07-2019 20-07-2019		
15	**UNIT – III** **Objects and Their Use**–Software Objects,	Students will be able to develop applications using various functions with python modules	BB	2		25	17-07-2019	23-07-2019 24-07-2019		
16	Turtle Graphics with programs.		BB	3		28	20-07-2019	25-07-2019 & 27-07-2019		
17	**Modular Design** – Modules,		BB	2		30	25-07-2019	31-07-2019		
18	Python Modules with example programs.		BB	3		33	31-07-2019	06-08-2019 & 07-08-2019 & 08-08-2019		
19	**UNIT – IV** **Text Files**–What Is a Text File?	Students will be able to construct applications for	BB	1		34	06-08-2019	13-08-2019		
20	Using Text Files String Processing with programs.		BB	2		36	13-08-2019	27-08-2019 & 28-08-2019		

21	Exception Handling.	manipulating files.	BB	3		39	27-08-2019	04-09-2019 & 11-09-2019 & 12-09-2019		
22	**Dictionaries and Sets** – Dictionary Type in Python with programs		BB	2		41	04-09-2019	13-09-2019 & 14-09-2019		
23	Set Data Type, methods with programs		BB	3		44	13-09-2019	17-09-2019 & 18-09-2019 & 19-09-2019		
24	**UNIT – V** **Object-Oriented Programming**–What Is Object-Oriented Programming?	Students will be able to implement applications using object oriented programming features in python.	BB	1		45	18-09-2019	21-09-2019		
25	Encapsulation with Programs		BB	1		46	19-09-2019	24-09-2019		
26	Inheritance with Programs,		BB	2		48	21-09-2019	25-09-2019 26-09-2019		
27	Polymorphism with Programs		BB	1		49	24-09-2019	28-09-2019		
28	**Recursion**–Recursive Functions,		BB	1		50	28-09-2019	01-10-2019		
29	Recursive Problem Solving with example programs		BB	1		51	01-10-2019	03-10-2019		
30	Iteration Vs. Recursion with examples		BB	1		52	03-10-2019	05-10-2019		

Signature of the Faculty

Signature of the HOD:
Date:

LESSON PLAN

Academic Year : 2019-2020

Year & Semester : B.Tech. IV / IV Year II SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT 409(B) (R16) DIGITAL IMAGE PROCESSING

Name of Faculty : Dr.A. Srikrishna

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/ Lagging	Review / Remarks (By HOD)
				L	T					
1	**UNIT - I** **Introduction**: Digital Image Processing applications	Students will be familiarize with fundamentals of digital image processing	BB	1		1	18-11-2019	-		
2	Fundamental Steps in Digital Image Processing		BB	1		2	19-11-2019			
3	Components of Image Processing		BB	1		3	20-11-2019			
4	**Digital Image Fundamentals**: Image Sensing and Acquisition		BB	2		5	22-11-2019			

5	Image Sampling and Image quantization		BB	1		6	25-11-2019			
6	Basic Relationships between Pixels		BB	2		8	27-11-2019			
7	**UNIT II** **Intensity Transformations and Spatial Filtering**: Some Basic Intensity Transformation Functions	Students are able to apply techniques of smoothening and sharpening in spatial and frequency domain	BB	2		10	30-11-2019			
8	Histogram Processing – Histogram equalization		BB	1		11	02-12-2019			
9	Histogram Processing – Histogram specification		BB	1		12	03-12-2019			
10	Fundamentals of Spatial Filtering		BB	1		13	04-12-2019			
11	Smoothing spatial Filters		BB	2		15	06-12-2019			
12	Sharpening spatial Filters		BB	2		17	10-12-2019			
13	**Filtering in the Frequency Domain**: Properties of the 2-D Discrete Fourier Transform		BB	1		18	11-12-2019			
14	The Basics of Filtering in the Frequency Domain		BB	1		19	13-12-2019			
15	Image Smoothing Using Frequency Domain Filters		BB	1		20	14-12-2019			
16	Image Sharpening using Frequency Domain Filters		BB	1		21	16-12-2019			
17	**UNIT III** **Image Restoration**: A Model of the Image Degradation /	Able to use restoration	BB	1		22	17-12-2019			

	Restoration Process	techniques in order to solve images corrupted with noise in real world problems								
18	Noise models		BB	1		23	19-12-2019			
19	Restoration in the presence of noise only- Spatial Filtering		BB	1		24	21-12-2019			
20	Periodic Noise Reduction by Frequency Domain filtering		BB	1		25	23-12-2019			
21	**Image Restoration**: Linear, Position-Invariant Degradations		BB	1		26	26-12-2019			
22	Inverse Filtering		BB	1		27	27-12-2019			
23	Minimum Mean Square Error (Wiener) Filtering, Constrained Least Squares Filtering		BB	1		28	28-12-2019			
24	**UNIT IV** **Image Compression**: Fundamentals:- Coding Redundancy, Spatial and Temporal Redundancy, Irrelevant Information	Students are able to develop image compression techniques using standard algorithms to meet design specifications	BB	2		30	01-01-2020			
25	Measuring Image Information		BB	1		31	20-01-2020			
26	Fidelity Criteria		BB	1		32	21-01-2020			
27	Image Compression Models		BB	2		33	23-01-2020			
28	Image Formats		BB	1		34	25-01-			

							2020			
29	Containers and Compression Standard		BB	1		35	03-02-2020			
30	Some Basic Compression Methods:- Huffman Coding		BB	1		36	05-02-2020			
31	Arithmetic Coding		BB	1		37	07-02-2020			
32	LZW Coding, Run-Length Coding, Bit-Plane Coding, Block Transform Coding		BB	3		40	11-02-2020			
33	Predictive Coding		BB	1		41	13-02-2020			
34	**UNIT V Morphological Image Processing**: Erosion and Dilation, Opening and Closing, The Hit-or-Miss Transformation	Students will Familiarize with Morphological processing and Image segmentation techniques	BB	3		44	14-02-2020			
35	Some Basic Morphological Algorithms		BB	2		46	18-02-2020			
36	Gray-Scale Morphology		BB	1		47	21-02-2020			
37	**Image Segmentation**: Fundamentals		BB	2		49	24-02-2020			
38	Point, Line and Edge Detection		BB	2		51	02-03-2020			

40	Thresholding		BB	1		52	04-03-2020			
41	Region-Based Segmentation		BB	1		53	12-03-2019			

A. Srikishan

Signature of the Faculty

A. Srikishan

Signature of the HOD:

Date:

LESSON PLAN

Academic Year : 2019-2020

Year & Semester : B.Tech / IV Year II SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT410A (R16) MACHINE LEARNING

Name of Faculty : Y.Madhulika

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	INTRODUCTION TO MACHINE LEARNING	Understand Machine Learning	BB/ LCD	1		1	18/11/2019			
2	Well-Posed Learning Problem	Understand learning problem	BB/ LCD	1		2	20/11/2019			
3	Designing a Learning System	Understand design of learning system	BB/ LCD	1		3	21/11/2019			
4	Perspectives and Issues in Machine Learning	Know the issues in machine learning	BB/LCD	1		4	22/11/2019			
5	CONCEPT LEARNING AND THE GENERAL-TO-SPECIFIC ORDERING: Introduction	Understand concept learning	BB/ LCD	1		5	25/11/2019			
6	A Concept Learning Task	Understand learning task	BB/ LCD	1		6	27/11/2019			

7	Concept Learning as Search. FIND –S: Finding a Maximally Specific Hypothesis	Understand concept learning as a search	BB/ LCD	1		7	28/11/2019			
8	Version Spaces and the Candidate Elimination Algorithm	Understand the candidate elimination algorithm	BB/ LCD	1		8	29/11/2019			
9	Remarks on Version Spaces	Know the remarks on version spaces.	BB/ LCD	1		9	02/12/2019			
10	Candidate Elimination	Understand candidate elimination	BB/ LCD	1		10	04/12/2019			
11	Inductive Bias	Understand inductive Bias.	BB/ LCD	1		11	05/12/2019			
12	**Tutorial 1: Designing a learning system, Concept Learning**	**Understand the learning system design and concept learning**	**LeD: Learning by Dialogue : NPTEL Videos**		1	12	06/12/2019			
13	UNIT-II DECISION TREE LEARNING: Introduction	Know the decision learning	BB/ LCD	1		13	09/12/2019			
14	Decision Tree Representation	Understand Decision Tree representation	BB/ LCD	1		14	**11/12/2019**			
15	Appropriate Problems for Decision Tree Learning, The Basic Decision Tree Learning Algorithm.	Understand decision learning algorithm	BB/ LCD	3		17	12/12/2019 to 16/12/2019			
16	DECISION TREE LEARNING: Hypothesis Space Search in Decision Tree Learning. Inductive Bias in Decision Tree Learning..	Understand hypothesis and inductive bias in decision tree learning	BB/ LCD	3		20	18/12/2019 To 21/12/2019			
17	Issues in Decision Tree Learning	Know the issues in decision tree learning	BB/ LCD	2		22	23/12/2019 to 25/12/2019			
19	**Tutorial 2: Decision Tree Learning**	**Understand the decision tree learning**	**LeD: Learning by Dialogue**		2	24	26/12/2019 To 28/12/2019			

			: **NPTEL Videos**							
20	UNIT-III ARTIFICIAL NEURAL NETWORKS: Introduction	Understand Artificial Neural Networks	BB/ LCD	1			01/01/2020			
21	Neural Network Representation, Appropriate Problem for Neural network learning	Understand NN representation and problem for NN learning	BB/ LCD	3			03/01/2020 to 08/01/2020			
22	Perceptron's, Multilayer Networks and the Back propagation Algorithm	Understand back propagation algorithm	BB/ LCD	2			09/01/2020 to 10/01/2020			
23	ARTIFICIAL NEURAL NETWORKS: Remarks on Back Propagation Algorithm.	Understand remarks on back propagation algorithm	BB/ LCD	2			20/01/2020 to 22/01/2020			
24	An Illustrative Example: FACE Recognition, Advanced Topics in Artificial Neural Networks.	Understand examples on ANN.	BB/ LCD	3			23/01/2020 to 27/01/2020			
25	**Tutorial 3: Artificial Neural Networks**	**Understand Artificial Neural Networks**	**LeD: Learning by Dialogue : NPTEL Videos**		1		29/01/2020			
26	UNIT-IV EVALUATION HYPOTHESIS: Motivation	Understand evaluation hypothesis.	BB/ LCD	1			30/01/2020			
27	Estimating Hypothesis Accuracy	Understand estimation hypothesis accuracy	BB/ LCD	1			31/01/2020			
28	Basics of Sampling Theory	Understand sampling theory	BB/ LCD	1			03/02/2020			
29	A General Approach for Deriving Confidence Intervals	Understand deriving confidence intervals	BB/ LCD	1			05/02/2020			

30	Difference in Error of Two Hypotheses, Comparing Learning Algorithms	Understand learning algorithms	BB/ LCD	1			06/02/2020			
31	BAYESIAN LEARNING: Introduction,	Understand Bayesian learning	BB/ LCD	1			07/02/2020			
32	Bayes Theorem, Bayes Theorem and Concept Learning	Understand bayes theorem and concept learning	BB/ LCD	1			**10/02/2020**			
33	Maximum Likelihood and Least Squared Error Hypothesis, Maximum Likelihood Hypothesis for Predicting Probabilities	Understand predicting probabilities	BB/ LCD	1			12/02/2020			
34	Minimum Description Length Principle	Understand minimum description length principle	BB/ LCD	1			14/02/2020			
35	Bayes Optimal Classifier, Gibbs Algorithm, Naive Bayes Classifier,	Understand classifiers	BB/ LCD	1			15/02/2020			
36	An Example : Learning to Classify Text, Bayesian Belief Network, The EM Algorithm	Able to classify text	BB/ LCD	1			16/02/2020			
37	**Tutorial 4: Bayesian Learning**	**Understand Bayesian Learning**	**LeD: Learning by Dialogue : NPTEL Videos**		1		17/02/2020			
38	UNIT-V COMPUTATIONAL LEARNING THEORY: Introduction	Understand computational learning	BB/ LCD	1			19/02/2020			
39	Probably Learning an Approximately Correct Hypothesis.	Understand correct hypothesis	BB/ LCD	1			20/02/2020			
40	Sample Complexity for Infinite Hypothesis Spaces. The Mistake Bound Model of Learning.	Understand sample complexity and mistake bound model for learning	BB/ LCD	2			21/02/2020 to 24/02/2020			
41	INSTANCE BASED LEARNING: Introduction	Understand instance based learning	BB/ LCD	1			26/02/2020			
42	k-Nearest neighbor learning	Understand KNN learning	BB/ LCD	1			27/02/2020			

43	Locally Weighted Regression, Radical Basis Functions	Understand bias functions	BB/ LCD	2			**28/02/2020 to 05/03/2020**			
44	Case-base Reasoning, Remarks on Lazy and Eager Learning	Understand lazy and eager learning	BB/ LCD	2			06/03/2020 to 13/03/2020			
45	**Tutorial 4: Instance Based Learning**	**Understand Instance Based Learning**	**LeD: Learning by Dialogue : NPTEL Videos**		**2**		16/03/2020 to 21/03/2020			

Signature of the Faculty

Signature of the HOD:
Date:

LESSON PLAN

Academic Year : 2018-2019

Year & Semester : B.Tech / IV Year I SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT -451(R16) TERM PAPER

Name of Faculty : Dr.A.Sri krishna

Week	Work Plan	Learning Out comes	Hours Required / LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review/ Remarks (By HOD)
Week1	Choose your topic	Narrow down topic to something that can really be worked within the boundaries of the paper.	3	3	12-07-2018	12-07-2018	
Week2	Do your research.	Able to understand the background of the topic and the current thinking, as well as finding out what future research is considered necessary in the area.	3	6	02-08-2018	09-08-2018	
Week3	Refine your thesis statement.	Able to pinpoint the single, strong idea that the student believe can defend throughout the paper	3	9	09-08-2018	23-08-2018	
Week4	Develop outline of project with presentation and report preparation.	Over all presentation of the work carried out and the results found out for the valuation under the internal assessment and submission of the project with presentation and report preparation.	3	12	23-08-2018	24-08-2018	
Week5	Review I	Introduction, Descriptive or explanatory paragraphs following the introduction,	3	15	14-09-2018	14-09-2018	

Week6	**Review II**	Methodology, Analysis and conclusion of the paper.	3	18	27-09-2018	28-09-2018	
Week7	**Writing a Research Report**	Able to Submit The term paper Report using the guidelines given in Course file.	3	21	04-10-2018	05-10-2018	

A. Sivakrishna

Signature of the Faculty

A. Sivakrishna

Signature of the HOD:

Date:

LESSON PLAN

Academic Year : **2019-2020**

Year & Semester : **B.Tech / IV Year I SEM (IT A Section & IT B SECTION)**

Branch : **Information Technology**

Subject Code & Name : **IT452 (R16) WEB SERVICES LAB**

Name of Faculty : **Dr. B. Hemantha Kumar/Smt. Y.Madhulika**

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review/ Remarks (By HOD)
Week1	Program1 : Create a Java web application to validate user login details using Servlets	Implementing server side applications using Servlets	(2+2)= 4	4	11-06-2019	13-06-2019	
Week2	Program: 2. Make a "Course registration" form using JSP, that collects a first name, last name, contact no, email address & course name.	Implementing server side applications using JSP	(2+2)= 4	8	25-06-2019	27-06-2019	
Week3	Program: 3. Create a bean to maintain student information and display the information in JSP page..	Implement JSP Bean and using it server side JSP application	(2+2)= 4	12	02-07-2019	04-07-2019	
Week4	Program : 4. Write a generalized program to parse any xml document using DOM parser.	Implement Java application program to parse XML document using DOM parser	(2+2)= 4	16	11-07-2019	16-07-2019	
Week5	Program: 5. Write a generalized program to parse any xml document using SAX parser.	Implement Java application program to parse XML document using SAX parser	(2+2)= 4	20	18-07-2019	25-07-2019	

Week6	Program: 6. Write an Enterprise program to create Session Bean.	Implement Enterprise application using Enterprise Session Bean.	(2+2)= 4	24	30-07-2019	01-08-2019	
Week7	Program : 7. Develop a GUI application to send, receive, emails.	Implement java application to Create and Read electronic mails	(2+2)= 4	28	06-08-2019	08-08-2019	
Week8	Program : 7. Develop a GUI application to forward and reply emails.	Implement java application to Forward and Reply electronic mails	(2+2)= 4	32	13-08-2019	27-08-2019	
Week9	Program : 8. Write RMI application to calculate circle area and circumference.	Implement distributed RMI application	(2+2)= 4	36	03-09-2019	05-09-2019	
Week10	Program : 9. Write a program to demonstrate Java IDL and CORBA.	Implement distributed CORBA application	(2+2)= 4	40	17-09-2019	19-09-2019	
Week11	Program : 10. Create and Test a web service.	Implement Java Web Service	(2+2)= 4	44	24-09-2019	26-09-2019	

Signature of the Faculty

Signature of the HOD:

Date:

LESSON PLAN

Academic Year: 2019-2020

Year & Semester: B.Tech IV/ IV Year I SEM (IT A Section & IT B SECTION)

Branch: Information Technology

Subject Code & Name: IT 453 (R16) PROGRAMMING WITH PYTHON LAB

Name of Faculty: Dr. M. Pompapathi / Mr. K. Gowrisankar

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required	Total number of Hours (cumulative)	Expected date of topic be covered	Actual date of Topic covered	Review/ Remarks (By HOD)
			Lab				
Week 1	Basic Python Program:- factorial , Armstrong, Prime Num, Factors of the given number without math module.	Understand the usage of Control structures	4	4	06-06-2019	06-06-2019	
	Python Program to print Fibonacci numbers, nums in a range divisible by given range up to the given range						
	Python Program to Find the Sum of Digits, count the number of digits in a Number						
	Python Program to Check if a Number or string is a Palindrome						
Week 2	Python Program to print the age of the person in terms of years, months, days, hours, and seconds.	Understand the usage of Control structures and lists	4	8	13-06-2019	13-06-2019	
	Python Program for the given month, year, day to print the day of the week and the number of days in that month as						

Week 3	Python Program for Temperature Conversion for the given range using functions. python program to illustrate the following various operations on a LIST containing integer values..	Understand the usage of Control structures and lists	4	12	20-06-2019	20-06-2019	
Week 4	python program to illustrate Union, Intersection, and concatenation operations on two lists. Write a python program to compute the class average marks of N number of students using Lists. Write a python program to illustrate password encryption/decryption using encryption_key =(('a', 'c'), ('b', 'd'), etc.	Understand the usage of lists and lists basic methods	4	16	27-06-2019	27-06-2019	
Week 5	Write a python program using functions. (Avg elements, Return arguments, Search and sort elements) Write a python program to display the gross salary and net salary of an employee based on basic, and assuming DA=75%, HRA=20%, Income Tax=5% using functions. Write a python program to convert the given decimal number into binary number using recursion.	Understand the usage functions	4	20	04-07-2019	04-07-2019	
Week 6	Write a python program to count the number of vowels, consonants, number of characters and words in the given string. Write a Python Program to Print All Permutations of a String in Lexicographic Order without Recursion and using recursion.	understand the string processing	4	24	18-07-2019	18-07-2019	
Week 7	Write a python program to display the table showing the decreasing balance and accumulating interest paid on a credit card account for a given credit card balance, interest	understanding the to solve real world application	2	26	25-07-2019	25-07-2019	

	rate, and monthly payment with minimum payment of 2% of credit or higher.						
Week 8	Write python program to calculate new CGPA, SGPA based on entered Current CGPA, Credits earned (upto previous semester), credits and grades for 8 to 9 subjects in the current semester assuming points for grades obtained are (S,10), (A,9), (B,8), (C,7), (D,6), (E,,5) ,and (F,0).	understanding the to solve real world application	4	30	30-07-2019	30-07-2019	
Week 9	Develop a tic-tac toe program for TWO players using functions.	understanding the implement game applications	2	32	06-08-2019	06-08-2019	
Week 10	Write a python program to bounce a single ball in a graphical window. Write a python program to bounce more than one ball in the same graphical window.	Understanding the usage of Turtle Graphics	2	34	08-08-2019	08-08-2019	
Week 11	Develop a python program to perform PUSH, and POP operations on a stack using modules. Develop a python program to perform palindrome check for the entered string using stack module. Develop a python program to perform ENQUEE, and DEQUE operations on a Queue using modules.	Understanging the usage of moduler programming	4	38	13-08-2019	13-08-2019	
Week 12	Write a program that inputs a text file. The program should print all of the unique words in the file in alphabetical order. Write a python program to demonstrate standard exceptions a)IndexError b) NameError c) TypeError d)ValueError e)IOError	Understanding the how to handle Exception	2	40	05-09-2019	08-09-2019	

	Write a python program to display the number of times the given word exists in the user specified file(using text file and exceptions).						
Week 13	Develop a python program to generate all possible spellings from the last four digits of the given number using dictionaries. Develop a python program to perform basic calculator operations (ADD, SUB, MUL, DIV) using a class. Develop a python program to demonstrate inheritance of classes.	Understanding the usage of dictionaries and classes	4	44	17-09-2019	24-09-2019	
Week 14	Create a Base class polygon which has attributes number of sides, and a list containing values for those side, and also has operations to inputSides() to recevive a value fro \m calculate and display each one.the user for each side and to displaySides() to the user. Then create derived classes Triangle, Rectangle, Square which accesses all the features from base class polygon and computes their own operation findArea() , findPerimeter() to Write a python menu driven program to find factorial of a number, to display the Fibonacci sequence using Recursion.	Understanding the usage of Inheritance in classes	4	48	24-09-2019	03-10-2019	

K. Annie Sowjanya

Signature of the Faculty

A. Srikrishna

Signature of the HOD:

Date:

Teaching Plans of all the courses during academic year 2018-19

I/IV B.Tech I Semester

IT111 Mathematics-I

Dr. A.V. Ramakrishna (IT)

Academic Year : 2018-2019

Year & Semester : B.Tech / I Year I SEM (ITA Section & ITB Section)

Branch : Information Technology

Subject Code & Name : IT111 (R18) Mathematics-I

Name of Faculty : Dr.A.V.Ramakrishna/ Mr.K.J.L.Narayana

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	Rolle's Theorem	Know the main objective of the course and the Rolle's theorem.	BB	1		1	13-08-2018	13-08-2018		
2	Lagrange's Theorem	Know Lagrange's theorem	BB	1		2	14-08-2018	14-08-2018		
3	Problems	Solve related problems	BB	1		3	18-08-2018	18-08-2018		

4	Taylor's Series	Know the series expansion of a function	BB	1		4	20-08-2018	20-08-2018		
5	Maclaurin's Series	Know the series expansion of a function about origin.	BB	1		5	21-08-2018	21-08-2018		
6	Sequences And Series	Understand sequences series	BB	1		6	23-08-2018	23-08-2018		
7	Problems On Sequences	Solve problems of sequences	BB	1		7	25-08-2018	25-08-2018		
8	Series	Understand the usage of series	BB	1		8	27-08-2018	27-08-2018		
9	Series Of Positive Terms	Familiarize series of positive terms	BB	1		9	28-08-2018	28-08-2018		
10	Limit Form Test	Know limit form test	BB	1		10	29-08-2018	29-08-2018		
11	Problems	Solve problems	BB	1		11	30-08-2018	30-08-2018		
12	D' Alembert's Test	Understand the ratio test	BB	1		12	01-09-2018	01-09-2018		
13	Problems	Solve problems on ratio test	BB	1		13	04-09-2018	04-09-2018		
14	Raabe's Test	Understand Raabe's test	BB	1		14	05-09-2018	05-09-2018		
15	problems	Solve problems on Raabe's test	BB	1		15	06-09-2018	06-09-2018		

16	Evolutes And Involutes	Define evolute and involute	BB	1		16	11-09-2018	11-09-2018		
17	Problems	Solve related problems	BB	1		17	12-09-2018	12-09-2018		
18	Improper Integrals	Understand the importance of improper integrals	BB	1		18	15-09-2018	15-09-2018		
19	Problems	Evaluate improper integrals	BB	1		19	17-09-2018	17-09-2018		
20	Beta And Gamma Functions	Define beta and gamma functions	BB	1		20	18-09-2018	18-09-2018		
21	Properties	Know the properties of beta and gamma funtions	BB	1		21	19-09-2018	19-09-2018		
22	Problems	Solve related problems	BB	1		22	20-09-2018	20-09-2018		
23	Problems	Solve related problems	BB	1		23	25-09-2018	25-09-2018		
24	Solids Of Revolutions	Know the concept of solids of revolution	BB	1		24	26-09-2018	26-09-2018		
25	Volume Problems	Solve related problems	BB	1		25	27-09-2018	27-09-2018		
26	Problems	Solve related problems	BB	1		26	29-09-2018	29-09-2018		
27	Problems	Solve related problems	BB	1		27	03-10-2018	03-10-2018		

28	Surface Area Of Revolution	Know the concept of surface area of revolution	BB	1		28	04-10-2018	04-10-2018		
29	Problems	Solve related problems	BB	1		29	08-10-2018	08-10-2018		
30	Vector Spaces	Know the concept of vector space	BB	1		30	22-10-2018	22-10-2018		
31	Problems	Solve problems of vector spaces	BB	1		31	23-10-2018	23-10-2018		
32	Linear Combination	Understand the linear combination of vectors	BB	1		32	24-10-2018	24-10-2018		
33	Linear Dependence And Independence	Understand the dependence and independence of vectors	BB	1		33	25-10-2018	25-10-2018		
34	Problems	Solve related problems	BB	1		34	27-10-2018	27-10-2018		
35	Problems	Solve related problems	BB	1		35	29-10-2018	29-10-2018		
36	Basis	Define basis of a vector space	BB	1		36	30-10-2018	30-10-2018		
37	Dimension	Understand dimension of a basis	BB	1		37	31-10-2018	31-10-2018		
38	Problems	Solve related problems	BB	1		38	01-11-2018	01-11-2018		

39	Linear Transformations	Define linear transformation	BB	1		39	05-11-2018	05-11-2018		
40	Problems	Solve related problems	BB	1		40	06-11-2018	06-11-2018		
41	Construction Of Linear Map	Construct linear map	BB	1		41	08-11-2018	08-11-2018		
42	Range And Kernel	Understand range and kernel of linear map	BB	1		42	12-11-2018	12-11-2018		
43	Rank And Nullity	Understand rank and nullity of linear map	BB	1		43	14-11-2018	14-11-2018		
44	nonsingular transformation	Know non singular transformation	BB	1		44	15-11-2018	15-11-2018		
45	composition of Transformations	Understand composition	BB	1		45	17-11-2018	17-11-2018		
46	Characteristic Equation	Define characteristic equation	BB	1		46	19-11-2018	19-11-2018		
47	Eigenvalues And Eigenvectors	Understand eigenvalues and eigenvectors	BB	1		47	19-11-2018	19-11-2018		
48	Problems On Eigenspaces	Solve problems of eigenspaces	BB	1		48	20-11-2018	20-11-2018		
49	Problems	Solve related problems	BB	1		49	22-11-2018	22-11-2018		
50	Symmetric,skew,orthogonal Matrices	Define some special matrices	BB	1		50	23-11-2018	23-11-2018		

51	Inner Product Spaces	Understand the concept of inner product space	BB	1		51	24-11-2018	24-11-2018		
52	Orthogonalization	Find orthogonalization of vectors	BB	1		52	26-11-2018	26-11-2018		
53	problems	Solve related problems	BB	1		53	27-11-2018	27-11-2018		
54	problems	Solve related problems	BB	1		54	28-11-2018	28-11-2018		

Signature of the Faculty

Signature of the HOD:

Date:

IT 112 – Engineering Physics

Dr. Madhavi (Physics)

Academic Year: 2018-2019

Year & Semester: B.Tech / I Year I SEM (ITA Section & ITB SECTION)

Branch: Information Technology

Subject Code & Name: IT112 (R18) Engineering Physics

Name of Faculty: Dr D Madhavi / Smt VL Suneetha

S.No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board (B B)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to becovered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** Introduction to semiconductors physics.	Introduce the main objective of the course and explain the fundamental concepts of semiconductor physics.	BB	1		1	11-08-2018	13-08-2018		
2	Explanation of the basic concepts of matter and radiation.	Understand the wave parameters.	BB	1		2	12-08-2018	14-08-2018		

3	Dual nature of particle. de Broglies hypothesis.	Understand the de Broglies hypothesis	BB	1		3	14-08-2018	16-08-2018		
4	Davisson and Germer experiment.	Understand the wave nature of electron.	BB	1		4	16-08-2018	18-08-2018		
5	Uncertainty principle and single slit experiment.	Understand the uncertainty principle.	BB	1		5	18-08-2018	20-08-2018		
6	Schrodinger time dependent and time independent wave equations	Understand the equation of motion of matter wave.	BB	1		6	19-08-2018	21-08-2018		
7	Physical significance wave function	Familiarize the properties of wave function	BB	1		7	21-08-2018	23-08-2018		
8	Particle in a box	Understand the particle behavior in atom.	BB	1		8	23-08-2018	25-08-2018		
9	Salient features of free electron theories.	Familiarize free electron theories	BB	1		9	25-08-2018	27-08-2018		
10	Classical free electron theory	Understand the postulates of classical free electron theory.	BB	1		10	26-08-2018	28-08-2018		
11	Quantum free electron theory	Understand the postulates of quantum free electron theory.	BB	1		11	28-08-2018	30-08-2018		
12	Fermi- Dirac distribution function	Understand the distribution of electron in a given energy level.	BB	1		12	30-08-2018	01-09-2018		

13	Bloch theorem	Understand the behavior of electron in periodic	BB	1		13	02-09-2018	04-09-2018		
14	Kroning Penney Model	Understand the particle behavior in periodic potential fields.	BB	1		14	03-09-2018	05-09-2018		
15	Effective Mass of an Electron	Familiarize the formula of effective mass of electron	BB	1		15	04-09-2018	06-09-2018		
16	Density of States	Understand the density of states within the range of energy dE in conductors	BB	1		16	09-09-2018	11-09-2018		
17	Energy Band Formation in Solids and Classification Solids Depend On the Band Theory.	Familiarize the energy of electrons in solid	BB	1		17	10-09-2018	12-09-2018		
18	Tutorial 1: Problems in Quantum Mechanics	Understand the fundamental concepts of quantum mechanics.	BB		1	18	13-09-2018	15-09.2018		
19	UNIT – II Semiconductors- Intrinsic semiconductors	Understand the concepts the semiconductors	BB	1		19	15-09-2018	17-09-2018		
20	Carrier Concentration in Intrinsic Semiconductors	Understand the carrier density in conduction band and valance band	BB	1		20	16-08-2018	18-09-2018		
21	Carrier Concentration in N-Type Semiconductor	Understand the carrier density in	BB	1		21	17-08-2018	19-09-2018		

		extrinsic semiconductors								
22	Carrier Concentration in P-Type Semiconductor	Understand the carrier density in extrinsic semiconductors	BB	1		22	17-09-2018	19-09-2018		
23	Drift and Diffusion Currents	Familiarize the current conduction in semiconductors	BB	1		23	18-09-2018	20-09-2018		
24	Generation and Recombination	Understand the interaction of electron and hole	BB	1		24	22-09-2018	24-09-2018		
25	P-N junction formation	Understand the formation of built in potential	BB	1		25	23-09-2018	25-09-2018		
26	Diode equation	Familiarize the current flow in forward and reverse bias	BB	1		26	24-09-2018	26-09-2018		
27	Hall effect and applications	Understand the Hall effect	BB	1		27	25-09-2018	27-09-2018		
28	Tutorial 2 – Problems in Unit II	Understand the energies of electron	BB		1	28	29-09-2018	01-10-2018		
29	UNIT- III Direct and indirect band gap semiconductors	Familiarize the direct and indirect band gap semiconductors	BB	1		29	01-09-2018	03-10-2018		

30	Light- Semiconductor Interaction	Understand the interaction of radiation with matter	BB	1		30	02-10-2018	04-10-2018		
31	Optical Transitions in Bulk Semiconductors	Understand the different types of interactions of photons with semiconductors	BB	1		31	04-10-2018	06-10-2018		
32	Basic requirement of laser	Familiarize the basic requirements of laser		1		32	06-10-2018	08-10-2018		
33	Homo Junction Diode Laser	Understand the working principle of laser diode	BB	1		33	20-10-2018	22-10-2018		
34	Hetro Junction Diode Laser	Understand the working principle of laser diode	BB	1		34	22-10-2018	23-10-2018		
35	Working Principle of LED	Understand the working principle LED	BB	1		35	23-10-2018	24-10-2018		
36	Photo diode working principle	Understand the principle of photo diode	BB	1		36	24-10-2018	25-10-2018		
37	Solar Cell working Principle	Understand working principal of solar cell	BB	1		37	25-10-2018	27-10-2018		
38	Characteristics of Solar Cell	Understand the characteristics of Solar cell	BB	2		38	27-10-2018	30-10-2018		
39	Working Principle of P-i-n diode	Understand the working principle of Pin diode	BB	1		39	30-10-2018	31-10-2018		

40	Characteristics of P-i-n diode	Understand the characteristics of P-i-n diode	BB	1		40	30-10-2018	31-10-2018		
41	Optical Loss and Gain	Understand the threshold condition in laser	BB	1		41	31-10-2018	01-11-2018		
42	Density of states for photons	Understand the photon gass	BB	1		42	01-11-2018	03-11-2018		
43	Characteristics of laser	Familiarize the properties of laser	BB	1		43	03-11-2018	05-11-2018		
44	Tutorial 3- Problems in III Unit	Understand the energy band gap calculations.	BB		1	44	05-11-2018	08-11-2018		
45	UNIT –IV Low Dimensional Semiconductor Material. Dos 3D	Understand the concepts of low dimensional materials	BB	1		45	08-11-2018	09-11-2018		
46	Low Dimensional Semiconductors(2-d, 1-d, 0-d)	Familiarize the low dimensional Semiconductors	BB	1		46	09-11-2018	12-11-2018		
47	Four Probe Method	Understand the measuring technique of resistivity	BB	1		47	12-11-2018	14-11-2018		
48	Vander Pauw Method	Understand the measuring technique of resistivity	BB	1		48	14-11-2018	15-11-2018		
49	Vader Pauw method carrier density	Understand the measurement technique of carrier	BB	1		49	15-11-2018	17-11-2018		

		density								
50	Hall Measurements	Understand the measurement technique of Hall coefficient	BB	1		50	17-11-2018	19-11-2018		
51	Practical example of low dimensional semiconductors	Familiarize the quantum wells, quantum wires and quantum dots.	BB	1		51	19-11-2018	20-11-2018		
52	Capacitance and Voltage Measurements	Understand the measurement technique for built in potential and carrier density	BB	1		52	20-11-2018	22-11-2018		
53	Hot Probe method	Understand the measuring technique for estimate the type of semiconductor	BB	1		53	22-11-2018	24-11-2018		
54	Parameter Extraction from I-V Characteristics of PN junction diode	Understand the different diode parameters from this measurement	BB	1		54	24-11-2018	27-11-2018		
55	Tutorial IV- Objective Type Question Solving	Understand the basic concepts low dimensional semiconductors.	BB		1	55	27-11-2018	28-11-2018		

D. Madhavi

Signature of the Faculty

A. Srikrish

Signature of the HOD:

Date:

IT 113 Basic Electrical Engineering

Academic Year : 2018-2019

Year & Semester : B.Tech / I Year I SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT113 (R18) Basic Electrical Engineering

Name of Faculty : Mr.N.Dharani Kumar/Mr.K.V.Gopala Chary

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** Charge,voltage,current,power,energy,classification Of Elements	Understand the various definations in Electrical energy	BB	1		1	14-08-2018	14-08-2018		
2	Classification Of Sources	Understand the various electrical sources	BB	1		2	15-08-2018	17-08-2018		
3	Node,branch,mesh,loop, Problems	Understand the various definitions	BB	1		3	14-08-2018	18-08-2018		

4	Kvl	Familiarize with KVL	BB	2		5	17-08-2018	21-08-2018		
5	Kcl	Familiarize with KCL	BB	2		7	18-08-2018	24-08-2018		
6	Mesh Analysis	Familiarize with Mesh Analysis	BB	2		9	21-08-2018	25-08-2018		
7	Nodal Analysis	Familiarize with Mesh Analysis	BB	3		12	24-08-2018	28-08-2018		
8	**Tutorial 1**Problems	Understand the different laws	BB		1	13	25-08-2018	29-08-2018		
9	Thevenins Theorem	Familiarize with Thevenins Theorem	BB	2		15	28-08-2018	31-08-2018		
10	Nortons Theorem	Familiarize with Nortons Theorem	BB	2		17	29-08-2018	01-09-2018		
11	Problems On Dependent Sources	Familiarize with Dependent Sources	BB	1		18	31-08-2018	04-09-2018		
12	Batteries Introduction And Types,lead Acid Battery	Understand the lead Acid Battery	BB	1		19	01-09-2018	05-09-2018		
13	Nickel Iron And Nickel Cadmium Batteries	Understand the Nickel Iron And Nickel Cadmium Batteries	BB	1		20	04-09-2018	07-09-2018		
14	**Tutorial** 2 Problems	Understand the Batteries			**1**	**21**	05-09-2018	14-09-2018		

15	**UNIT - II** Ac Introduction,advantages And Definations	Understand the alternating quantinty	BB	1		22	07-09-2018	15-09-2018		
16	Average Value And Rms Value,peak Factor,form Factor	Understand the alternating quantity definations	BB	2		24	14-09-2018	18-09-2018		
17	**Tutorial** 3 Problems	Understand the alternating quantity problems	BB		1	25	15-09-2018	19-09-2018		
18	Ac Through R,through L	Familiarize with Ac Through R,through L		**1**		**26**	18-09-2018	25-09-2018		
19	Ac Through Series R-l-c	Familiarize with Ac Through Series R-l-c	BB	1		27	19-09-2018	26-09-2018		
20	Parallel R-l-c	Familiarize with Ac Through Parallel R-l-c	BB	1		28	25-09-2018	28-09-2018		
21	3 Phase Star Connection	Familiarize with Ac Through 3 Phase Star Connection	BB	2		30	26-09-2018	03-10-2018		
22	Delta Connection,problems	Familiarize with Ac Through Delta Connection,problems	BB	1		31	28-09-2018	05-10-2018		
23	**UNIT - III** Transformers Operation	Understand the Transformers Operation	BB	2		33	03-10-2018	06-10-2018		

24	Magnetic Materials,b-h Loop,ideal And Practical Transformer	Understand the Magnetic Materials,b-h Loop,ideal And Practical Transformer	BB	3		36	05-10-2018	23-10-2018		
25	Oc And Sc Test	Understand the Magnetic Materials,b-h Loop,ideal And Practical Transformer	BB	1		37	06-10-2018	24-10-2018		
26	Losses In Transformer,regulation And Efficiency	Understand the Magnetic Materials,b-h Loop,ideal And Practical Transformer	BB	1		38	23-10-2018	26-10-2018		
27	Autotransformer	Understand the Autotransformer	BB	1		39	24-10-2018	27-10-2018		
28	**UNIT - IV** Construction Of Dc Generator	Understand the Construction Of Dc Generator	BB	1		40	26-10-2018	30-10-2018		
29	Operation Of Dc Generator,emf Equations,problems	Understand the Construction Of Dc Generator	BB	2		42	27-10-2018	31-10-2018		
30	Types Of Generators,problems	Understand the Construction Of Dc Generator	BB	2		44	30-10-2018	06-11-2018		
31	Operation Of Motor,torque Equation	Understand the Construction Of Dc Generator	BB	2		46	31-10-2018	09-11-2018		

32	**Tutorial** 4 Problems,	Understand the Motor, Generators problems	**BB**		**1**	**47**	06-11-2018	12-11-2018		
33	torque Speed Characteristics	Understand the ,torque Speed Characteristics	BB	1		48	09-11-2018	13-11-2018		
34	Characteristics Rotating Magnetic Field	Understand the Characteristics Rotating Magnetic Field	BB	1		49	12-11-2018	16-11-2018		
35	Construction And Working Of Three Phase Of I.m	Understand the Construction And Working Of Three Phase Of I.m	BB	1		50	13-11-2018	17-11-2018		
36	Torque-slip Characteristics,	Understand the Torque-slip Characteristics	BB	1		51	16-11-2018	20-11-2018		
37	power Losses	Understand the power Losses	BB	1		52	17-11-2018	23-11-2018		
38	**Tutorial** 5 Problems,	Understand the IM problems	BB		1	53	20-11-2018	24-11-2018		
39	Construction And Working Of Synchronous Generators	Understand the Construction And Working Of Synchronous Generators	BB	1		54	23-11-2018	27-11-2018		

Signature of the Faculty

Signature of the HOD:
Date:

I/IV B.Tech II Semester

IT 121 -Mathematics – II

K.J. Lakshmi Narayana (Maths)

Academic Year : 2018-2019

Year & Semester : B.Tech / I Year II SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT121(R18) MATHEMATICS - II

Name of Faculty : SRI K.J.LAKSHMI NARAYANA

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading / Lagging	Review / Remarks (By HOD)
				L	T					
1	**UNIT - I** Introduction	Introduce the main objective of the course and explain the fundamental concepts of differentiation	BB	1		1	26-12-2018	26-12-2018		

2	Limit of a function of two variables	Understand limit of function two variables	BB	1		2	27-12-2018	29-12-2018		
3	Problems on Limits	Understand how to evaluate Limits	BB	1		3	31-12-2018	31-12-2018		
4	Problems on continuity	How to Check continuity of Two variables	BB	1		4	02-01-2019	02-01-2019		
5	Partial Differentiation	Understand Partial Differentiation	BB	1	1	5	03-01-2019	03-01-2019		
6	Problems on Partial Differentiation		BB	1		6	05-01-2019	05-01-2019		
7	Homogeneous functions and Euler's theorem applications	How to apply Euler's method	BB	1		7	07-01-2019	07-01-2019		
8	Euler's theorem		BB	1		8	09-01-2019	09-01-2019		

9	Euler's theorem problems		BB	1		9	10-01-2019	10-01-2019		
10	TOTAL Differential Coefficient	How to find total Differentiation	BB	1		10	12-01-2019	21-01-2019		
11	Maxima and Minima values of two variables	Understand Maxima and minima of two variables	BB	1		11	22-01-2019	24-01-2019		
12	Lagrange method	How to apply Lagrange's method	BB	1		12	23-01-2019	28-01-2019		
13	Maxima and Minima values of two variables problems		BB	1		13	29-01-2019	30-01-2019		
14	Lagrange method Problems		**BB**	**1**		**14**	**31-01-2019**	**31-01-2019**		
15	**Tutorial 1 : Maxima and minima of two variables**				**1**	**15**	**01-02-2019**	**02-02-2019**		

16	**UNIT - II** Multiple integrals Introduction	Understand Multiple integrals	BB	1		16	01-02-2019	02-02-2019		
17	Double integrals Evaluation	How to Evaluate Double Integrals	BB	1		17	03-02-2019	02-02-2019		
18	Double integrals Evaluation		BB	1		18	04-02-2019	04-02-2019		
19	Double integrals Problems		**BB**	**1**		**19**	**05-02-2019**	**06-02-2019**		
20	Double integrals in polar Co-ordinates		BB	1		20	07-02-2019	07-02-2019		
21	Change of order of integration introduction	Understand Change of order integration	BB	1		21	08-01-2019	09-01-2019		
22	Change of order of integration Problems		BB	1		22	10-01-2019	11-01-2019		
23	Change of order of integration Problems		BB	1		23	12-01-2019	14-02-2019		

24	Change of variables	Understand the Change of Variables	BB	1		24	15-02-2019	16-02-2019		
25	Area by Double integrals	How evaluate area by double integrals	BB	1		25	17-02-2019	18-02-2019		
26	Triple Integrals Introduction	Understand the Triple integrals	BB	1		26	19-01-2019	20-02-2019		
27	Triple Integrals Evaluation		BB	1		27	21-02-2019	21-02-2019		
28	Volume as a Triple Integral	How to evaluate Volume integrals	BB	3		30	22-02-2019	07-03-2019		
29	**Tutorial 2 : Line , Surface and Volume Integrals**		BB		1	31	07-03-2019	10-03-2019		
29	**UNIT - III** Scalar and Vector Point functions	Understand the Vector and Scalar point functions	BB	1		32	10-03-2019	10-03-2019		
30	Divergence , Gradient and Curl	How to evaluate Divergence ,Curl and Gradient	BB	2		34	12-03-2019	13-03-2019		
31	Del applied Twice to Point functions		BB	2		36	16-03-2019	18-03-2019		

32	Directional derivatives		BB	1		37	19-03-209	20-03-2019		
33	Vector Integration Introduction	Understand Vector integration	BB	1		38	22-03-2019	23-03-2019		
34	Line Integrals Evaluation		BB	1		39	24-03-2019	25-03-2019		
35	Green's theorem in a Plane and Problems	Understand Vector integration	BB	2		41	27-03-2019	28-03-2019		
36	Surface and Volume integrals	How to evaluate surface and Volume Integrals	BB	1		42	29-03-2019	30-03-2019		
37	Stoke's and Gauss Divergence Theorem	How to evaluate surface and Volume Integrals	BB	2		44	02-04-2019	03-04-2019		
38	**Tutorial 3 : Vector Integration**				**1**	**45**	**03-03-2019**	**03-03-2019**		
39	**UNIT - IV** First Order differential equations	Understand Ordinary Differential equations	BB	1		46	04-04-2019	04-04-2019		

40	Bernoulli's , Exact Differential equations	How to solve Linear , Bernoulli's equations	BB	2		48	07-04-2019	08-04-2019		
41	Second Order Differential Equations by Method of Varation of Parameters	How to solve Second order Differential equations	BB	2		50	10-04-2019	12-04-2019		
42	Cauchy's Homogeneous differential equation	How to solve Second order Differential equations	BB	2		52	14-04-2019	15-04-2019		
43	Series solution of Differential equations	Understand series solution O.D.E	BB	1		53	16-04-2019	17-04-2019		
44	Bessel Recurrence Formulae	Under Bessel function of first kind and Recurrence formulae	BB	1		54	18-04-2019	18-04-2019		
45	Legendre Polynomial	Understand Legendre Polynomial	BB	1		55	18-04-2019	19-04-2019		
46	**Tutorial 4: Legendre Polynomial**				**1**	**56**	**19-04-2019**	**19-04-2019**		

Signature of the Faculty

Signature of the HOD:
Date:

IT 122 – Engineering Chemistry

M.S.R (chemistry)

Academic Year: 2018-2019

Year & Semester: B.Tech / I Year II SEM (IT-A Section)

Branch: Information Technology

Subject Code & Name: IT-122(R18) ENGINEERING CHEMISTRY

Name of Faculty: Sri. M. Srinivasa Rao

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT-II** Introduction of Syllabus of all units		BB	1		1	26-12-2018	26-12-2018		
2	Syllabus and their importance of Engineering.		BB	1		2	28-12-2018	28-12-2018		
3	Water technology- Introduction of water- sources of water, hardness – types of hardness and their units.	Able to learn importance of hardness	BB	2		4	29-12-2018	29-12-2018		

4	WHO guidelines and their importance	Able to know the WHO & ISI standards of drinking water	BB	1		5	31-12-2018	31-12-2018		
5	Removal of suspended impurities – sedimentation and coagulants and types of coagulants and their chemical equations.	Able to learn how to remove impurities from water	BB	1		6	02-01-2019	02-01-2019		
6	Filtration -Working Of Sand Filter With Diagram, Removal Of Microorganism And Their Methods, Chlorination - Addition Of Bleaching Powder with equations.	Able to learn how to remove impurities from water	BB	1		7	04-01-2019	04-01-2019		
7	Chlorination And Factors Effecting Efficiency Chlorine And Break Point Chlorination ,advantages And Introduction Of Ion Exchange Resins	Able to learn how to remove impurities from water	BB	2		9	05-01-2019	05-01-2019		
8	Ion Exchange Process With Diagram And their advantages, and disadvantages	Able to learn how to remove impurities from water	BB	1		10	07-01-2019	07-01-2019		
9	Reverse Osmosis - Construction And Working Of Reverse Osmosis **Unit - I** Introduction Ligands And Types Of Ligands	Able to learn how to remove impurities from water	BB	1		11	09-01-2019	09-01-2019		

10	Introduction Of Complex Compounds, Complex Ion, Coordination Number, Coordination Sphere	Able to learn stability of complexes	BB	1		12	11-01-2019	11-01-2019		
11	Important Postulates Of Crystal Field Theory And Introduction Of Splitting Of D Orbital's In Octahedral Complexes	Able to learn how to split the orbital's	BB	1		13	21-01-2019	21-01-2019		
12	Splitting Of D- Orbital's In Octahedral Complexes with diagram.	Able to learn how to split the orbital's	BB	1		14	23-01-2019	23-01-2019		
13	Crystal Field Splitting Of D Orbital's In Tetrahedral Complexes And Calculation Of CFSE Of Octahedral And Tetrahedral Complexes	Able to learn how to split the orbital's	BB	1		15	25-01-2019	25-01-2019		
14	Calculation of CFSE Of Complexes And Magnetic Properties	Able to learn how calculate the energy	BB	1		16	28-01-2019	28-01-2019		
15	Derivation Of Critical Constants From Vander walls Equations	Able to find critical constants	BB	1		17	30-01-2019	30-01-2019		
16	Andrews Isotherms Of CO_2- Critical Phenomenon with graph.	Able to learn how exist CO2 at different temperature	BB	1		18	02-02-2019	02-02-2019		
17	Hydrogen Bonding And Types Of Hydrogen Bonding With Examples	Able to learn uses of hydrogen bond	BB	1		19	04-02-2019	04-02-2019		

18	Vander walls Forces And Types Of Vander Waals Forces Ion -dipole And Dipole-dipole Forces With Examples	Able to know forces of attraction s		1		20	06-02-2019	06-02-2019		
19	Batteries - Primary Batteries - Laclance or Dry Cell Construction And Working Of Primary Battery	Able to learn electrochemical energy systems	BB	1		21	08-02-2019	08-02-2019		
20	Secondary Batteries - Lead - acid Storage Cell Construction And Working Of Lead Acid Storage Cell	Able to learn construction of batteries and their working	BB	1		22	11-02-2019	11-02-2019		
21	Lithium Batteries - Construction And Working Of Lithium Batteries , Classification Of Fuel Cells	Able to learn construction of batteries and their working	BB	1		23	13-02-2019	13-02-2019		
22	Hydrogen And Oxygen Fuel Cell And Nernst Equation Derivation And Problems	Able to learn construction of batteries and their working	BB	1		24	15-02-2019	15-02-2019		
23	Electrode Potential, Electrochemical Series and their significance.	Able to learn potential and their values	BB	1		25	16-02-2019	16-02-2019		
24	Corrosion - Introduction Of Corrosion And Theories Of Corrosion - Wet Theory Of Corrosion	Able know to corrosion	BB	1		26	18-02-2019	18-02-2019		

25	Types Of Corrosion And Factors Effecting Rate Of Corrosion Hydrogen Over Voltage	Able to learn types and factors of corrosion	BB	1		27	20-02-2019	20-02-2019		
26	Types Of Corrosion And Protection Methods - Cathodic Protection - Sacrificial Anodic Method And Applications	Able to know protection of metals from corrosion	BB	1		28	22-02-2019	22-02-2019		
27	Impressed Current Cathodic Protection And Its Applications	Able to know protection of metals from corrosion	BB	1		29	22-02-2019	22-02-2019		
28	Electroplating - Electroplating (cu) Advantages, conditions And Properties	Able to learn prevention of corrosion	BB	1		30	23-02-2019	23-02-2019		
29	Electro less Plating Ni	Able to learn prevention of corrosion	BB	1		31	06-03-2019	06-03-2019		
30	Electro less Plating Ni Advantages And Applications **UNIT – IV** Introduction , Lamberts - beer law Derivations	Able to know about absorption laws and their limitations	BB	1		32	11-03-2019	11-03-2019		

31	Block Diagram Of UV - Visible Spectroscopy And Beers Law	Able to know about working of spectro photo meter	BB	I		33	13-03-2019	13-03-2019		
32	IR Spectroscopy And Instrumentation	Able to know the principle of the technique and working of spectrophotometer		I		34	18-03-2019	18-03-2019		
33	IR Instrumentation And Determination Of Fe (III) Using Colorimetry	Able to estimate Iron content in given sample	BB	I		35	20-03-2019	20-03-2019		
34	Principals Of UV-Vis Spectroscopy - Vibrations And Types Of Vibrations	Able to find functional groups present in the unknown compound	BB	I		36	22-03-2019	22-03-2019		
35	Vibrations Of UV And Purity And Difference Between Conjugated And Non Conjugated Dienes	Able to differentiate conjugated and non conjugated system	BB	I		37	23-02-2019	23-02-2019		
36	Introduction Of IR And Vibration Modes Of AB2 And Examples Of Vibration Modes Of CO2 And H2O	Able to know the principle absorption bands obtain in the spectra of CO2 and H2O	BB	I		38	25-03-2019	25-03-2019		

37	Fluorescence And Its Medicinal Applications		BB	1		39	27-03-2019	27-03-2019		
38	UNIT-III Types Of Organic Reactions - Substutions Reactions SN1 And SN2 Reactions With Mechanisms	Able to learn organic reaction mechanisms and reactions	BB	2		40	29-03-2019	29-03-2019		
39	Elimination Reactions - E1 And E2 With Mechanism, Deals-alder Reaction And Preparation Of Aspirin	Able to learn organic reaction mechanisms and reactions	BB	1		41	30-03-2019	30-03-2019		
40	Markownikoff And Anti Markownikoff Rules And Introduction Of Polymers And Definition Of Polymer,monomer,monomer Functionality And Degree Of Polymerisation	Able to learn organic reaction mechanisms and reactions	BB	1		42	01-43-2019	01-43-2019		
41	Types Of Polymerization-Addition And Condensation Polymerization With Examples And Conducting Polymers Introduction And Examples, Conduction Mechanism Of Conduction Polymers And Application Of Conducting polymers.	Able to learn polymer and types of polymers and their advantages	BB	1		43	03-04-2019	03-04-2019		
42	Properties Of Polymers-Plastic Deformation And Elastic Deformation With Examples.	Able to learn properties of polymers	BB	1		44	08-04-2019	08-04-2019		

43	Properties Of Polymers - Strength And Crystallinity	Able to learn properties of polymers	BB	1		45	12-04-2019	12-04-2019		
44	Glass Transition Temperature And Factors Effecting Tg	Able to learn properties of polymers	BB	1		46	15-04-2019	15-04-2019		

Signature of the Faculty

Signature of the HOD:
Date:

Branch: Information Technology

Academic Year: 2018-2019

Subject Code & Name: IT123 (R18) Programming for Problem Solving

LESSON PLAN

Year & Semester: B. Tech / I Year II SEM (IT A Section & IT B SECTION)

Name of Faculty: Dr. V. Sesha Srinivas / Sri G. Srinivasa Rao

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board (BB) / LCD: PPT	Hours Required Lecture (L) / (T)		(Cumulative Hours)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading / Lagging	Review/ Remark (By HOD)
				L	T					
	Course Objectives and Outcomes									
1	Introduction To Programming	1	BB	1		1	27-12-2018	27-12-2018		
2	Character Set, Identifiers, Keywords, And Data Types	1	BB	1		2	27-12-2018	27-12-2018		
3	Data Types, Constants	1	BB	1		4	28-12-2018	28-12-2018		
4	Operators	1	BB	1		5	29-12-2018	29-12-2018		
5	Conditional Operator And Type Casting	1	BB	1		7	31-12-2018	31-12-2018		
6	Input Output Statements	1	BB	1		9	03-01-2019	03-01-2019		
7	Conditional Statements	1	BB	1		12	04-01-2019	04-01-2019		
8	Control Statements	1	BB	1		13	05-01-	05-01-		

Branch: **Information Technology** Academic Year: **2018-2019**

Subject Code & Name: **IT123 (R18) Programming for Problem Solving**

							2019	2019		
9	Programs On Iterative Statements	1	BB	1		15	08-01-2019	08-01-2019		
10	Programs On Do-while	1	BB	1		16	22-01-2019	22-01-2019		
11	Programs on Iterative Statements	1	BB	1		17	24-01-2019	24-01-2019		
12	Introduction To Arrays	2	BB	1		19	25-01-2019	25-01-2019		
13	Programs On Arrays	2	BB	1		20	29-01-2019	29-01-2019		
14	Programs On Arrays	2	BB	1		21	31-01-2019	31-01-2019		
15	Programs On Arrays	2	BB	1		22	02-02-2019	02-02-2019		
16	Selection Sort And Linear Search	2	BB	1		24	05-02-2019	05-02-2019		
17	Binary Search And Bubble Sort	2	BB	1		25	07-02-2019	07-02-2019		
18	Character Arrays	2	BB	1		**26**	09-02-2019	09-02-2019		
19	Programs on Strings	2	BB	1		27	12-02-2019	12-02-2019		
20	String Manipulation	2	BB	1		28	15-02-2019	15-02-2019		
21	2d Arrays	2	BB	1		29	19-02-2019	19-02-2019		
22	Matrix Programs	2	BB	1		30	21-02-2019	21-02-2019		
23	Functions	2	BB	1		31	22-02-2019	22-02-2019		

Branch: **Information Technology** Academic Year: **2018-2019**

Subject Code & Name: **IT123 (R18) Programming for Problem Solving**

24	Functions	2	BB	1		32	23-02-2019	23-02-2019		
25	Functions	2	BB	1		33	05-03-2019	05-03-2019		
26	Functions	2	BB	1		34	07-03-2019	07-03-2019		
27	String Functions	2	BB	1		35	08-03-2019	08-03-2019		
28	Introduction To Pointers.	2	BB	1		36	12-03-2019	12-03-2019		
29	Pointer Arithmetic And Structures	3	BB	2		37	13-03-2019	13-03-2019		
30	DMA And Recursion.	3	BB	1		38	14-03-2019	14-03-2019		
31	Recursion	3	BB	1		40	20-03-2019	20-03-2019		
32	Recursion	3	BB	1		41	22-03-2019	22-03-2019		
33	Structures	3	BB	1		42	23-03-2019	23-03-2019		
34	Programs on Structures	3	BB	1		43	26-03-2019	26-03-2019		
35	Union	4	BB	1		44	28-03-2019	28-03-2019		
36	Programs on unions	4	BB	1		45	01-04-2019	01-04-2019		
37	Storage Classes.	4	BB	1		46	09-04-2019	09-04-2019		
38	Structure Pointers	4	BB	2		48	10-04-2019	10-04-2019		
39	Introduction To Files.	4	BB	1		49	12-04-2019	12-04-2019		
40	File Handling.	4	BB	2		50	16-04-	16-04-		

Branch: Information Technology

Academic Year: 2018-2019

Subject Code & Name: IT123 (R18) Programming for Problem Solving

							2019	2019		
41	Command Line Arguments	4	BB	1		51	16-04-2019	16-04-2019		

Signature of the Faculty

Signature of the HOD:

Date:

IT 124 – English for Communication Skills

Academic Year: **2018-2019**

Year & Semester: **B.Tech / I Year II SEM (IT-A & B Sections)**

Branch: **Information Technology**

Subject Code & Name: **IT-124(R18) English for Communication Skills**

Name of Faculty: **Sri. M. Sudhakar**

Sl.No.	Topic of the syllabus to be covered	Learning Out comes	Teaching Mode: (BB) Black Board/LCD/ Power point presentation	Hours required: Lecture / Tutorial		Total No. of Hours (Cumulative)	Expected Date of Topic to Be covered	Actual Date of topic covered	Justification in case of leading/lagging	Review/ Remarks by H.O.D
				L	T					
1	UNIT – I Introduction: The Importance of LSRW skills.	Focus on the improvement of the skills needed.	BB	L		1	27-12-2018	27-12-2018		
2	Activity: JAM	Speaking Skill	BB	L		1	03-01-2019	03-01-2019		
3	Root Words	Vocabulary	BB	L		1	05-01-2019	10-01-2019		
4	Acronyms	Vocabulary	BB	L		1	08-01-2019	10-01-2019		
5	Exercises on Root Words & Acronyms	Vocabulary	BB	L		1	10-01-2019	10-01-2019		

6	Acronyms & One word substitutes	Vocabulary	BB	L		1	22-01-2019	22-01-2019		
7	Suffixes&Prefixes; Synonyms&Antonyms	Vocabulary	BB	L		1	24-01-2019	24-01-2019		
8	Proposal writing	Writing skill	BB	L		1	29-01-2019	07-02-2019		
9	Proposal writing	Writing skill	BB	L		1	31-01-2019	07-02-2019		
10	Proposal writing	Writing skill	BB	L		1	02-02-2019	07-02-2019		
11	Proposal writing	Writing skill	BB	L		1	05-02-2019	07-02-2019		
12	Proposal writing :exercises	Writing skill	BB	L		1	07-02-2019	07-02-2019		
13	E-mail writing	Writing skill	BB	L		1	12-02-2019	16-02-2019		
14	Activity: JAM	Speaking skill	BB	L		1	12-02-2019	12-02-2019		
15	E-mail writing	Writing skill	BB	L		1	14-02-2019	16-02-2019		
16	E-mail writing	Writing skill	BB	L		1	16-02-2019	16-02-2019		
17	Assignment questions & Answers	Reading & Writing skills	BB	L		1	19-02-2019	19-02-2019		
18	Precis writing	Reading & Writing skills	BB	L		1	21-02-2019	21-02-2019		
19	Revision	Reading skill	BB	L		1	23-02-2019	23-02-2019		
20	Grammar: Tenses	Writing skill	BB	L		1	05-03-2019	12-03-2019		
21	Tenses	Writing skill	BB	L		1	12-03-2019	12-03--2019		

22	Articles	Writing skill	BB	L		1	14-03-2019	14-03-2019		
23	Noun-Pronoun agreement	Writing skill	BB	L		1	23-03-2019	23-03-2019		
24	Subject-Verb agreement	Writing skill	BB	L		1	28-03-2019	28-03-2019		
25	Redundancies & Word Stress	Writing skill	BB	L		1	02-04-2019	02-04-2019		
26	Note Making and Note Taking	Writing skill	BB	L		1	04-04-2019	04-04-2019		
27	The methods of preparing notes	Writing skill	BB	L		1	09-04-2019	09-04-2019		
28	Revision	Reading & Writing skills	BB	L		1	16-04-2019	16-04-2019		

Signature of the Faculty

Signature of the HOD:
Date:

IT 151 – Physics Lab

Dr. Madhavi

Academic Year : 2018-2019

Year & Semester : B.Tech / I Year I SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name :IT151(R18) Physics Lab

Name of Faculty : Dr. D. Madhavi/ Smt V L Suneetha

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours (cumulative)	Expected date of Topic to becovered	Actual date of Topic covered	Review/ Remarks (By HOD)
Week1	Cycle 1: Measurements using Vernier Calipers and Screw Gauge	Understand the use of measuring instruments	3	3	16-08-2018	16-08-2018	
Week2	Cycle 1: Measurements using Vernier Calipers and Screw Gauge	Understand the use of measuring instruments	3	6	23-08-2018	23-08-2018	

Week3	Cycle 2: 1. Lissajous figure 2. ACSonometer 3. Photo Cell 4. Newton'sRings	1. Understand the use of function generator andCRO 2. Understand the concept of transverse waves in stretchedwire 3. Understand the photo electriceffect 4. Understand the phenomena of Interference of light in thinfilms	3	9	30-08-2018	30-08-2018	
Week4	Cycle 2: 1. Lissajous figure 2. AC Sonometer 3. Photo Cell 4. Newton's Rings	1. Understand the use of function generator and CRO 2. Understand the concept of transverse waves in stretched wire 3. Understand the photo electric effect 4. Understand the phenomena of Interference of light in thin films	3	12	06-08-2018	06-08-2018	
Week5	Cycle 2: 1. Lissajous figure 2. AC Sonometer 3. Photo Cell 4. Newton's Rings	1. Understand the use of function generator and CRO 2. Understand the concept of transverse waves in stretched wire	3	15	20-09-2018	20-09-2018	

		3. Understand the photo electric effect 4. Understand the phenomena of Interference of light in thin films					
Week6	Cycle 2: 1. Lissajous figure 2. AC Sonometer 3. Photo Cell 4. Newton's Rings	1. Understand the use of function generator and CRO 2. Understand the concept of transverse waves in stretched wire 3. Understand the photo electric effect 4. Understand the phenomena of Interference of light in thin films	3	18	27-09-2018	27-09-2018	
Week7	Cycle 3: 1. LCR Series Circuit 2. Field along the circular coil 3. Photo Voltaic Cell 4. Torsional Pendulum	1. Understand the determination of quality factor 2. Understand the tangent law 3. Understand the internal photo electric effect 4. Understand the determination of property of matter	3	21	04-10-2018	04-10-2018	

Week8	Cycle 3: 1. LCR Series Circuit 2. Field along the circular coil 3. Photo Voltaic Cell 4. Torsional Pendulum	1. Understand the determination of quality factor 2. Understand the tangent law 3. Understand the internal photo electric effect 4. Understand the determination of property of matter	3	24	25-10-2018	25-10-2018	
Week9	Cycle 3: 1. LCR Series Circuit 2. Field along the circular coil 3. Photo Voltaic Cell 4. Torsional Pendulum	1. Understand the determination of quality factor 2. Understand the tangent law 3. Understand the internal photo electric effect 4. Understand the determination of property of matter	3	27	01-11-2018	01-11-2018	
Week10	Cycle 3: 1. LCR Series Circuit 2. Field along the circular coil 3. Photo Voltaic Cell 4. Torsional Pendulum	1. Understand the determination of quality factor 2. Understand the tangent law 3. Understand the internal photo electric effect 4. Understand the determination of property of matter	3	30	08-11-2018	8-11-2018	
Week11	Revision of Cycle 2	Improve the experimental skills	3	33	15-11-2018	15-11-2018	

Week12	Revision of Cycle 3	Improve the experimental skills	3	36	22-11-2018	22-11-2018	

Signature of the Faculty

Signature of the HOD:
Date:

IT 152 – Basic Electrical Engineering Lab

Dharani (EEE)

Academic Year : 2018-2019

Year & Semester : B.Tech / I Year I SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT152 (R18) Basic Electrical Engineering LAB

Name of Faculty : Mr.N.Dharani Kumar/Mr.K.V.Gopala Chary

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review/ Remarks (By HOD)
Week1	Miniature Circuit Breakers (Mcbs), Moulded Case Circuit Breakers (Mccbs), Earth-Leakage Circuit Breakers (Elcbs), Fuses, Types of Wires, Wire	Familiarize with Electrical Installations and Electrical Testing Equipment	3	3	29-08-2018	29-08-2018	

	Gauges, Continuity Test. Megger, Cables and Earthing.						
Week2	BasicSafetyPrecautions,Introduction and use of Measuring Instruments – Voltmeter, Ammeter, Multi-Meter,Oscilloscope, Measurement of Basic Parameters	Familiarize with BasicSafetyPrecautions,Introduction and use of Measuring Instruments	3	6	05-09-2018	05-09-2018	
Week3	Verification of Kirchhoff's Laws	Understand the usage of Kirchhoff's Laws	3	9	12-09-2018	12-09-2018	
Week4	Verification of Superposition Theorem	Understand the usage of Superposition Theorem	3	12	19-09-2018	19-09-2018	
Week5	Verification of Thevenin's Theorem	Understand the usage Thevenin's Theorem	3	15	26-09-2018	26-09-2018	
Week6	Parameters of Choke Coil	Finding R,L parameter of a given choke	3	18	03-10-2018	03-10-2018	
Week7	O.C and S.C Tests on Single Phase Transformer	Familiarize with O.C and S.C Tests on Single Phase Transformer	3	21	24-10-2018	24-10-2018	
Week8	Swinburne's Test on Dc Shunt Machine	Familiarize with Swinburne's Test on Dc Shunt Machine	3	24	31-10-2018	31-10-2018	
Week9	Speed Control of D.C Shunt Motor	Familiarize with Load Test on 3 Phase Squirrel Cage Induction Motor	3	27	14-11-2018	14-11-2018	

Week10	Load Test on 3 Phase Squirrel Cage Induction Motor	Familiarize with Load Test on 3 Phase Squirrel Cage Induction Motor	3	30	28-11-2018	28-11-2018	

Signature of the Faculty

Signature of the HOD:
Date:

IT 153 – Engineering Graphics and Design Lab

Academic Year: 2018-2019

Year & Semester: B.Tech / I Year I SEM (IT A Section & IT B Section)

Branch: Information Technology

Subject Code & Name: IT 153 (R18) Engineering Graphics and Design Lab

Name of Faculty: K SNEHITA / M.S. CHOWHAN

Snehitha (M.S)

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review / Remarks (By HOD)
Week1	Over view of computer aided drafting (syllabus), course objectives & course outcomes were explained to the students. Introduction to CAD and setting of Screen • Traditional vs Conventional Drawing • CAD Purpose, Advantages and Disadvantages • starting of AUTO CAD • Screen environment and Auto CAD Vocabulary (Application button, Quick Access button, AutoCAD window Title bar,	Up on completion of laboratory, students will be able to produce computer generated drawings using CAD software..	3	3	16-08-2018	16-08-2018	

	Ribbon Panel, Navigation Bar, View Cube, USC Icon, Model and Layout Tab, Command Window, Status bar, Cursor, Drawing Area and its options, Dynamic Input… etc.) • Learning of different menus • Setting of Units and Limits • Command prompt. • Status bar (Object, snap, grid, polar, ortho, otrack ...etc.) • Functional keys (Shortcut Keys) • Open and Save the AutoCAD Files, Extensions • **Practice**						
Week2	Draw Tool Bar and Practice • Coordinate system • Line • Poly line • Circle • Arc • Rectangle • Ellipse • Hatch • Spline • Multiple points • Divide • Measure • Region • **Practice**		3	6	23-08-2018	23-08-2018	
Week3	Modify tool Bar and Practice (Drawing one component in front of student) • Erase • Trim • Stretch		3	9	30-08-2018	30-08-2018	

	• Copy • Move • Rotate • Mirror • Array • Fillet • Chafer • Scale • Offset • Explode • Edit Hatch • Edit Array • **Practice**						
Week4	Dimension Tool Bar & Practice • Text • Linear • Aligned • Angular • Arc Length • Radius • Diameter • Leader • Table • **Practice**		3	12	06-09-2018	06-09-2018	
Week5	**Practice**		3	15	20-09-2018	20-09-2018	
Week6	**Practice**		3	18	27-09-2018	27-09-2018	
Week7	**Practice**		3	21	04-10-2018	04-10-2018	

Week8	Drawing of Isometric views • Difference between Isometric Snap and rectangular snap • Iso Circles (In different Views) • **Practice**		3	24	25-10-2018	25-10-2018	
Week9	**Practice**		3	27	01-11-2018	01-11-2018	
Week10	**Practice**		3	30	08-11-2018	08-11-2018	
Week11	**Practice**		3	33	15-11-2018	15-11-2018	
Week12	Introduction to 3D, Layers layers and viewports (Isometric, Top, Front, back..etc)		3	36	22-11-2018	22-11-2018	

Signature of the Faculty

Signature of the HOD:

Date:

LESSON PLAN

Academic Year: 2018-2019

Year & Semester: B.Tech / I Year II SEM (IT-A Section)

Branch: Information Technology

Subject Code & Name: IT-161 (R18) CHEMISTRY LAB

Name of Faculty: Sri .M.Srinivasa Rao

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review/ Remarks (By HOD)
Week1	Introduction of Lab equipments, list of Experiments and their advantages in Engineering	Becomes more familiar with the equipment used in the lab	3	3	28-12-2018	28-12-2018	
Week2	Determination of total hardness of water using EDTA Method.	He can able to determine hardness of water sample	3	6	04-01-2019	04-01-2019	
Week3	Redox titrations – 1.Permanganometry – Estimation of Mohr are salt using Potassium permanganate.	Knows to evaluate Fe(II) concentration present in given solution	3	9	11-01-2019	11-01-2019	
Week4	2. Dichrometry – Estimation of Mohr's salt using Potassium Dichromate.	Knows to evaluate Fe(II) concentration present in given solution	3	12	18-01-2019	25-01-2019	
Week5	Conduct metric titrations- Determination of strength of Sodium Hydroxide.	He knows to measure the conductance of given solution	3	15	01-02-2019	08-02-2019	
Week6	Potentiometric titrations- Determinations of strength of Iron (II)	Knows to evaluate Fe(II) concentration using potentiometer	3	18	15-02-2019	15-02-2019	

Week7	P:reparation of Phenol-Formaldehyde resin	Learn to prepare resins	3	21	22-02-2019	22-02-2019	
Week8	Preparation of P-Bromo Acetanilide from acetanilide.	Learn to prepare simple organic compounds	3	24	01-03-2019	08-03-2019	
Week9	Determination of surface tension of the given organic liquid at room temperature w. r. t. water	Learn to determine molecular properties of given liquids	3	27	15-03-2019	22-03-2019	
Week10	Determination of chloride content present in the given water sample using Silver Nitrate.	Able to determine chloride content of water sample	3	30	29-03-2019	29-03-2019	
Week11	Determination of viscosity of the given liquid at room temperature w.r.t. water.	Learn to determine molecular properties of given liquids	3	33	05-04-2019	12-04-2019	

Signature of the Faculty

Signature of the HOD:
Date:

IT 162 - Programming for Problem Solving Lab

Academic Year: 2018-2019

Year & Semester: B.Tech / I Year II SEM (IT A Section & IT B Section)

Branch: Information Technology

Subject Code & Name: IT 162 (R18) Programming for Problem Solving Lab

Name of Faculty: Dr. V. Sesha Srinivas/ Sri. G. Srinivasa Rao

Week	Topic of syllabus to be covered	Hours Required Lab	Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review/ Remarks (By HOD)
W1	Sample Programs	2	2	26-12-2018	26-12-2018	
W2	Sample Programs	2	4	02-01-2019	02-01-2019	
W3	Sample Programs	2	6	08-01-2019	08-01-2019	
W4	Sample Programs	2	8	09-01-2019	09-01-2019	
W5	Sample Programs	2	10	22-01-2019	22-01-2019	
W6	Sample Programs	2	12	23-01-2019	23-01-2019	
W7	Programs On Conditional Statements	2	14	29-01-2019	29-01-2019	
W8	Programs On Conditional Statements	2	16	30-01-2019	30-01-2019	
W9	Programs On Control Statements	2	18	06-02-2019	06-02-2019	
W10	Programs On Iterative Statements	2	20	12-02-2019	12-02-2019	

W11	Programs On Iterative Statements	2	22	13-02-2019	13-02-2019	
W12	Programs On Iterative Statements	2	24	19-02-2019	19-02-2019	
W13	Programs On Iterative Statements	2	26	20-02-2019	20-02-2019	
W14	Programs On Arrays	2	28	05-03-2019	05-03-2019	
W15	Programs On Arrays	2	30	06-03-2019	06-03-2019	
W16	Programs On Arrays.	2	32	12-03-2019	12-03-2019	
W17	Programs On Strings	2	34	13-03-2019	13-03-2019	
W18	Programs On Functions	2	36	20-03-2019	20-03-2019	
W19	Programs On Functions	2	38	27-03-2019	27-03-2019	
W20	Programs On Pointers	2	40	03-04-2019	03-04-2019	
W21	Programs On Files.	2	42	16-04-2019	16-04-2019	
W22	Files	2	44	17-04-2019	17-04-2019	

Signature of the Faculty

Signature of the HOD:

Date:

IT 163 – Workshop Practices Lab

Academic Year: 2018-2019

Year & Semester: B.Tech / I Year II SEM (IT A Section & IT B Section)

Branch: Information Technology

Subject Code & Name: IT 163 (R18) Workshop Practices Lab

Name of Faculty: K SNEHITA / T.N.S. RAMAKRISHNA

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review/ Remarks (By HOD)
Week1	Syllabus for the course including course objectives & course outcomes were explained to the students. Introduction to different trades: Welding shop,Fitting Shop&Casting, Electrical wiring, Carpentry and Tin Smithy	Up on completion of laboratory, students will be able to gain the manufacturing skills and get practical knowledge of the dimensional accuracies and dimensional tolerances possible with different manufacturing processes.	3	3	08-01-2019	08-01-2019	
Week2	Jobs-1,2 in each Trade		3	6	22-01-2019	22-01-2019	
Week3	Job-3 in each Trade		3	9	29-01-2019	29-01-2019	

Week4	Trade change & Jobs-1,2 in each Trade		3	12	05-02-2019	05-02-2019	
Week5	Job-3 in each Trade		3	15	12-02-2019	12-02-2019	
Week6	Trade change & Jobs-1,2 in each Trade		3	18	19-02-2019	19-02-2019	
Week7	Job-3 in each Trade		3	21	05-03-2019	05-03-2019	
Week8	Trade change & Jobs-1,2 in each Trade		3	24	12-03-2019	12-03-2019	
Week9	Job-3 in each Trade		3	27	19-03-2019	19-03-2019	
Week10	Trade change & Jobs-1,2 in each Trade		3	30	26-03-2019	26-03-2019	
Week11	Job-3 in each Trade		3	33	02-04-2019	02-04-2019	
Week12	Machine Shop demo- Practice of machining operations on Lathe, Milling, Shaping, Drilling and Slotting Machines		3	36	09-04-2019	09-04-2019	
Week13	Demos - Plastic Moulding, Glass Cutting,Turning on wood turning Lathe, Measurement of resistance, voltage and current with the help of a multi-meter & solderingon an electronic PCB circuit, Gas welding		3	39	16-04-2019	16-04-2019	

Signature of the Faculty

Signature of the HOD:
Date:

IT 164 – English Language Communication Skills Lab

Academic Year: 2018-2019

Year & Semester: B.Tech / I Year II SEM (IT-A & B Sections)

Branch: Information Technology

Sl.No.	Topic of the syllabus to be covered	Learning Out comes	Teaching Mode: (BB)Black Board/ LCD/Power point presentation/Computer (C)/Activity Room (AR)	Hours required: Lecture/ Tutorial		Total No. of Hours (Cumulative)	Expected Date of Topic to Be covered	Actual Date of topic covered	Review/ Remarks by H.O.D
				L	T				
1	Phonetics	Listening & Speaking skills	BB	1		2	27-12-2018	24-01-2019	
2	Exercises on sounds and symbols	Listening & Speaking skills	C	1		2	03-01-2019	24-01-2019	
3	Exercises on Listening Comprehension	Listening skill	C	1		2	10-01-2019	10-01-2019	

4	Phonetics Activity: JAM	Listening & Speaking skills	C	L		2	24-01-2019	24-01-2019	
5	Topics & Videos on Group Discussion	Speaking skill	C	L		2	31-01-2019	31-01-2019	
6	Activity: Group Discussion	Speaking skill	AR	L		2	07-02-2019	14-02-2019	
7	Activity: Group Discussion	Speaking skill	AR	L		2	14-02-2019	14-02-2019	
8	Exercises on Precis writing & Letter writing.	Reading & Writing skills	C	L		2	21-02-2019	21-02-2019	
9	Exercises on Tenses & Paragraph writing.	Writing skill	C	L		2	07-03-2019	07-03-2019	
10	Exercises on Noun-Pronoun agreement & Expository Essay	Writing skill	C	L		2	14-03-2019	14-03-2019	
11	Reading Comprehension & Observation correction.	Reading skill	C	L		2	28-03-2019	28-03-2019	
12	Formal presentations &Interviews	Speaking & Writing skills	C	L		2	04-04-2019	04-04-2019	

Signature of the Faculty

Signature of the HOD:
Date:

LESSON PLAN

Academic Year : 2019-2020

Year & Semester : B.Tech / II Year II SEM (IT-A Section & IT-B Section)

Branch : Information Technology

Subject Code & Name : IT211 (R18) MATHEMATICS-III

Name of Faculty : Dr.B.Srinivasa Rao/ Dr.K.S.B.Murugan/Dr.M.Sudhakar

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	**UNIT - I** Random variables	Understand the concept of Random variable, , continuous random variable, probability mass function, probability density function	BB	1		1	07-07-2019	07-07-2019		
2	Discrete random variables and their properties	Understand the notion of Discrete random variable and their properties		1		2	08-07-2019	08-07-2019		
3	Expectation of Discrete Random Variables	Understand the concept of finding the mean and variance of a discrete random variable with mathematical expectation		1		3	09-07-2019	09-07-2019		

Bagpath. Srinivasa Rao

4	Continuous random variables and their properties.	Understand the notion of continuous random variable and their properties		2		5	18-07-2019 18-07-2019	17-07-2019		
5	Expectation of Continuous Random Variables,	Understand the concept of finding the mean and variance of a continuous random variable with mathematical expectation		1		6	19-07-2019	18-07-2019		
6	Distribution functions and densities	Understand the relationship between the distribution function and density function		2		8	22-07-2019	20-07-2019		
7	Moments.	Understand how to calculate the moments of the distribution		1		9	23-07-2019	21-07-2019		
8	Chebyshev's Inequality.	Understand the application of chebyshev's inequality		1		10	24-07-2019	22-07-2019		
9	**UNIT - II** Binomial distribution	Understand the notion of Binomial distribution and to solve the problems on BD		1		11	25-07-2019	23-07-2019		
10	Mean and variance of Binomial distribution	Understand the concept of finding the mean and variance of BD		1		12	27-07-2019	25-07-2019		
11	Poisson approximation to the binomial distribution.	Understand the relation between Poisson and Binomial distributions		1		13	28-07-2019	27-07-2019		
12	Poisson distribution	Understand the notion of Binomial distribution and to solve the problems on PD		1		14	30-07-2019	29-07-2019		
13	Mean and variance of Poisson distribution	Understand the concept of finding the mean and variance of PD		1		15	31-07-2019	30-07-2019		

14	Normal approximation to the binomial distribution.	Understand the application of Normal distribution if the Binomial distribution is tedious		1		16	02-08-2019	31-07-2019		
15	Normal distribution	Understand the notion of Normal distribution and to solve the problems on ND		2		18	03-08-2019 04-08-2019	02-08-2019		
16	Exponential distribution	Understand the application of exponential distribution in reliability studies		1		19	07-08-2019	05-08-2019		
17	Gamma distribution	Know the concept of Gamma Distribution and its applications		1		20	08-08-2019	07-08-2019		
18	**UNIT - III** Correlation	Understand the application of Correlation coefficient		2		22	04-09-2019 05-09-2019	02-09-2019		
19	Regression	Understand the application of Regression lines		2		24	06-09-2019 07-09-2019	04-09-2019		
20	Rank Correlation	Understand the application of Rank correlation		2		26	08-09-2019 09-09-2019	06-09-2019		
21	Curve fitting	Understand Curve fitting by using principle of least squares		1		27	10-09-2019	08-09-2019		
22	Straight line fit	Application of least squares method for fitting straight line		1		28	12-09-2019	10-08-2019		
23	Parabola fit	Application of least squares method for fitting parabola		1		29	16-092019	14-09-2019		
24	Power Curve fit	Application of least squares method for fitting power curve		1		30	17-09-2019	15-09-2018		
25	Exponential curve fit	Application of least squares method for fitting exponential curve		1		31	18-09-2019	16-09-2019		
26	**UNIT - IV** Test of significance	Understand the meaning of testing of significance		1		32	19-09-2019	18-09-2019		

27	Hypothesis concerning one mean	Understand the procedure for solving the problems concerning one-mean		1		32	20-09-2019	19-09-2019		
28	Hypothesis concerning two means	Understand the procedure for solving the problems concerning two-means		1		33	21-09-2019	20-09-2019		
29	Estimation of variances	Understand the concept of estimation of variances		1		34	23-09-2019	22-09-2019		
30	Hypotheses concerning one variance	Understand the procedure for solving the problems concerning one-variance		1		35	24-09-2019	23-09-2019		
31	Hypotheses concerning two variances.	Understand the procedure for solving the problems concerning two-variances		1		36	25-09-2019	24-09-2019		
32	Estimation of proportions	Understand the estimation of proportions		1		37	26-09-2019	25-09-2019		
33	Hypothesis concerning one proportion	Understand the procedure for solving the problems concerning one-proportion		1		38	27-09-2019	26-09-2019		
34	Hypothesis concerning several proportions.	Understand the procedure for solving the problems concerning several-proportions		1		39	29-09-2019	28-09-2019		
35	Chi-square test for goodness of fit for Binomial distribution	Understand the application of chi-square test for testing goodness of BD fit		1		40	01-10-2019	30-09-2019		
36	Chi-square test for goodness of fit for Poisson distribution	Understand the application of chi-square test for testing goodness of PD fit		1		41	03-10-2019	01-10-2019		
37	Chi-square test for goodness of fit for attributes	Understand the application of chi-square test for testing goodness of atttributes		1		42	04-10-2019	03-10-2019		

Signature of the Faculty

Signature of the HOD:
Date:

RVR & JC COLLEGE OF ENGINEERING :: CHOWDAVARAM 522 019
IT212(R18): LIFE SCIENCE FOR ENGINEERS
(COMMON FOR ALL BRANCHES OF ENGINEERING)
LESSON PLAN

Content Delivery Methods

M1: Lecture interspersed with discussion/Recapitulation questions/Power point presentations
M2: Demonstration
M3: TPS/Peer group learning/Flipped class room activity/Seminar

Topic(s) to be covered	No. of Periods	Text Book/ Reference Book	Delivery Methods
UNIT - I			
Introduction to Life Sciences: Cell and cell organelles	1	T. B. of Cell Biology by De Robertis; Verma and Agarwal T. B. of Microbiology – Pelczar, Chan and Krieg	M1
Cells And Their Visualization - Microscopy; Magnifying Power and Resolution; Uni and Multicellular Organisms	1	-do-	M2
Prokaryotes And Eukaryotes; Chemical Organization Of Nucleic Acids; Central Dogma And Central Dogma Reverse	1	-do-	M1
Differences Between Pro And Eukaryotes; An Overview Of Ribosomes	1	-do-	M1
Carbon And Energy Utilization; Classification Of Organisms as given by Linnaeus and Whittaker	1	-do-	M1
Biological systems Vs. Man made systems; Molecular Taxonomy (Research Paper)	1	-do-	M3, M1
UNIT - II			
Biomolecules - Major Classes; Proteins – General Characteristics; Classification Of Amino Acids based on polarity and charge; Protein structure – Primary structure	1	T. B. of Biochemistry by U. Satyanarayana and U. Chakrapani Lehninger principles of Biochemistry by Nelson and Cox	M1
Protein Structure – Secondary, Tertiary and Quaternary Structures with appropriate examples; Structure of Haemoglobin	2	Introduction to Protein Structure by Branden and Tooze	M1
Carbohydrates - Introduction; Classification, Some Characteristics Like Linkages, Optical Property etc. Tests For Carbohydrates - Benedict's, Fehling's Tests; Functions Of Carbohydrates	1	-do-	M1
Fats - Introduction And Classification With Examples	1	-do-	M1
Enzymes – General Introduction And Six Classes; Factors Affecting enzymes; Enzyme kinetics and inhibition methods (Flipped class room activity – Fermentation, role of enzymes in fermentation)	1	-do-	M3

K. Sobhan

Introduction To Immune System Of The Body; Antibody Functions; Types Of Immunity: Active/passive And B-cell Mediated And T-cell Mediated Antibody - Structure	1	-do-	M1
UNIT - III			
Introduction To Metabolism; Outlines Of Glycolysis; Link Reaction Between Glycolysis And Kreb's Cycle; Kreb's Cycle And Energetics	2	T. B. of Biochemistry by U. Satyanarayana Lehninger's principles of Biochemistry by Nelson and Cox	M1
Oxidative phosphorylation- Structure of mitochondria; Organization of electron transport chain and step-wise release of energy	2	-do-	M1
Nerve impulse – propagation across non-myelinated and myelinated nerve fibers; Synapse and synaptic transmission across neuro-muscular junction	1	-do-	M1
Photosynthesis – Structure of chloroplast; Light and Dark reactions	1	-do-	M1
Differentiate between cyclic and non-cyclic photo-phosphorylations; Oxidative phosphorylation and photophosphorylation (TPS activity)	1	-do-	M3
UNIT - IV			
Introduction to Genetics; Mendel's principles of inheritance with examples Flipped class room activity on Mitosis and Meiosis	3	T. B. of Genetics by AVS Sambamurthy	M1, M3
Human blood groups and inheritance; Single gene disorders – Sickle cell anaemia, Haemophilia	2		M1
DNA replication – Semi-conservative method; Transcription and Translation in prokaryotes	3		M1
Recombinant DNA Technology – Human Insulin Production; Recombinant Vaccines; Animal cloning – Cloning of dolly sheep	2		M1
Total number of periods	**30**		

K. Sekhar

Signature of the Faculty

A. Srikrishna

Signature of the HOD:
Date:

IT213 (R18) Digital Electronics

Academic Year : 2019-2020

Year & Semester : B.Tech. / II Year I SEM (IT – A &B SECTIONS)

Branch : Information Technology

Subject Code & Name : IT213 (R18) Digital Electronics

Name of Faculty : Smt T.Suneetha/ Ms. M.Himaja

Sl. No.	Topic of syllabus to be covered	Learning Out Comes	TeachingMode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expecteddate of Topic to be covered	Actual dateof Topiccovered	Justificationin case ofLeading/Lagging	Review/Remarks (By HOD)
				L	T					
1	Course Objectives, Outcomes & Review the Syllabus	Understand the importance of the course	BB	1		1	06-06-2019	06-06-2019		
UNIT – I (14 Hours)										
2	Representation of Digital Signals , Basic Digital Circuits (AND,OR,NOT)	Understand the Truth Tables and function of Basic Digital Circuits	BB	1		2	11-06-2019	11-06-2019		
3	EXOR, EXNOR , NAND	Understand the Truth Tables and function of EXOR,EXNOR,NANAD	BB	1		3	12-06-2019	12-06-2019		
4	NOR , Number systems (Introduction and Decimal to other Number systems Conversion)	Understand about various types of Number Systems	BB	1		4	13-06-2019	13-06-2019		
5	Conversions of Number Systems	Understand the Conversions of Number Systems	BB	1		5	18-06-2019	18-06-2019		
6	Boolean Algebra Theorems	Understand about the various Boolean Algebra Theorems	BB	1		6	19-06-2019	19-06-2019		
7	Binary Arithmetic	Understand about different Binary Arthimetic Operations	BB	2		8	20-06-2019	20-06-2019		

8	Octal and Hexadecimal Arithmetic	Understand about different types of Octal and Hexadecimal Arithmetic Operations	BB	1		9	25-06-2019	25-06-2019		
9	Weighted and Non Weighted Codes	Understand different types of Weighted and Non Weighted Codes	BB	1		10	26-06-2019	26-06-2019		
10	Alphanumeric Codes and signed Binary Numbers	Understand about signed Magnitude, ones Complement, twos Complement Representations	BB	1		11	27-06-2019	27-06-2019		
11	Subtraction using Complements	Understand about procedure of Subtraction using Complements	BB	2		13	03-07-2019	03-07-2019		
12	Error detecting and Correcting Codes	Understand different types of Error Detecting and Correcting Codes	BB	1		14	06-07-2019	06-07-2019		
UNIT – II (18 Hours)										
13	Standard Representations of Logic Functions (SOP, POS)	Understand about SOP and POS	BB	1		15	09-07-2019	09-07-2019		
14	K Map Representation of Logic Functions and use of Don't cares	Understand the Procedure of Simplification using K Maps	BB	3		18	16-07-2019	16-07-2019		
15	5 and 6 variable K Maps	Understand about the use 5 and 6 variable K Maps	BB	1		19	17-07-2019	17-07-2019		
16	Design Examples (Half Adder, Full Adder, Half Subtractor, Full Subtractor , Multiplexers and Encoders)	Understand about Half Adder, Full Adder, Half Subtractor, Full Subtractor , Multiplexers and Encoders	BB	3		22	23-07-2019	23-07-2019		
17	ALU, Simplification of EXOR AND EXNOR using Diagonal and Offset	Understand the working of ALU, Simplification of EXOR AND EXNOR using Diagonal and Offset	BB	1		23	24-07-2019	24-07-2019		
18	Quine Mc cluskey Method	Understand the Procedure to Simplify given SOP and POS using Quine Mc cluskey Method	BB	3		26	31-07-2019	31-07-2019		
19	Design of Digital Comparators, DeMultiplexers, Decoders	Understand about the Design of Digital Comparators, DeMultiplexers, Decoders	BB	2		28	06-08-2019	06-08-2019		
20	BCD Adder and subtractor circuits	Understand about the operation of BCD Adder and Subtractor circuits		2		30	08-08-2019	08-08-2019		
21	Binary Parallel Adder and Carry Look Ahead Adder	Understand about the operation of Binary Parallel Adder and use of Carry look ahead Adder		2		32	14-08-2019			

UNIT – III (9 Hours)										
22	Introduction and 1Bit Memory Cell	Understand the Operation of 1Bit Memory cell	BB	1		33	27-08-2019	27-08-2019		
23	SR,JK,T,D Flip Flops (Truth Tables, Excitation Tables and Output Expressions)	Understand the various types of Flip Flops	BB	1		34	28-08-2019	28-08-2019		
24	Master slave JK Flip Flop and conversion of Flip Flops	Understand the procedure to convert from one Flip Flop to other	BB	2		36	04-09-2019	04-09-2019		
25	Clocked Flip Flop design and Specifications of Edge triggered Flip Flops	Understand the Clocked Flip Flop design and Timing Specifications of Edge triggered Flip Flops	BB	1		37	05-09-2019	05-09-2019		
26	Shift registers and its Applications(Ring and Johnson Counters)	Understand SISO,SIPO,PISO,PIPO Shift registers and their applications	BB	2		39	12-10-2019	12-10-2019		
27	Design of Synchronous and Asynchronous Counters	Understand and Design of Synchronous and Asynchronous Counters	BB	2		41	17-09-2019	17-09-2019		
UNIT – IV (8 Hours)										
28	Introduction to PLD	Understand the classification of PLD's	BB	1		42	18-09-2019	18-09-2019		
29	PROM,PAL,PLA	Understand the structure of PROM,PLA,PAL	BB	2		44	23-09-2019	23-09-2019		
30	Specifications and Types of DAC	Understand the Specifications and Operation of Weighted Resistor DAC and R to 2R Ladder DAC	BB	2		46	25-09-2019	25-09-2019		
31	Successive Approximation ADC	Understand the Operation of Successive Approximation ADC	BB	1		47	26-09-2019	26-09-2019		
32	Quantisation and Encoding	Understand the basics of Quantisation and Encoding	BB	1		48	01-10-2019	01-10-2019		
33	Flash Type ADC	Understand the Operation of Flash Type ADC	BB	1		49	03-10-2019	03-10-2019		

Signature of the Faculty: M.Hima

Signature of the HOD: A Srikrishna

Date:

IT214 (R18) DISCRETE MATHEMATICAL STRUCTURES

Academic Year: 2018-2019

Year & Semester: B. Tech / II Year III SEM

Branch: Information Technology

Subject Code & Name: IT214 (R18) DISCRETE MATHEMATICAL STRUCTURES

Name of Faculty: Sri. V. Venkata Srinivasu

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T) L	T	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading /Lagging	Review/ Remarks (By HOD)
1	**UNIT - I** **The Foundations:** Logic and Proofs	Students should be able to • Explain Logics and proofs	BB	1		1	06-06-2019	06-06-2019		
2	Propositional Logic	Students should be able to • Understand Propositional logic	BB	1		2	06-06-2019	07-06-2019		
3	Applications of Propositional Logic	Students should be able to • Various Applications of Propositional Logic	BB	1		3	07-06-2019	10-06-2019		
4	Propositional Equivalences	Students should be able to • Understand the propositional equivalences	BB	1		4	10-06-2019	11-06-2019		
5	Predicates and Quantifiers, Nested Quantifiers	Students should be able to • Explain the term quantifiers • Identified basic quantifier, nested quantifier	BB	1		5	11-06-2019	14-06-2019		

6	Rules of Inference	Students should be able to • Understand the Rules of Inference	BB	1	6	14-06-2019	15-06-2019
7	Introduction to Proofs	Students should be able to • Proof theorem using indirect and direct proof technique	BB	1	7	15-06-2019	20-06-2019
8	Proof Methods and Strategy	Students should be able to • Proof theorem using indirect and direct proof technique	BB	1	8	20-06-2019	21-06-2019
9	**Basic Structures:** Sets, Set Operations	Students should be able to: • Describe set theory, and logic to solve computer science problem.	BB	1	9	21-06-2019	22-06-2019
10	Functions	Students should be able to • Understand definition of function. Solve function problems	BB	1	10	22-06-2019	25-06-2019
11	Functions	Students should be able to • Understand definition of function. Solve function problem	BB	1	11	25-06-2019	28-06-2019
12	Sequences and Summations, Cardinality of Sets	Students should be able to • Build sequences and summations	BB	1	12	28-06-2019	29-06-2019
13	**UNIT-II** **Induction and Recursion:** Mathematical Induction	Students should be able to • Explain the Basic Principle of Multiplication and application in real world.	BB	1	13	29-06-2019	01-07-2019
14	Strong Induction and Well-Ordering	Students should be able to • Explain the strong induction and well-ordering	BB	1	14	01-07-2019	05-07-2019
15	Recursive Definitions	Students should be able to • Explain the recursive definitions	BB	1	15	05-07-2019	06-07-2019

16	Structural Induction, Recursive Algorithms	Students should be able to • Explain the structural induction • Build recursive algorithms	BB	1	16	06-07-2019	06-07-2019
17	**Counting:** The Basics of Counting	Students should be able to • Explain the Basic Principle of Multiplication and application in real world.	BB	1	17	06-07-2019	09-07-2019
18	The Pigeonhole Principle	Students should be able to • Understand Pigeon Hole Principle • Proof theory using Pigeon Hole Principle.	BB	1	18	09-07-2019	12-07-2019
19	Permutations and Combinations	Students should be able to • Explain and solve permutation and combination problem	BB	1	19	12-07-2019	20-07-2019
20	Generalized Permutations and Combinations	Students should be able to • Explain and solve permutation and combination problems	BB	1	20	20-07-2019	23-07-2019
21	Generalized Permutations and Combinations	Students should be able to • Explain and solve permutation and combination problems	BB	1	21	23-07-2019	26-07-2019
22	Generating Permutations and Combinations	Students should be able to • Explain and solve permutation and combination problems	BB	1	22	26-07-2019	27-07-2019
23	Generating Permutations and Combinations	Students should be able to • Explain and solve permutation and combination problems	BB	1	23	27-07-2019	30-07-2019
24	**UNIT III** **Advanced Counting Techniques:** Applications of Recurrence Relations	Students should be able to • Explain the advanced counting techniques and applications in real world.	BB	1	24	30-07-2019	02-08-2019

25	Solving Linear Recurrence Relations	Students should be able to • Explain the recurrence relations. • Build sequence using recurrence algorithm.	BB	1	25	02-08-2019	03-08-2019
26	Divide-and-Conquer Algorithms and Recurrence Relations	Students should be able to • Explain the Divide-and-Conquer algorithms.	BB	1	26	03-08-2019	03-08-2019
27	Generating Functions	Students should be able to • Build the generating functions.	BB	1	27	03-08-2019	03-08-2019
28	Generating Functions	Students should be able to • Build the generating functions.	BB	1	28	03-08-2019	06-08-2019
29	Inclusion-Exclusion, Applications of Inclusion-Exclusion	Students should be able to • Explain the Inclusion-Exclusion principle and applications in real world.	BB	1	29	06-08-2019	09-08-2019
30	**Relations:** Relations and Their Properties	Students should be able to • Represent relation with digraph and matrix. • Identified the properties of relations.	BB	1	30	09-08-2019	13-08-2019
31	n-ary Relations and Their Applications	Students should be able to • Represent n-ary relations and applications.	BB	1	31	13-08-2019	30-08-2019
32	n-ary Relations and Their Applications	Students should be able to • Represent n-ary relations and applications.	BB	1	32	30-08-2019	31-08-2019
33	Representing Relations	Students should be able to • Represent relation with different formats like digraph and matrix.	BB	1	33	31-08-2019	13-09-2019
34	Closures of Relations	Students should be able to • Represent closures of relations.	BB	1	34	13-09-2019	14-09-2019

35	**UNIT IV** **Relations:** Equivalence Relations	Students should be able to • Represent closures of relations.	BB	1	35	14-09-2019	17-09-2019
36	Equivalence Relations	Students should be able to • Solve the equivalence relations problems.	BB	1	36	17-09-2019	17-09-2019
37	Partial Orderings	Students should be able to • Draw the poset of digraph.	BB	1	37	17-09-2019	18-09-2019
38	**Graphs:** Graphs and Graph Models	Students should be able to • Understand the definition of graph. • Apply graph theory in real world problem	BB	1	38	18-09-2019	20-09-2019
39	Graph Models	Students should be able to • Understand different graph models.	BB	1	39	20-09-2019	21-09-2019
40	Graph Terminology and Special Types of Graphs	Students should be able to • Understand the graph terminology and special types of graphs.	BB	1	40	21-09-2019	24-09-2019
41	Graph Terminology and Special Types of Graphs	Students should be able to • Understand the graph terminology and special types of graphs.	BB	1	41	24-09-2019	25-09-2019
42	Representing Graphs	Students should be able to • Understand the definition of graph. • Apply graph theory in real world problem	BB	1	42	25-09-2019	27-09-2019
43	Graph Isomorphism	Students should be able to • Solve isomorphism of two graphs.	BB	1	43	27-09-2019	28-09-2019
44	Connectivity	Students should be able to • Understand the connectivity of graphs.	BB	1	44	28-09-2019	01-09-2019
45	Euler and Hamilton Paths	Students should be able to • Solve Euler and Hamilton paths, circuits and graphs.	BB	1	45	01-09-2019	04-10-2019

46	Euler and Hamilton Paths	Students should be able to • Solve Euler and Hamilton paths, circuits and graphs.	BB	1	46	04-10-2019	04-10-2019
47	Planar Graphs, Graph Coloring	Students should be able to • Understand planar graphs and solve graph coloring.	BB	1	47	04-10-2019	04-10-2019

V. V. Lavanya

Signature of the Faculty

Signature of the HOD: A. Srikrishna

Date:

IT215 (R18) DATA STRUCTURES

Academic Year : 2019-2020

Year & Semester : B.Tech / II Year I SEM (ITA Section & ITB SECTION)

Branch : Information Technology

Subject Code & Name : IT215 (R18) DATA STRUCTURES

Name of Faculty : Dr. V. Sesha Srinivas / Dr. N. NagaMalleswara Rao

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours (cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
0	Discussed course objectives, outcomes and syllabus	Familiarized with objectives and outcomes of the course	BB	1						
1	Introduction To Data Structures	Data Structure necessity	BB	1		1	6/6/2019	6/6/2019		
2	Sample Programs		BB	1		2	7/6/2019	7/6/2019		
3	Sample Programs		BB	2		3	12/6/2019	12/6/2019		

4	Sample Programs , Introduction To Linked Lists	Implementation of Linked list	BB	1		5	13/06/2019	13/06/2019		
5	Introduction To Linked Lists		BB	1		6	13/06/2019	13/06/2019		
6	List Creation		BB	1		7	14/06/2019	14/06/2019		
7	List Creation		BB	1		8	17/06/2019	17/06/2019		
8	Insert Operations		BB	2		9	19/06/2019	19/06/2019		
9	Insert And Delete Operations On List		BB	1		11	20/06/2019	20/06/2019		
10	List Operations		BB	1		12	21/06/2019	21/06/2019		
11	Main Program For List Functions		BB	2		13	26/06/2019	26/06/2019		
12	Circular List	Implementation of Circular Linked list	BB	1		15	27/06/2019	27/06/2019		
13	Doubly Linked List	implementation of Doubly Linked List-Insert Operations	BB	1		16	28/06/2019	28/06/2019		

14	Algorithm Analysis	Algorithm Analysis	BB	2		17	3/7/2019	3/7/2019		
15	Algorithm Analysis		BB	1		19	4/7/2019	4/7/2019		
16	Algorithm Analysis		BB	1		20	4/7/2019	4/7/2019		
17	Delete Dll	implementation of Doubly Linked List-Delete Operations	BB	1		21	5/7/2019	5/7/2019		
18	Polynomial	List Application - Polynomial Manipulation	BB	1		22	10/7/2019	10/7/2019		
19	Polynomial		BB	1		23	11/7/2019	11/7/2019		
20	Polynomial Add And Sub		BB	1		24	12/7/2019	12/7/2019		
21	Polynomial Multiplication		BB	1		25	16/07/2019	16/07/2019		
22	Polynomial Multiplication		BB	1		26	16/07/2019	16/07/2019		
23	Stacks	Stack Implementation	BB	1		27	17/07/2019	17/07/2019		

24	Stack Implementation	Stack Implementation	BB	1		28	18/07/2019	18/07/2019		
25	Stack Implementation	Stack Implementation	BB	1		29	19/07/2019	19/07/2019		
26	Application - Parenthesis Matching	Applications on Stacks	BB	1		30	19/07/2019	19/07/2019		
27	Parenthesis Matching		BB	1		31	24/07/2019	24/07/2019		
28	Infix To Postfix Conversion		BB	1		32	25/07/2019	25/07/2019		
29	Postfix Evaluation		BB	1		33	26/07/2019	26/07/2019		
30	List Representation Of Stack		BB	1		34	31/07/2019	31/07/2019		
31	Infix To Post Fix Conversion		BB	1		35	1/8/2019	1/8/2019		
32	Applications On Stack		BB	1		36	2/8/2019	2/8/2019		
33	Queues	Queue Implementation	BB	1		37	8/8/2019	8/8/2019		

34	Queues	Queue Implementation	BB	1		38	9/8/2019	9/8/2019		
35	Circular Queues	Queue Implementation	BB	1		39	14/08/2019	14/08/2019		
36	Double Ended Queue And Priority Queue	Queue Variations	BB	2		40	28/08/2019	28/08/2019		
37	Introduction To Trees And Expression Tree And Display	Tree representation and display methods	BB	1		42	30/08/2019	30/08/2019		
38	BST	Binary Search tree	BB	2		43	4/9/2019	4/9/2019		
39	Bst	Binary Search tree	BB	1		45	5/9/2019	5/9/2019		
40	AVL	AVL	BB	1		46	6/9/2019	6/9/2019		
41	AVL	AVL	BB	2		47	11/9/2019	11/9/2019		
42	AVL	AVL	BB	1		49	12/9/2019	12/9/2019		
43	AVL	AVL	BB	1		50	13/9/2019	13/9/2019		
44	AVL	AVL	BB	2		51	18/9/2019	18/9/2019		

45	Heap Tree	Heap	BB	1		53	19/9/2019	19/9/2019		
46	B Trees	B Trees	BB	1		54	20/9/2019	20/9/2019		
47	Hashing	Hash Table	BB	1		55	20/9/2019	20/9/2019		
48	Hashing	Separate Chaining	BB	2		56	25/9/2019	25/9/2019		
49	Hashing	Open Addressing	BB	1		58	26/9/2019	26/9/2019		
50	Sortings	Sorting Techniques	BB	2		59	27/9/2019	27/9/2019		
51	Sortings		BB	1		61	3/10/2019	3/10/2019		
52	Sortings		BB	1		62	4/10/2019	4/10/2019		

Signature of the Faculty

Signature of the HOD:
Date:

LESSON PLAN

Academic Year : 2019 - 2020

Year & Semester : B. Tech. / II Year I SEM (IT – A & B SECTIONS)

Branch : Information Technology

Subject Code & Name : IT216 (R18) Object Oriented Programming

Name of Faculty : Dr. G. Rama Mohan Babu/ Srmt. N. Neelima

Sl. No.	Topic of syllabus to be covered	Learning Out Comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/Remarks (By HOD)
				L	T					
1	Course Objectives, Outcomes & Review the Syllabus	Understand the importance of the course	BB/LCD	1		1	07-06-2019	07-06-2019		
UNIT – I (12 Hours)										
2	Introduction to Java – Object Oriented features of Java	Understand Java features – able differentiate procedure & Object oriented features of programming	BB/LCD	1		2	10-06-2019	10-06-2019		
3	Datatypes & operators – Type conversion and casting	Understand and use of various datatypes, operators, and type conversion & Casting	BB/LCD	1		3	14-06-2019	14-06-2019		

4	Control statements – scope and life time of variables	Understand and able to programme with control structures & scope and life time of variables	BB	1		4	14-06-2019	14-06-2019		
5	Arrays	Uderstand and programme arrays	BB/ LCD	1		5	15-06-2019	15-06-2019		
6	Classes & Objects – methods & constructors	Understand and design classes & objects	BB	1		6	17-06-2019	17-06-2019		
7	Access control – use of static variables & methods	Understand and use access control, static variables and methods	BB/ LCD	1		7	18-06-2019	18-06-2019		
8	Usage of this & garbage collection – parameter passing and overloading methods	Understand and use this keyword, parameter passing mechanism, overloading - understand the working principle of garbage collection	BB/ LCD	1		8	21-06-2019	21-06-2019		
9	Nested classes and inner classes	Understand and apply the concept of nested and inner classes	BB/ LCD	1		9	22-06-2019	22-06-2019		
10	Inheritance – usage of super key word, method overriding	Understand and apply the inheritance, super keyword, and overriding	BB/LCD	1		10	27-06-2019	27-06-2019		
11	Final methods & classes - abstract classes - dynamic method dispatch	Understand and use final methods and classes & abstract classes – understand the runtime polymorphism	BB/LCD	2		12	28-06-2019	28-06-2019 & 29-06-2010		
12	Defining and implementing Interfaces – differences between interfaces and classes, extending interfaces	Understand, define and implement interfaces – differentiate interfaces from classes – understand and extends the interfaces	BB/LCD	1		13	05-07-2019	05-07-2019		
UNIT – II (13 Hours)										
13	Packages – creating and using packages – CLASSPATH setting	Understand and create packages – setting the CLASSPATH	BB/LCD	2		15	06-07-2019	06-07-2019		
14	Access control in packages	Understand and use the access control mechanism	BB/LCD	1		16	08-07-2019	08-07-2019		
15	String, StringBuffer and command-line arguments	Apply String and StringBuffer classes – use of command-line arguments	BB/LCD	2		18	11-07-2019	11-07-2019		
16	Exception handling – introduction - handling exceptions	Understand and apply exception handling mechanism	BB/LCD	2		20	12-07-2019	12-07-2019		

17	Built-in Exceptions - Creating user defined exceptions	Develop exception classes	BB/LCD	1		21	18-07-2019	18-07-2019		
18	Multithreading – introduction – differences between thread and process – thread lifecycle – creating threads	Understand and create simple treads – distinguish the thread and process	BB/LCD	2		23	19-07-2019	19-07-2019		
19	Synchronization in threads – inter-thread communication - deadlock	Understand and apply synchronization in threads – communicate threads – understand and avoid deadlocks in threads	BB/LCD	3		26	20-07-2019	20-07-2019		
UNIT – III (12 Hours)										
20	I/O Streams – interdiction – byte streams and character streams	Understand streams – differentiate byte streams and character streams	BB/LCD	2		28	25-07-2018	25-07-2018		
21	File & File stream classes	Understand and use File classes	BB/LCD	2		30	26-07-2019	26-07-2019 & 27-07-2019		
22	Generic types – Generic methods & classes	Design generic methods and classes	BB/LCD	2		32	02-08-2019	02-08-2019 & 03-08-2019		
23	Collections – List, Queue, and Set	Understand the apply List, Queue and Set collections	BB/ LCD	2		34	03-08-2019	03-08-2019 & 08-08-2019		
24	Applets – Introduction – applet lifecycle – creating and running simple applet	Understand Applet lifecycle - design and run simple applets	BB/ LCD	2		36	09-08-2019	09-08-2019 & 27-08-2019		
25	Passing parameters to applets – accessing remote objects – use of Color and Graphics Classes	Passing and accessing parameters to applets – usage the Graphics and Color Classes	BB/LCD	2		38	31-08-2019	31-08-2019 & 05-09-2019		
UNIT – IV (13 Hours)										
26	Introduction to GUI programming – AWT package hierarchy – Components and Containers	Understand design simple GUI applications – know the package hierarchy	BB/LCD	2		40	06-09-2019	06-09-2019 & 13-09-2019		
27	Event Handling mechanism – delegation event model – handling events	Understand and add events to components and containers using delegation evening model	BB/LCD	2		42	14-09-2019	14-09-2019 & 19-09-2019		
28	Applications with Frames, Canvas,	Develop GUI applications with AWT controls	BB/LCD	2		44	21-09-2019	21-09-2019 &		

	panel, and other AWT controls									
29	Use of adapters – Layout Managers – Menubars	Use adapter classes – design applications with the help of layout managers – use menubars in applications	BB/LCD	2		46	26-09-2019			
30	GUI with Swing – differences between AWT & Swing – Japplet, JFrame and other JComponents	Design GUI applications with Swing controls	BB/ LCD	3		49	27-09-2019			
31	Tabbed Panes, Scroll Panes, Trees and Tables	Use Tabbed Panes, Scroll Panes, Trees and Tables in GUI applications	BB/ LCD	2		51	04-10-2019			

Signature(s) of the Faculty:

Signature of the HOD:

Date:

IT251 (R18) Digital Electronics Lab

Academic Year : 2019 - 2020

Year & Semester : B. Tech. / II Year I SEM (IT – A &B SECTIONS)

Branch : Information Technology

Subject Code & Name : IT251 (R18) Digital Electronics Lab

Name of Faculty : Smt T.Suneetha/ Ms. M.Himaja

Week No.	Topic of syllabus to be covered	Learning Out Comes	Hours Required	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/Remarks (By HOD)
1	Course Objectives, Outcomes & Review the Syllabus	Understand the importance of the course	3	3	06-06-2019	06-06-2019		
2	Logic gates using Universal Building Blocks (NAND)	Able to understand and verify Truth tables of all Logic gates using NAND gates	3	6	13-06-2019	13-06-2019		
3	Design of Combinational Circuits	Able to design various combinational circuits and verify its Truth tables.	3	9	20-06-2019	20-06-2019		
4	Magnitude Comparator	Able to design a Four Bit Magnitude Comparator and verify its Truth Table	3	12	27-06-2019	27-06-2019		
5	Verification of Flip Flops (SR and JK)	Able to design and verify Truth Tables of SR and JK Flip Flops	3	15	04-07-2019	04-07-2019		
6	Conversion of Flip Flops (JK to D and JK to T)	Able to understand and Convert JK to T and JK to D Flip Flops	3	18	11-07-2019	11-07-2019		
7	Multiplexer	Able to understand and verify the operation of 4:1 Multiplexer	3	21	18-07-2019	18-07-2019		
8	DeMultiplexer	Able to understand and verify the operation of 1:4 DeMultiplexer	3	24	25-07-2019	25-07-2019		

9	Code Convertors	Able to Design a Four bit Binary to Gray and Gray to Binary Code Convertors	3	27	01-08-2019	01-08-2019		
10	Shift Registers (SISO , SIPO , PIPO)	Able to understand and verify the operation of SISO, SIPO, PIPO Shift Registers	3	30	05-09-2019	05-09-2019		
11	Ring Counter	Able to design and verify the Truth Table of Ring counter	3	33	12-09-2019	12-09-2019		
12	Johnson Counter	Able to design and verify the Truth Table of Johnson counter.	3	36	19-09-2019	19-09-2019		
13	Asynchronous Counters (Up and Down counters)	Able to understand the operation of an Asynchronous Up and Down Counters and verify its Truth Table	3	39	26-09-2019	26-09-2019		

M. Himaja
Signature of the Faculty

Signature of the HOD:
Date:

LESSON PLAN

Academic Year : 2018-2019

Year & Semester : B.Tech / II Year I SEM (IT A Section & IT B SECTION)

Branch : Information Technology

Subject Code & Name : IT252 (R18) DATA STRUCTURES LAB

Name of Faculty : Dr.V. Sesha Srinivas/Dr. N. Nagamalleswara Rao

Week	Topic of syllabus to be covered	Learning Out comes	Hours Required LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review / Remarks (By HOD)
Week1	Lab Introduction	Introduction to programming	2	2	06-06-2019	06-06-2019	
Week2	Sample Programs		2	4	06-11-2019	06-11-2019	
Week3	Sample Programs		2	6	13/06/2019	13/06/2019	
Week4	List Creation	List Programming	2	8	18/06/2019	18/06/2019	
Week5	List Operations		2	10	20/06/2019	20/06/2019	
Week6	List Operations		2	12	25/06/2019	25/06/2019	
Week7	Menu Driven Program For List Operations		2	14	27/06/2019	27/06/2019	

Week8	CII	CLL Implementation	2	16	07-02-2019	07-02-2019	
Week9	CII		2	18	07-04-2019	07-04-2019	
Week10	DII	DLL Implementation	2	20	07-09-2019	07-09-2019	
Week11	DII		2	22	07-11-2019	07-11-2019	
Week12	DII		2	24	16/07/2019	16/07/2019	
Week13	DII		2	26	18/07/2019	18/07/2019	
Week14	DII		2	28	23/07/2019	23/07/2019	
Week15	Polynomial Creation	List Application	2	30	25/07/2019	25/07/2019	
Week16	Polynomial Addition		2	32	30/07/2019	30/07/2019	
Week17	Polynomial Multiplication		2	34	08-01-2019	08-01-2019	
Week18	Stack Implementation Using Arrays	Stack Implementation	2	36	08-01-2019	08-01-2019	
Week19	Stack Applications	Stack Application	2	38	08-06-2019	08-06-2019	
Week20	Stack Applications		2	40	13/08/2019	13/08/2019	
Week21	Stack Implementation Using Linked List	Stack Implementation	2	42	27/08/2019	27/08/2019	
Week22	Queue Implementation Using Arrays	Queue Implementation	2	44	03/09/2019	03/09/2019	
Week23	Queue Implementation Using List		2	46	05/09/2019	05/09/2019	

Week24	Binary Search Tree Implementation	BST Implementation	2	48	12/9/2019	12/9/2019	
Week25	Binary Search Tree Implementation		2	50	17/9/2019	17/9/2019	
Week26	AVL Tree Implementation	AVL Implementation	2	52	19/9/2019	19/9/2019	
Week27	AVL Tree Implementation		2	54	24/9/2019	24/9/2019	
Week28	Hashing	Separate Chaining	2	56	26/9/2019	26/9/2019	
Week29	Hashing	Linear Probing	2	58	01/10/2019	01/10/2019	
Week30	Sortings	Sorting Techniques	2	60	03/10/2019	03/10/2019	

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Signature of the HOD:

Date:

LESSON PLAN

Academic Year : 2019 - 2020

Year & Semester : B. Tech. / II Year I SEM (IT – A &B SECTIONS)

Branch : Information Technology

Subject Code & Name :IT253(R18) Object Oriented Programming LAB

Name of Faculty : Dr. G. Rama Mohan Babu/ Srmt. N. Neelima

Week No.	Topic of syllabus to be covered	Learning Out Comes	Hours Required	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/Remarks (By HOD)
1	Course Objectives, Outcomes & Review the Syllabus	Understand the importance of the course	2	2	12-06-2019	12-06-2019		
2	Simple Java Programs & Java Control Structures	Able to write and execute simple Java Programs	3	5	19-06-2019	19-06-2019		
3	Classes & Objects	Able to design simple classes and creating objects	3	8	26-06-2019	26-06-2019		
4	Static members and static block	Able to understand and use instance members and static members	3	11	03-07-2019	03-07-2019		
5	Method overloading	Able to write overloaded functions with various number and types of arguments	3	14	10-07-2019	10-07-2019		
6	Inheritance	Able to understand and implement the inherited classes	3	17	17-07-2019	17-07-2019		
7	Method overriding	Able to understand and use runtime polymorphism	3	30	24-07-2019	24-07-2019		

8	Final variables, methods, and classes	Able to understand and use final keyword for constants, methods, and classes	3	33	31-07-2019	31-07-2019		
9	Threads and synchronization	Able to write multi thread applications and usage of synchronization	3	36	07-08-2019	07-08-2019		
10	Interfaces and packages	Able to design interfaces and implements interfaces Able to grouping classes and interfaces and use those	3	39	14-08-2019	14-08-2019		
11	Exception handling and creating user defined exceptions	Able to handle runtime errors and design exception classes	3	42	28-08-2019	28-08-2019		
12	Applets and Graphics classes	Able to design applets for internet applications Able to use graphics class in GUI applications	3	45	04-09-2019	04-09-2019		
13	AWT controls	Able to develop simple GUI applications with AWT	3	48	11-09-2019	11-09-2019		
14	Event Handling	Able to use event handling GUI applications	3	51	18-09-2019	18-09-2019		
15	Swing Controls	Able to develop advanced GUI applications and differentiate AWT and Swing controls	3	54	25-09-2019	25-09-2019		
16	Swing Controls JTree, JTable, JTabbedPane, and JTree	Able to use more advanced controls in GUI applications	3	57	05-10-2019	05-10-2019		

Signature of the Faculty

Signature of the HOD:

Date:

ITV01-English Competency Development programme

Academic Year: 2018-2019

Year & Semester: B. Tech / II Year II SEM (ITA Section & ITB SECTION)

Branch: Information Technology

Subject Code & Name: ITV01-English Competency Development programme

Name of the Faculty: Dr. Sujatha Kodali

Week	Topic of syllabus to be covered	Learning out comes	Hours Required / LAB	Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Review/ Remarks (By HOD)
Week1	Introduction to the course (COs & CEOs);Ice breaker	Team interaction Global skill set requirements-Awareness	2	2	26-12-2018	26-12-2018	
Week2	Narrating stories using skeleton prompts Vocabulary register	Contextualizing vocabulary Attempt to speak in small teams	2	4	02-01-2019	02-01-2019	
Week3	Transition words and phrases; Rubric for peer assessment	Coherence in writing and speaking Clarity on what makes an effective speech/write-up	2	6	09-01-2019	09-01-2019	
Week4	Conversation starters; Auxiliaries and use	Questioning others Forming (grammatically accurate) random questions	2	8	23-01-2019	23-01-2019	
Week5	Spontaneity in questioning-group work Guidelines to make a mini presentation	Thought process in second language Procedure outline-mini presentations	2	10	30-01-2019	30-01-2019	

Week6	Pair work & micro presentations with peer assessment	Outlining points and building content Familiarizing with presentation parameters and practice	2+1	13	06-02-2019	06-02-2019	
Week7	Guidelines to picture description; Target vocabulary	Developing lexical resource and drafting the description Higher order thinking in perceiving the picture	2+1	16	13-02-2019	13-02-2019	
Week8	Focus on grammatical accuracy & range; Micro presentations and group assessments	Attempt to use advanced sentence structures Getting sensitized on body language and tone in presentation	2	17	20-02-2019	20-02-2019	
Week9	Introducing self-procedure guidelines; Describing words and use & vision plan	Practice crafting self-introduction Introspecting and reflecting	2	19	03-03-2019	03-03-2019	
Week10	Pair work-introducing one another with Peer assessment and group activity	Drafting a comprehensive self-introduction Presenting a clear and confident self-introduction	2+1	22	20-03-2019	20-03-2019	
Week11	Remedial session on common errors in drafting and speaking; Memorizing target vocabulary; Practice exercises	Accuracy in drafting and speaking Improving on the choice of words	2+1	25	27-03-2019	27-03-2019	
Week12	Team work & Poster presentation; Mounting posters and team reflections; Teacher	Comprehending the inputs (text and video supplements); Reflecting on learning Precision and clarity in presentation Developing team skills, empathy and	2	27	03-04-2019	03-04-2019	

	overall feedback	acceptance					
Week13	Summative assessment-written test and speaking test	Appealing presentations with a focus on content and nonverbal cues	2	28	10-04-2019	10-04-2019	
Week14	Closing session on holistic approach and staying motivated-video inputs	Staying motivated Developing positive attitude	1	30	17-04-2019	17-04-2019	

Signature of the Faculty

Signature of the HOD:
Date:

IT V002 Introduction to Computing

Academic Year	:	**2017-2018**
Year & Semester	:	**B.Tech / I Year I SEM (IT A section and B section)**
Branch	:	**Information Technology**
Subject Code & Name	:	**ITV002 (R18) INTRODUCTION TO COMPUTING**
Name of Faculty	:	**Dr. V. Sesha Srinivas / Dr. G. Rama Mohan Babu**

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board (BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Actual date of Topic covered	Justification in case of Leading/Lagging	Review/ Remarks (By HOD)
				L	T					
1	Discussed course objectives, outcomes and syllabus	Familiarized with objectives and outcomes of the course	BB	1		1	18/08/2018	18/08/2018		
2	Algorithm Characteristics And Need Of Algorithm	understood the need of algorithm in program development	BB	1	1	1	25/08/2018	25/08/2018		
3	Introduction To C Language	importance of high level language	BB	1	1	2	27/08/2018	27/08/2018		

4	C Programming Using Printf Statements	output statement in c language	BB	2	1	3	28/08/2018	28/08/2018		
5	Arithmetic Operations	able to write program on arithmetic operations	BB	1	1	4	29/08/2018	29/08/2018		
6	Programs On Arithmetic Operations			1	1	5	1-9-18	1-9-18		
7	Programs On Arithmetic Operations			1	1	6	1-9-18	1-9-18		
8	Sample Programs			1	2	8	5-9-18	5-9-18		
9	Programs On Conditional Statements(if)	able to use conditional statements	BB	2	1	9	15/09/2018	15/09/2018		
10	Programs On If-else Statements	able to use conditional statements	BB	1	1	10	15/09/2018	15/09/2018		
11	Sample Programs	able to use conditional statements	BB	1	2	12	26/09/2018	26/09/2018		
12	Programs On If-else Statements	able to use conditional statements	BB	1	1	13	29/09/2018	29/09/2018		
13	Programs On Switch Case	able to write programs using switch in place of if-else	BB	1	2	15	29/09/2018	29/09/2018		
14	Simple Programs On Arithmetic Operators	able to write program on arithmetic operations	BB	3	2	17	3-10-18	3-10-18		

15	Programs On Switch Case Statement	able to write programs using switch in place of if-else	BB	3	1	18	6-10-18	6-10-18		
16	Programs On If Else	able write programs on if-else conditional statements	BB	2	1	19	6-10-18	6-10-18		
17	Sample Programs		BB	3	2	21	24/10/2018	24/10/2018		
18	Programs On Switch Case	able to write programs using switch in place of if-else	BB	4	1	22	27/10/2018	27/10/2018		
19	Programs On Loops	able to write programs using loop statements	BB	3	1	23	27/10/2018	27/10/2018		
20	Sample Programs	able to write programs using loop statements	BB	3	2	25	29/10/2018	29/10/2018		
21	Programs On Loops	able to write programs using loop statements	BB	2	2	27	14/11/2018	14/11/2018		
22	Sample Programs On Inner Loops	familarized with innerloops	BB	2	1	28	17/11/2018	17/11/2018		
23	Sample Programs Using Continue Statements	usage of continue and break statements	BB		1	29	18/08/2018	18/08/2018		

Signature of the Faculty

Signature of the HOD:

Date:

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I SEMESTER

LESSON PLAN

Academic Year: 2018-2019 (Y18MS)
Year & Semester: I Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS111 Perspectives of Management
Name of Faculty: Dr.B.K.Surya Prakasha Rao

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Introduction To Management Programme	To familiarize with basic concepts of Management	BB	1		1		
I	Introduction To Management	To understand introduction of Management	BB	1		2		
I	Definitions	To understand definitions of Management	BB	1		3		
I	Scope Of Management, Management As Science	To understand scope of Management	BB	1		4		
I	Management As Art And Profession	To evaluate concepts of Management	BB	1		5		
I	Functions Of Management	To evaluate functions of Management	BB	1		6		
I	Managerial Levels Vs Skills And Its Matrix	To evaluate Managerial Levels Vs Skills	BB	1		7		
I	Concept Of Social Responsibility And Definitions	To analyze Concept Of Social Responsibility	BB	1		8		
I	For And Against Arguments To Social Responsibility	To analyze For And Against Arguments To Social Responsibility	BB	1		9		
I	Areas Of Social Responsibility Of Business - Initiatives In Indian Corporates	To understand Areas Of Social Responsibility	BB	1		10		

I	Evolution Of Management Thought, Various Contributions	To understand Evolution Of Management	BB	1		11		
I	F.W. Taylor's Principles Introduction And First 4 Principles	To understand F.W. Taylor's Principles	BB	1		12		
I	F.W. Taylor 4 Principles. Introduction To Henry Fayol's 14 Principles	To understand F.W. Taylor's Principles	BB	1		13		
I	Likert's, Mooney's, Weber's And Human Relations Principles	To analyze Likert's, Mooney's, Weber's And Human Relations Principles	BB	1		14		
II	Introduction To Planning	To understand planning	BB	1		15		
II	Definitions And Purpose Of Planning	To evaluate Purpose Of Planning	BB	1		16		
II	Features Of Planning	To identify the Features Of Planning	BB	1		17		
II	Purpose Of Planning	To understand the Purpose Of Planning	BB	2		19		
II	Limitations Of Planning ,introduction Planning	To understand the limitations Of Planning	BB	1		20		
II	Cont. Classification Of Planning Premises	To analyze Planning Premises	BB	1		21		
II	Introduction To Forecasting, Essentials of Forecasting	To evaluate Essentials of Forecasting	BB	1		22		
II	Relationship Between Forecasting And Planning	To identify Relationship Between Forecasting And Planning	BB	2		24		
II	Advantages And Limitations Of Forecasting	To understand the Advantages And Limitations Of Forecasting	BB	1		25		
II	Techniques Of Forecasting	To evaluate the Techniques of Forecasting	BB	1		26		

II	Sales Forecasting And Steps In Forecasting, Environmental Forecasting.	To identify Sales Forecasting And Steps	BB	1		27		
II	Introduction To Decision Making. Characteristics Of Decision Making.	To identify Decision Making and Characteristics Of Decision Making.	BB	1		28		
II	Introduction To MBA, Definition , Features Of MBA	To evaluate Features Of MBA	BB	2		30		
II	Steps In MBA Process, Benefits, Preconditions. Introduction To Organisation	To understand the Steps In MBA Process	BB	1		31		
III	Definition Of Organisation, Features, Steps In Organisation Process	To identify the Steps In Organisation Process		1		32		
III	Formal And Informal Organisation, Features Of Informal Organisation.	To understand the Formal And Informal Organisation		2		34		
III	Overlays Of Informal Organisation	To understand Overlays Of Informal Organisation		1		35		
III	Benefits Of Informal Organisation To Members And Organisation	To analyze the benefits Of Informal Organisation To Members And Organisation		1		36		
III	Introduction Of Span Of Management	To evaluate Span Of Management		2		38		
III	Introduction To Span Of Management And Definitions	To identify the introduction To Span Of Management And Definitions		1		39		
III	VA Graicunas Perception On Span Of Management	To evaluate VA Graicunas Perception On Span Of Management		1		40		

III	Line Organisation And Staff Organisation.	To understand Line Organisation And Staff Organisation.		1		41		
III	Line Organisation And Staff Organisation	To understand Line Organisation And Staff Organisation.		1		42		
III	Line And Staff Relationship, Conflicts Between Line And Staff. How To Resolve Conflict Between Them.	To analyze the relations between Line And Staff		2		44		
III	Delegation Of Authority, principles Of Delegation, distinction Between Delegation And Decentralization.	To evaluate ,principles Of Delegation		1		45		
III	Decentralization ,trade-off Between Centralization And Decentralization ,introduction To Staffing	To identify ,trade-off Between Centralization and Decentralization		1		46		
IV	Staffing, features, Elements In Staffing Process	To understand the Elements In Staffing Process		1		47		
IV	Selecting The Executives, Training For Executives, Six A's For Executive Selection	To understand the Six A's For Executive Selection		1		48		
IV	Introduction To Direction, Definition, Dale's View features of Direction	To analyze Dale's View Features Of Direction		2		50		
IV	Features Of Direction; Introduction To Motivation, Definition; Characteristics Of Motivation, Incentives, Maslow's Need Hierarchy And Hertzberg Two Factor Theory	To identify Features Of Direction		1		51		

IV	Characteristics Of Motivation; Incentives; Maslow's Need Hierarchy And Hertzberg Two Factor Theory	To understand the Characteristics Of Motivation		2		53		
IV	Vroom's Expectancy Theory; Aldermen's Erg Theory Of Motivation;	To understand Vroom's Expectancy Theory		1		54		
IV	McClelland Theory ; Porter's And Lawler's Theory Of Motivation	To understand McClelland Theory ; Porter's And Lawler's Theory Of Motivation		2		56		
V	Introduction To Controlling; Definition; Features; Importance; Steps In Controlling Process ; Essentials Of Effective Control System	To understand the concepts of Controlling		2		58		
V	Introduction To Leadership; Definition; Characteristics ; Functions Of Leadership	To understand the concepts of Leadership		1		59		
V	Leadership Styles; Directive; Participative And Laissez Faire Leadership Styles, Advantage And Disadvantages Of Leadership Styles	To analyze Leadership Styles		1		60		

Signature of the Faculty

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Date:

LESSON PLAN

Academic Year: 2018-2019 (Y18MS)
Year & Semester: I Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS 115 Accounting For Managers
Name of Faculty: D.Chakradhar

Unit . No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Financial Accounting	Accounting Definition ,objectives	BB	1		1		
	Cost Accounting	Scope of Accounting	BB	1		2		
	Management Accounting	Nature of Accounting	BB	1		3		
	Accounting Concepts and Conventions	Concepts	BB	3		6		
	Generally Accepted Accounting Principles	GAAP and Accounting Standards	BB	1		7		
	International Financial Reporting Standards in India	Accounting Standards	BB	1		8		
	Users of Accounting Information	Accounting Information	BB	1		9		
	Classification of Accounts – Journal – ledger and Trial Balance preparation – Errors and their rectification	Journal, ledger and Trial Balance	BB	4		13		
II	Capital and Revenue items	Capital and Revenue items	BB	1		14		
	Construction and Analysis of Trading, profit and loss account and Balance Sheet	Trading, profit and loss and Balance Sheet	BB	8		22		
	– Inventory Valuation and Depreciation	Depreciation	BB	2		24		
	Accounting for Intangible Assets.	Accounting for Intangible Assets	BB	1		25		
III	Financial Statement Analysis	Financial Statement Analysis	BB	1		26		
	Comparative, common size, trend, percentage (Theory)	Various methods for Statement Analysis	BB	2		28		
	Ratio Analysis	Analysis by Ratio Analysis	BB	5		33		
	Funds Flow – Cash Flow Statements	Analysis by Funds Flow – Cash Flow Statements	BB	5		38		

IV	Management Accounting	Management Accounting	BB	1		39		
	Costing – Elements of Costing and Cost Sheet (Theory)	TC,VC,FC and its importance in costing	BB	1		40		
	Marginal Costing – CVP analysis – Break Even Point (Theory and Problems)	Break Even Point, MOS, pricing	BB	6		46		
	Standard Costing and Variance Analysis	Price , Usage , Quantity with Direct, Fixed and Variable	BB	4		50		
V	Budget and Budgetary Control	principles and methods	BB	1		51		
	Budget and Budgetary Control	types of budgets and preparation of Fixed, Flexible, Cash, Master and Zero Based Budgets	BB	3		54		
	Inflation accounting	Inflation accounting	BB	1		55		
	Human Resource Accounting – Responsibility Accounting – Reporting to Management (Theory)	HR Accounting	BB	1		56		

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Date:

LESSON PLAN

Academic Year: 2018-2019 (Y18MS)
Year & Semester: I Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS116 Organizational Behaviour
Name of Faculty: Mr.P.Siddardha

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
	Introduction With Students	To familiarize with students	BB	1		1		
	Syllabus Overview and Course Outcomes	To understand overview of syllabus	BB	1		2		
I	**UNIT – I** O B Introduction, Nature	To understand basic concepts of Organizational Behaviour	BB	2		4		
I	O B Scope, Approaches	To understand scope of Organizational Behaviour	BB	2		6		
I	O B Elements	To evaluate Organizational Behaviour elements	BB	2		8		
I	O B Challenges	To analyze Organizational Behaviour challenges	BB	2		10		
I	O B Contributing Disciplines	To evaluate Organizational Behaviour disciplines	BB	2		12		
I	O B Models	To analyze Organizational Behaviour Models	BB	3		15		
I	O B Importance	To analyze Organizational Behaviour importance	BB	2		17		
II	**UNIT – II** Perception	To understand the basic Perception concepts	BB	2		19		
II	Factors Influencing Perception	To understand the basic Perception concepts	BB	1		20		
II	Barriers To Perception, Enhancing Perceptual Skills	To understand the basic Perception concepts	BB	1		21		
II	Enhancing Perception Skills	To understand the basic Perception concepts	BB	2		23		

II	Learning And Its Theories	To analyze theories of learning	BB	3		26		
II	Personality And Its Determinants	To evaluate traits of Personality	BB	1		27		
II	Personality Theories	To evaluate traits of Personality	BB	2		29		
III	**UNIT – III** Group And Types Of Groups	To identify the types of groups	BB	2		31		
III	Determinants Of Group Behaviour	To understand the concepts of group	BB	2		33		
III	Stages Of Group Formation	To understand the concepts of group	BB	2		35		
III	Developing Inter - Personal Relations	To analyze the relations between people	BB	2		37		
III	Transactional Analysis	To evaluate transactional analysis theories	BB	3		40		
III	Organizational Design	To identify the stages in Organizational Design	BB	2		42		
IV	**UNIT – IV** Organizational Culture	To understand the concepts of Organizational Culture	BB	3		45		
IV	Organizational Climate	To evaluate the nature of Organizational Climate in an organization	BB	3		48		
IV	Creating An Ethical Organizational Culture	To identify the process for Creating an Ethical Organizational Culture	BB	2		50		
IV	Organizational Conflict	To identify the measures to remove Organizational Conflict	BB	4		54		
V	**UNIT – V** Organizational Change	To evaluate the concepts of Organizational Change	BB	4		58		
V	Organizational Development	To understand the nature of Organizational Development	BB	2		60		

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Lesson Plan

Academic Year: 2018-2019 (4/18 MS)
Year & Semester: I Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS117Managerial Communication
Name of Faculty: Dr.Sk.Mabunni

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)
				L	T	
I	Introduction To Communication	Understanding the basics of communication	BB	1		1
I	Definitions Of Communication	Understanding the definitions of communication	BB	1		2
I	Role Of Communication In Business	Identifying the role of communication in business	BB	2		4
I	Features Of Communication	Evaluating the features of communication	BB	1		5
I	The Process Of Human Communication	Understanding the process of communication	BB	1		6
I	Objectives Of Communication	Describing the objectives of communication	BB	1		7
I	Barriers In Communication	Evaluating the barriers of communication	BB	2		9
I	Types Of Communication	Knowledge on types of communication	BB	1		10
I	Oral Communication	Basics on oral communication	BB	1		11
I	Written Communication	Understanding written communication	BB	1		12
I	Visual Communication, Audio Visual Communication, Silence	Illustrating audio visual communication with examples	LCD	1		13
I	Listening, Cultural Effects On Communication	Understanding listening activity	BB	1		14
II	Organizational Communication, Formal Communication	Observing formal communication	BB	1		15
II	Informal Communication, Grapevine Communication, Features, Types	Informal and grapevine communication	BB	1		16
II	Intra Personal And Interpersonal Communication	Intra and inter personal communication effects	BB	1		17
II	Transactional Analysis, Johari Window, Exchange Theory	Understanding Johari window	BB	1		18
III	Managing Motivation For Interpersonal Communication	Knowing motivation for inter personal communication	BB	1		19
III	Interpersonal Perception	Understanding perception	BB	1		20
III	Interpersonal Values, Attitude	Information on values and attitude	BB	1		21
III	Role Of Emotion In Interpersonal Communication	Evaluating the role of emotion in interpersonal	BB	1		22
III	Communication Styles	Discussing styles of communication	BB	1		23
III	Gateways To Effective Interpersonal Communication	Identifying different gate ways to communication	BB	1		24

III	Gateways To Effective Interpersonal Communication	Identifying different gate ways to communication	BB	2		26
IV	Business Writing Skills, Significance Of Business Correspondence	Understanding Business Writing Skills	BB	1		27
IV	Essentials Of Business Correspondence, Business Letters And Forms	Describing Essentials Of Business Correspondence	BB	1		28
IV	Forms Of Business Letter	Concept of business letter	BB	1		29
IV	Business Letters Profile	Profile of business letters	BB	1		30
IV	Oral Presentations Making And Delivery	Delivery of oral presentations		1		31
IV	Meetings Purpose And Types	Concept of meetings	BB	1		32
IV	Advantages And Disadvantages Of Meetings	Understanding merits and demerits of meetings	BB	1		33
IV	Use Of Technology In Business Communication	Usage of technology in communication of businesses	BB	1		34
IV	Email Messages	Understanding of E Mails	BB	1		35
V	Exercise On Communication	Exercises on listening and oral communication	LCD	2		37
V	Communication Exercise	Exercises on business letters	LCD	1		38
V	Effective Presentation And Interview Skills	Obtaining interview skills	BB	1		39
V	Art Of Giving Interviews In Relation To Placements	Understanding of interview procedures	BB	1		40
V	Appraisal Interviews In Selection And Placements	Evaluating appraisal interviews	BB	1		41
V	Appraisal Interviews	Elaborating promotion interviews	BB	1		42
V	Telephonic Interview	Understanding the process of telephone interview	BB	1		43
V	Exit Interviews	Knowledge on exit interviews	BB	1		44
V	Exercise On Interview Skills	Interview skills	BB	1		45
V	Promotion Interview	Process of promotion interview	BB	2		47
V	Case Study On Interviews	Job interviews in pharmaceutical industry	LCD	1		48
V	Case Study On Presentations	Presentation skills	LCD	1		49
V	Web Conferencing	Concept of web conferencing	LCD	1		50
V	Video Conferencing	Understanding video conferencing	LCD	1		51
V	Tele Conferencing	Knowing about tele conferencing	BB	1		52
V	Case Study On Web Conferencing	Web conferencing implementation	LCD	1		53
V	Visual Communication	Understanding objectives of visual communication	LCD	2		55
V	Visual Communication	Understanding process of visual communication	BB	1		56
V	Key Skills For Interviews	Understanding key skills for interviewers	LCD	1		57
V	Audio Communication	Evaluating audio communication	BB	2		59
V	Communication Excercises	Skills required for attending interviews	LCD	1		60

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II SEMESTER

LESSON PLAN

Academic Year : 2018-2019 (Y18MS)
Year & Semester : I Year, II Semester
Branch : M.B.A
Subject Code & Name : MS122 & Research Methodology and Business Analytics
Name of Faculty : Dr.K.SURYANARAYANA

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Meaning and Importance of Research	Understanding meaning and Importance of Research	BB	1		1		
I	Nature and Scope of Research Methodology	To know the Nature and Scope of Research Methodology	BB	2		3		
I	Research Process	Understanding Research Process	BB	2		5		
I	Research Objectives	Understanding Research Objectives	LCD	1		6		
I	Types of Research	To Know the types of Research	BB	2		8		
I	Defining Research Problem	Identifying Research Problem	BB	2		10		
I	Formulation of Hypothesis – Testing of Hypothesis	Formulation of Hypothesis – Testing of Hypothesis	BB/ LCD	3		13		
II	Research Design – Exploratory Research – Descriptive Research – Casual Research	Research Design – Exploratory Research – Descriptive Research – Casual Research	BB/LCD	3		17		

II	Sampling and Sampling De	To understand the Sampling and Sampling Design	LCD	2		19		
II	Sampling Methods – Simple Random Sampling – Stratified Sampling	TO understand the methods of sampling	LCD	2		21		
II	Systematic Sampling – Cluster Sampling – Multistage Sampling, Non – Probability Sampling – Convenience Sampling	Systematic Sampling – Cluster Sampling – Multistage Sampling, Non – Probability Sampling – Convenience Sampling	BB	3		25		
II	Judgement Sampling – Quota Sampling	Judgement Sampling – Quota Sampling	BB	1		26		
III	Data Collection – Primary and Secondary Data —,–and clustering methods	Data Collection – Primary and Secondary Data —,–and clustering methods	BB	1		27		
III	Designing of Questionnaire	Questionnaire design.	BB	2		29		
III	Measurement and Scaling – Nominal Scale – Ordinal Scale – Interval Scale – Ratio Scale	Measurement and Scaling – Nominal Scale – Ordinal Scale – Interval Scale – Ratio Scale	BB	2		31		
III	Guttmann Scale – Likert Scale – Schematic Differential Scale	Guttmann Scale – Likert Scale – Schematic Differential Scale	BB	1		32		
III	Contemporary developments- Advanced techniques of data analysis: ANOVA – Discriminate analysis	Contemporary developments- Advanced techniques of data analysis: ANOVA – Discriminate analysis	BB/ LCD	2		34		
III	factor analysis – conjoint analysis – multi dimensional scaling	factor analysis – conjoint analysis – multi – dimensional scaling	BB	3		37		
IV	Meaning and Importance of business analytics	To know the meaning and Importance of business analytics	BB/ LCD	1		39		
IV	Evolution – role in functional areas	To understand the Evolution and role of Business Analytics in	BB/ LCD	1		40		

		functional areas						
IV	Data for Business Analytics	Role of Data in Business Analytics	BB	1		41		
IV	Data reliability and validity	To assess the Data reliability and validity	BB	2		43		
IV	Analysis of Data – Introduction to SPSS	Analysis of Data – Introduction to SPSS	BB	3		46		
IV	Uses of SPSS.	Understanding SPSS	BB	2		48		
V	Business Analytics as Solution for Business Challenges –	Business Analytics as Solution for Business Challenges –	BB	3		52		
V	Master Data Management	Master Data Management	BB/ LCD	2		54		
V	Data Warehousing	Data Warehousing – Data Mining	BB/ LCD	1		55		
V	Data Mining	Concepts of Data Mining	BB	1		56		
V	Meta Data – Data Marts –	Meta Data – Data Marts –Data Integration	BB/ LCD	2		58		
V	Data Integration	To understand Data Integration	BB/ LCD	1		59		
V	Concept of OLTP and OLAP.	To understand the differences between OLTP and OLAP and the concepts	BB/ LCD	1		60		

Signature of the Faculty

Signature of the HOD:
Date:

LESSON PLAN

Academic Year: 2018-2019 (Y18MS)

Year & Semester: I Year II Sem

Branch: MBA

Subject Code & Name: MS 123 Human Resource Management

Name of Faculty: Dr.M.Manjusha

Unit No.	Topic of syllabus to be covered	Learning Out comes	Teach in Mode BB/ OHP/ LCD	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Review/ Remarks (By HOD)
				L	T			
I	Introduction Human Resource Management	Understand the basic concepts in Human Resource Management	BB	1		1		
	Nature & significance of HRM	Understand the Nature and Significance of HRM	BB	1		2		
	Personnel Management Vs HRM	Analyze the differences between Personnel management and HRM	BB	1		3		
	Functions of HRM	Understand the functions of Management	LCD	1		4		
	Qualities HR Manager	Evaluate the Qualities of HR Manager	BB	1		5		
	Role of HR Manager	Evaluate the role of HR Manager	BB	1		5		
	HRM in a changing Environment	Understanding concept of the HRM role in a changing Environment	BB	1		7		
	Job Analysis	Analyzing the concept of Job analysis	BB	1		8		
	Objectives of Job analysis	Understanding the Objectives of Job Analysis	BB	1		9		
	Methods of Job Analysis	Identify the methods on Job analysis	BB	1		10		
	Line and Staff responsibility	Creating the Line and Staff Responsibility	BB	1		11		
	Case Study	Remembering the relevant Knowledge in HRM basic Concepts	BB	1		12		

II	Human Resource Planning	Understanding the process HR Planning	BB	1		13		
	Human Resource Planning Objectives	Identify the Objectives of HR planning		1		14		
	Human Resource Planning process	Evaluate the process of HRP	LCD	1		15		
	Factors affecting HR Planning	Identify the factors affecting the HR Planning	BB	1		16		
	Requisites for successful HR Planning.	Analyzing the requisites for Successful HRP	BB	1		17		
	Recruitment Definition, Process of Recruitment	Understanding the definition, meaning and process of Recruitment		1		18		
	Purpose of Recruitment.	Identify the purpose of recruitment	BB	1		19		
	Factors influencing the Recruitment	Identify the Factors influencing the Recruitment	BB	1		20		
	Sources of Recruitment	Identify the Sources of recruitment	BB	1		21		
	Selection Process and its Significance	Understanding the selection process, importance and its significance	LCD	1		22		
	Placement and Induction	Understanding the concept of Placement and induction	BB	1		23		
	Training and Socialization	Evaluating the training and socialization process in HRM	BB	1		24		
	Case Study	Remembering the concepts related to HRP, Recruitment and Selection	BB	1		25		
III	Development and Performance Management	Understanding the development and Performance Management	BB	1		26		
	Objectives of Training and need for providing Training	Identify the objectives of training and need for providing training	BB	1		27		
	Methods of Training	Evaluating the methods of training	BB	1		28		

	Training Procedure	Identify the Training Procedure	BB	1		29		
	Evaluating Effectiveness of Training	Apply the knowledge in evaluating the effectiveness of Training	BB	1		30		
	Management Development Programme	Understanding the concept of Management Development Programme	BB	1		31		
	Performance Appraisal Significance	Analyze the significance of performance Appraisal		**1**		**32**		
	Objectives of Performance Appraisal	Identify the Objectives of Performance appraisal	BB	1		33		
	Methods of Performance Appraisal	Evaluate the Methods of performance appraisal	BB	1		34		
	developing and administering an Appraisal programme	Identify the developing and administering an appraisal Programme	BB	1		35		
	Limitations to its effectiveness.	Identify the limitations o its effectiveness	BB	1		36		
	Post Appraisal Feedback	Evaluate the post Appraisal Feedback	BB	1		37		
IV	Job Evaluation	Understanding the concept of Job Evaluation	BB	1		38		
	Significance of Job Evaluation	Identify the Importance of Job Evaluation	BB	1		39		
	Methods of Job Evaluation	Understanding the Methods of Job Evaluation	BB	1		40		
	Job evaluation and its Problems	Analyzing the problems in Job evaluation	BB	1		41		
	Career Planning and Development	Understanding the concepts in career Planning development	BB	1		42		
	Concept of Counseling	Understanding the concept of counseling		1		**43**		
	Need of Counseling	Evaluate the Need of Counseling	BB	1		44		

	Process of counseling	Identify the Process of Counseling	BB	1		45		
	Significance of Counseling	Understanding the significance of Counseling	BB	1		46		
	key elements In counseling	Identify the elements in Counseling	BB	1		47		
	Disciplinary procedure	Understand the concept of Disciplinary Procedure	BB	1		48		
	Grievance procedure.	Evaluate the Grievance procedure	BB	1		49		
V	Quality of Work Life (QWL)	Understanding the concept of Quality of Work Life	BB	1		50		
	Definition and Meaning of QWL	Creating an idea about QWL	BB	1		51		
	Conditions of QWL	Identify the Conditions of QWL	BB	1		52		
	specific issues in QWL	Analyze the Specific issues in QWL	BB	1		53		
	strategies for improvement of QWL	Identify the Strategies ti improve QWL	BB	1		54		
	Changing Role of HR	Understand the concept of changing role of HR in QWL	BB	1		55		
	HRM Accounting	Understand the HRM Accounting	BB	1		56		
	HR Information Systems	Understand HRIS	BB	1		57		
	HR Audit	Identify the concept of HR Audit	BB	1		58		
	HR in Knowledge Era	Create HR in Knowledge Era	BB	1		59		
	Case Study	Remembering the QWL Issues in specific organisation	BB	1		60		

Signature of the Faculty

Signature of the HOD:

Date:

LESSON PLAN

Academic Year: 2017-2018 (Y18MS)
Year & Semester: I Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS124 Financial Management
Name of Faculty: Dr.B.K.Surya Prakasha Rao

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Introduction, Over View Of Financial Management	To familiarize with basic concepts of Financial Management	BB	1		1		
I	Definition , Scope And Importance Of Financial Management	To understand Definition , Scope And Importance Of Financial Management	BB	1		2		
I	Objectives Of Financial Management, Wealth Maximisation And Profit Maximisation.	To understand Objectives Of Financial Management	BB	2		4		
I	Criticism On Profit Maximisation, Wealth Maximisation Concept	To understand Criticism On Profit Maximisation	BB	1		5		
I	Criticism On Wealth Maximisation, Distinguish Between Profit Maximisation And Wealth Maximisation	To evaluate Profit Maximization And Wealth Maximization	BB	1		6		
I	Modern Concept Of Financial Management	To understand Modern Concept Of Financial Management	BB	2		8		

I	Time Value Of Money, Concept, Rationality, Time Preference Rate, Compound Value Of Money	To understand Time Value Of Money	BB	2		10		
I	Present Value Of Money , Annuity And Lump-sum	To understand Present Value Of Money , Annuity And Lump-sum	BB	1		11		
I	Agency Conflict, Conflict Between Owners And Management	To analyze Conflict Between Owners And Management	BB	2		13		
II	Measures To Overcome The Conflict Between Owners And Management Team, Conflict Between Owners And Creditors, How To Overcome Conflict Between Them	To understand Measures To Overcome The Conflict Between Owners And Management Team	BB	1		14		
II	Overview Of Capital Budgeting Decisions	To understand Overview Of Capital Budgeting Decisions	BB	1		15		
II	Definition, Significance, importance And Areas Of Capital Budgeting Decisions	To understand Definition, Significance, importance And Areas Of Capital Budgeting Decisions	BB	2		17		
II	Steps In Capital Budgeting Process, Evaluation Techniques, Traditional Methods And DCF Techniques	To analyze Steps In Capital Budgeting Process	BB	1		18		
II	Traditional Methods, Pay Back Period And Accounting Rate Of Return. Advantages And Disadvantages Of Traditional Methods	To analyze Traditional Methods, Pay Back Period And Accounting Rate Of Return	BB	2		20		

II	DCF Techniques, Net Present Value And Profitability Index. Advantages And Disadvantages Of DCF Techniques	To understand DCF Techniques, Net Present Value And Profitability Index. Advantages And Disadvantages Of DCF Techniques	BB	1		21		
II	Introduction To Capital Rationing And Its Process	To understand Capital Rationing And Its Process	BB	1		22		
II	Problems And Solutions On Capital Rationing	To identify the Problems And Solutions On Capital Rationing	BB	2		24		
II	Solutions For University Question Papers	To understand the Solutions For University Question Papers	BB	1		25		
II	Risk Analysis In Capital Budgeting, Various Methods In Risk Adjustment	To understand the Risk Analysis In Capital Budgeting	BB	2		27		
II	Traditional Methods And Mathematical Techniques, Radar And CV	To analyze Traditional Methods And Mathematical Techniques, Radar And CV	BB	1		28		
II	Standard Deviation And CV Concept And Process	To evaluate Standard Deviation And CV Concept And Process	BB	1		29		
II	Probability Assignment And CV Problems And Solutions	To evaluate Probability Assignment And CV Problems And Solutions	BB	1		30		
II	EBIT And EBT Analysis	To understand EBIRT And EBT Analysis	BB	1		31		
III	Degree Of Financial Leverage, Operating Leverage And Combined Leverage	To evaluate the Degree Of Financial Leverage	BB	1		32		
III	Solutions For University Question Papers On Leverage	To identify Solutions For University Question Papers On Leverage	BB	1		33		
III	NOI Approach Assumptions And Problems	To understand NOI Approach Assumptions And Problems	BB	2		35		

III	Problems, Criticism. Introduction To Ni Approach	To evaluate Problems, Criticism. Introduction To Ni Approach	BB	1		36		
III	Ni Approach Assumptions, Problems And Criticisms	To understand Ni Approach Assumptions, Problems And Criticisms	BB	2		38		
III	Intermediate Approach - 3 Stages, Relevance And Relevance, Introduction To Mm Hypothesis	To identify the Intermediate Approach - 3 Stages		1		39		
III	Assumptions Of Mm Hypothesis, Arbitrage Process	To understand the assumptions Of Mm Hypothesis, Arbitrage Process		2		41		
III	Problems On Mm Hypothesis And Criticism	To understand problems On Mm Hypothesis And Criticism		1		42		
III	Introduction To Cost Of Capital, Concept, Significance Of Cost Of Capital, Cost Of Equity	To analyze Cost Of Capital, Concept, Significance of Cost Of Capital, Cost Of Equity		1		43		
III	Cost Of Debt, Cost Of Preference Shares, Cost Of Retained Earnings	To evaluate Cost Of Debt, Cost Of Preference Shares, Cost Of Retained Earnings		1		44		
III	Concept Of Weighted Average Cost Of Capital, Problems On WACC	To identify the concept Of Weighted Average Cost Of Capital, Problems On WACC		1		45		
III	Question Papers From University Exams	To evaluate Question Papers From University Exams		1		46		
IV	Concept, Meaning And Significance Of Dividend Decisions	To understand Concept, Meaning And Significance Of Dividend Decisions		1		47		

IV	Introduction To Dividend Theories, Assumptions Of Walters Dividend Model	To understand Dividend Theories, Assumptions of Walters		2		49		
IV	Criticism On Walters Model And Formulas For Calculation Of Market Price Of The Share, Factors Determining Dividend Policy	To analyze Formulas For Calculation Of Market Price Of The Share, Factors Determining Dividend Policy		1		50		
IV	Problems On Gardens Model And Criticism, Assumptions Of Mm Hypothesis And Irrelevance Approach	To evaluate problems On Gardens Model And Criticism, Assumptions Of Mm Hypothesis And Irrelevance Approach		2		52		
V	Concept Of Working Capital, Types Of Working Capital, Operating Cycle	To evaluate Concept Of Working Capital, Types Of Working Capital, Operating Cycle		1		53		
V	Approaches For Working Capital Financing, Components Of Working Capital, Determinants Of Working Capital Requirements	To understand Approaches For Working Capital Financing, Components Of Working Capital		2		55		
V	Approaches For Working Capital Financing, Components Of Working Capital	To understand Approaches For Working Capital Financing, Components Of Working Capital		2		57		
V	Receivables Management, Objectives, Goals Of Rm, Credit Policy Variables, Credit Standards, Evaluation Of Investments In Accounts Receivables, Optimum Credit Policy	To analyze Goals Of Rm, Credit Policy Variables, Credit Standards, Evaluation Of Investments In Accounts Receivables, Optimum Credit Policy		2		59		

V	Managing Cash And Marketable Securities, Facets Of Cash Management, Motives For Holding Cash, Factors Influencing Cash Balances, Investments In Marketable Securities	To understand Marketable Securities, Facets Of Cash Management, Motives For Holding Cash, Factors Influencing Cash Balances, Investments In Marketable Securities		1		60		

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LESSON PLAN

Academic Year: 2018-2019 (Y18MS)
Year & Semester: I Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS125 Marketing Management
Name of Faculty: Mr.P.Siddardha

Unit . No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
	Introduction Of Syllabus, Course Outcomes	To understand the overview of syllabus	BB	1		1		
I	**UNIT – I** Marketing Introduction	To understand basic concepts of Marketing	BB	2		3		
I	Marketing Importance And Functions	To evaluate the functions of Marketing	BB	2		5		
I	Marketing Management	To understand basic concepts of Marketing Management	BB	1		6		
I	Marketing Management Tasks, Marketing Environment	To evaluate basic concepts of Marketing Management and to evaluate its environment	BB	2		8		
I	Understanding Customers, Company Orientation Towards Market Place	To analyse customers problems and needs and company orientation towards it	BB	1		9		
I	Adopting Marketing Practices, Industrial Marketing	To be familiar with basic marketing practices	BB	1		10		
I	Services Marketing, Global Marketing	To evaluate types of marketing	BB	1		11		
I	E Marketing, Tele Marketing, Social Marketing	To evaluate types of marketing	BB	1		12		
I	Rural Marketing	To evaluate types of marketing	BB	2		14		
I	Cause Marketing, Emotional Marketing	To evaluate types of marketing	BB	1		15		

II	**UNIT – II** Marketing Information System, Consumer Behaviour	To understand the basic marketing information system	BB	2		17		
II	Marketing Information System, Consumer Behaviour	To understand the basic marketing information system	BB	1		18		
II	Organizational Buyer Behaviour	To evaluate organization buyer behaviour	BB	2		20		
II	Market Segmentation	To understand various segments of marketing	BB	2		22		
II	Target Marketing	To analyse the target markets segments	BB	1		23		
II	Marketing Research & Types	To understand research issues in marketing	BB	3		25		
II	Marketing Audit	To understand concepts of Marketing Audit	BB	2		27		
II	Case Study	To Analyse the situations in an organization	BB	1		28		
III	**UNIT – III** Marketing Mix, Product Mix	To evaluate 4P's of Marketing	BB	1		29		
III	Product Positioning	To understand how to position a product in market	BB	1		30		
III	Product Differentiation	To evaluate how to differ a product from competitors	BB	3		33		
III	Consumer Adoption Process	To understand process for Consumer Adoption	BB	2		35		
III	New Product Development	To identify the stages in New Product Development	BB	1		36		
III	Branding	To evaluate concepts of Brand	BB	2		38		
III	Packaging	To understand basic concepts of Packaging	BB	2		40		
IV	**UNIT – IV** Pricing	To understand the concepts of Pricing	BB	1		41		
IV	Setting Price	To analyse the process for setting Price	BB	1		42		
IV	Adopting Price	To analyse the process for adopting Price	BB	1		43		
IV	Pricing Methods	To evaluate the different types of Pricing	BB	2		45		
IV	Channels Of Distribution, Value Networks	To understand models of channels of Distribution	BB	1		46		

IV	Channel Dynamics, Distribution Strategies	To evaluate various distribution tegies	BB	2		48		
IV	Supply Chain Management	To understand basic concepts of Supply Chain Management	BB	1		49		
V	**UNIT – V** Marketing Communication Mix	To evaluate the concepts of Marketing Communication Mix	BB	1		50		
V	Advertising	To analyse the advantages and disadvantages of Advertising	BB	2		52		
V	Sales Promotion	To evaluate the methods of Sales Promotion	BB	1		53		
V	Emerging Trends In Marketing	To identify the emerging trends in Marketing	BB	2		55		
V	E - Commerce	To understand the basic concepts of E - Commerce	BB	2		57		
V	Internet Of Things	To evaluate the concepts of Internet Of Things	BB	1		58		
V	Case Study	To Analyse the situations in an organization	BB	1		59		
V	Case Study Analysis	To Analyse the situations in an organization	BB	1		60		

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LESSON PLAN

Academic Year: 2018-2019 (Y18MS)
Year & Semester: I Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS126 Production and Operations Management
Name of Faculty: Mr.D.Chakradhar

Unit . No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
	Introduction Of Syllabus, Course Outcomes	To understand the overview of syllabus	BB	1		1		
I	Overview of Production and Operations Management (POM) Function	Functions of POM	BB	2		3		
	Historical Development of POM	Development of POM	BB	1		4		
	POM scenario Today	Today's Production upgrades	BB	1		5		
	Production Systems	Production Systems	BB	1		6		
	Facilities location	Facilities location	BB	1		7		
	Layout Design	Layout Design	BB	2		9		
	Product and Process Design	Designing of Process and Product	BB	2		11		
	Materials Handling	Handling of Materials	BB	1		12		
	Value Analysis	Value Analysis	BB	2		14		
	Operations Strategy	Operations Strategy	BB	1		15		
II	Projects Planning and Control	PPC	BB	2		17		
	Capacity Planning	Capacity Planning	BB	1		18		
	Scheduling	Problems in scheduling	BB	2		20		
	Assignment and Sequencing of Operations	Problems in Assignment and Sequencing of Operations	BB	2		22		
	Method Study and Work Measurement	Method Study and Work Measurement	BB	2		24		
	Work Sampling.	Work Sampling.	BB	1		25		

III	Need for Maintenance Management	Need for Maintenance Management	BB	2		27		
	Maintenance Alternatives	Maintenance Alternatives	BB	1		28		
	Equipment life cycle	Equipment life cycle	BB	1		29		
	Managing of Work Environment	Managing of Work Environment	BB	1		30		
	Kaizen technique	Working practices and personal efficiency	BB	1		31		
	Waste Management – Safety Management – Reliability Concept	Waste Management – Safety Management – Reliability Concept	BB	2		33		
IV	Material Requirements Planning	MRP Phases	BB	1		34		
	Purchase Management	Purchase Management	BB	2		36		
	Stores Management	Stores Management	BB	2		38		
	Inventory Planning and Control Systems	Inventory techniques with problems	BB	6		44		
	Perpetual Inventory Control System.	Perpetual Inventory Control System.	BB	2		46		
V	Acceptance Sampling - Statistical Quality Control	Quality Circles, charts and Sampling Methods	BB	2		48		
	ISO-9000 Standards	Knowing the Standards of ISO	BB	2		50		
	Economics of Quality Assurance	Quality Assurance	BB	1		51		
	Improvement of Operations	TQM, Six Sigma	BB	4		55		

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III SEMESTER

LESSON PLAN

Academic Year: 2019-2020(Y18MS)
Year & Semester: II Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS211Strategic Management
Name of Faculty: Dr.A.V.S.Ashok

Unit . No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
UNIT I	Introduction to Strategic Management	Importance of strategy in business	BB	1		1		
	Concepts in Strategic Management	Concept of business strategy	BB	2		3		
	Strategic Management as a process	Process of strategic management	BB	1		4		
	strategic vision	What is an ideal Vision for a business	BB	1		5		
	Mission, Objectives, Policies	Various dimensions of Mission, Objectives, Policies	BB	1		6		
	Factors that influence a company's strategy	Factors that shape a company's strategy	BB	1		7		
	Crafting a strategy	Processes involved in Crafting a strategy	BB	1		8		
	Industry and Competitive Analysis.	How Industry competition is to be aligned with strategy	BB	2		10		
UNIT II	Environmental Scanning	Scanning the business environment	BB	1		11		
	Leadership,styles	Leadership and its role in strategy	BB	1		12		
	Methods of SWOT Analysis	Strengths Weakness Opportunity Threats	BB	1		13		
	Strategies and competitive advantages	Strategy and various competitive advantages	BB	2		15		
	Strategies analysis and choice	Strategic choice	BB	1		16		
	Tools and techniques	Strategic units Tools and techniques	BB	2		18		
	Strategic Leadership Actions	Strategic Leadership	BB	2		20		

	Developing Human Capital and Social Capital	Types of evaluating jobs	BB	1		21		
	Balanced Scorecard	Compensation management and Compensation design based on job	BB	2		23		
UNIT III	Strategy Formulation	Linking strategy to management	BB	1		24		
	Porter's Value Chain Analysis	Competitive Advantage of a Firm, Entry and Exit Barriers	BB	1		25		
	Strategy Formulation at various levels	Formulation of strategy at corporate level, business and functional levels	BB	2		27		
	Types of Strategies	Various Types of Strategies	BB	2		29		
	Strategic fit	restructuring and diversification strategies	BB	2		31		
	Turnaround Strategy	One important Types of Strategy	BB	1		32		
UNIT IV	Strategy Implementation	Strategy Implementation	BB	1		33		
	Strategy and Structure	Strategy and Structure	BB	1		34		
	Leadership and culture	Leadership, culture and its impact on management policy	BB	1		35		
	Global Strategic connection	Strategies for competing in Globalizing markets	BB	1		36		
	internet economy	internet economy in strategic management	BB	1		37		
	Organizational Values	Organizational Values and their Impact on Strategy	BB	2		39		
	Resource Allocation	Planning systems for implementation of resources	BB	1		40		
UNIT V	Strategy Evaluation and control	Establishing strategic controls	BB	2		42		
	Measuring performance	Strategic performance	BB	2		44		
	Appropriate measures	appropriate measures in strategy	BB	1		45		
	Role of the strategist	strategist role in control	BB	1		46		
	Qualitative and Quantitative Benchmarking	using qualitative and quantitative benchmarking to evaluate performance	BB	2		48		
	Strategic Information Systems	MIS in Strategic management	BB	1		49		
	Strategic Control	Problems in measuring performance	BB	1		50		
	Strategic Surveillance -Strategic Audit.	How to use Strategic Surveillance and Strategic Audit.	BB	2		52		

	Strategic perspective	Overview of evaluation and control	BB	1		53		
	CASE STUDY		LCD	7		60		

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Lesson Plan

Academic Year: 2019-2020 (Y18)
Year & Semester: II Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS213 Logistics & Supply Chain Management
Name of Faculty: Dr.Sk.Mabunni

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)
				L	T	
I	Introduction To Logistics	Understanding the basics of logistics	BB	1		1
I	Logistics Concepts	Understanding the concept of logistics	BB	1		2
I	Logistics Relationships	Identifying the relationships of logistics	BB	2		4
I	Mission Of Logistics Management	Elaborating the mission statement of logistics	BB	1		5
I	Objectives Of Logistics Management	Understanding the objectives of logistics	BB	1		6
I	Components Of Logistics Management	Describing the components of logistics management	BB	1		7
I	Mission Statements Of Logistics	Understanding the mission of logistics	BB	2		9
I	Logistics And Supply Chain	Concept of supply chain	BB	1		10
I	Objectives Of Logistics	Understanding the objectives of logistics	BB	1		11
I	Supply Chain Introduction	Introductory concept of supply chain	BB	1		12
I	Definitions Of Supply Chain	Understanding supply chain definitions	BB	1		13
I	Importance Of Supply Chain	Evaluate the importance of supply chain	BB	1		14
I	Issues In Supply Chain Management	Knowing issues in supply chain	BB	1		15
I	Supply Chain Drivers	Understanding drivers of supply chain	BB	1		16
II	Customer Service And Elements Of Customer Service	Introduction of customer service and its elements	BB	1		17
II	Service Driven Logistics System	Understanding service driven logistics system	BB	1		18
II	Customer Focus In Supply Chain Management	Discussed on customer focus in supply chain	BB	1		19
II	Case Study on customer service	Customer service with an example	BB	1		20
II	Customer Satisfaction And Concept Of Benchmarking	Understanding the concept of bench marking	BB	1		21
II	Process And Benefits Of Benchmarking	Understanding the process of bench marking	BB	1		22
II	Competitive Bench Marking	Discussing competitive bench marking	BB	1		23
III	Need For Integration	Identifying the need for integration	BB	1		24
III	Managing Supply Chain As A Network, Logistics Partnerships	Describing supply chain as a network	BB	2		26
III	Supply Chain Restructuring	Restructuring the supply chain	BB	1		27
III	Agile Supply Chain	Describing agile supply chain	BB	1		28
III	Role Of IT In Supply Chain	Understanding the role of IT in supply chain	BB	1		29

III	IT In Supply Chain	Understanding IT in supply chain	BB	1		30
IV	Sourcing Decisions, In Sourcing and Outsourcing	Concept of in sourcing and outsourcing		1		31
IV	Sourcing Process And Sourcing Strategies	Process of sourcing and understanding strategies	BB	1		32
IV	Warehousing Decisions	Knowing warehousing decisions	BB	1		33
IV	Transportation Decisions	Understanding transportation decisions	BB	1		34
IV	Material Handling	Understanding the concept of material handling	BB	1		35
IV	Packaging	Concept of packaging	BB	2		37
V	Global Supply Chain, Competitive Global Supply Chain	Concept of global supply chain	BB	1		38
V	Global Logistics Management, Global Supply Chain Management	Understanding logistics operations at global level	BB	1		39
V	Global Logistics And Global Supply Chain, Components Of Global Supply Chain	Components of global supply chain	BB	1		40
V	Global Logistics Process	Describing global logistics process	BB	1		41
V	Managing Global Logistics	Discussing managing global logistics	BB	1		42
V	Global Supply Chain Vs Domestic Supply Chain	Understanding the domestic vs global supply chain	BB	1		43
V	Trend Towards Globalization In The Supply Chain	Knowing trends towards globalization in supply chain	BB	1		44
V	Problems Of Global Logistics And Supply Chain Management	Understanding problems of global logistics and supply chain	BB	1		45
V	Challenges Of Global Logistics And Supply Chain Management	Describing the challenges of GLSCM	BB	2		47
V	Problems And Challenges Of Glscm	Problems and challenges of GLSCM	BB	1		48
V	Case Study on GLSCM	Discussing GLSCM with an example	BB	1		49

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LESSON PLAN

Academic Year: 2019-2020 (Y18MS)
Year & Semester: II Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS214 Financial Markets and Services
Name of Faculty: Dr.B.K.Surya Prakasha Rao

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Syllabus And Introduction	To familiarize with basic concepts of Financial system	BB	1		1		
I	Narasimham Committee, Features Of Finance System	To understand Narasimham Committee, Features Of Finance System	BB	1		2		
I	Structure Of Indian Financial System	To understand Structure Of Indian Financial System	BB	2		4		
I	Functions Of Financial System	To evaluate Functions Of Financial System	BB	1		5		
I	Role Financial System In Economic Development	To understand Role Financial System In Economic Development	BB	1		6		
I	Reforms In Financial Sector In India	To understand Reforms In Financial Sector In India	BB	2		8		
I	Major Steps In Economic Reforms Taken By Gvt Of India	To analyze Major Steps In Economic Reforms Taken By Gvt Of India	BB	1		9		
II	Financial Sector Reforms-reforms In Money Market	To analyze Financial Sector Reforms-reforms In Money Market	BB	1		10		
II	Reforms In Capital Markets And Services	To understand Reforms In Capital Markets And Services	BB	2		12		

II	Role Of Sebi On Indian Financial System	To understand Role Of Sebi On Indian Financial System	BB	1		13		
II	Structure Of Indian Financial Markets	To understand Structure Of Indian Financial Markets	BB	1		14		
II	Structure Of Money Markets, Role Of Money Marker In Economic Development	To analyze Structure Of Money Markets, Role Of Money Marker In Economic Development	BB	1		15		
II	Instruments In Money Market	To analyze Instruments In Money Market	BB	2		17		
II	Forex Market, Features Of Forex Market, Instruments In Forex Market	To understand Forex Market, Features Of Forex Market, Instruments In Forex Market	BB	1		18		
II	Structure Of Capital Market, Instruments In Capital Market	To understand Structure Of Capital Market, Instruments In Capital Market	BB	1		19		
II	Methods Of Raising Funds From Primary Market	To identify the Methods Of Raising Funds From Primary Market	BB	1		20		
II	Issue Of Adrs And Gdrs	To understand the Issue Of Adrs And Gdrs	BB	1		21		
II	Sebi Guidelines On Public Issues	To understand Sebi Guidelines On Public Issues	BB	1		22		
II	Operational Mechanism Of Stock Markets, Types Of Brokers	To analyze Operational Mechanism Of Stock Markets, Types Of Brokers	BB	2		24		
II	Functions Of Stock Markets, Sebi Regulation On Stock Exchanges	To evaluate Functions Of Stock Markets, Sebi Regulation On Stock Exchanges	BB	1		25		
III	Introduction To Financial Services, Scope Of Financial Services, Treasury Market, Fund And Fee Based Services	To evaluate Scope Of Financial Services, Treasury Market, Fund And Fee Based Services	BB	1		26		
III	Role Of Financial Services In Economic Development	To understand role Of Financial Services In Economic Development	BB	2		28		

III	Problems Of Financial Services In India	To evaluate Problems Of Financial Services In India	BB	2		30		
III	Introduction To Mutual Funds, Growth And Development Of Mutual Funds	To identify Growth And Development Of Mutual Funds	BB	1		31		
III	Features Of Mutual Funds	To understand Features Of Mutual Funds	BB	1		32		
III	Problems Of Mutual Fund, Mutual Funds In India	To evaluate Problems Of Mutual Fund, Mutual Funds In India	BB	2		34		
III	Sebi Guideline On Mutual Funds, Managing Mutual Funds	To understand Sebi Guideline On Mutual Funds, Managing Mutual Funds	BB	1		35		
III	Sebi Requirements For Amc	To identify Sebi Requirements For Amc		1		36		
IV	Introduction To Merchant Banking, Comparision With Commercial Banks, Investment Banks	To understand Commercial Banks, Investment Banks And Development Banks		1		37		
IV	Functions of Merchant Banking	To evaluate Functions of Merchant Banking		2		39		
IV	Code Of Conduct For Merchant Bankers, Problems Of Merchant Bankers	To analyze Code Of Conduct For Merchant Bankers, Problems Of Merchant Bankers		2		41		
IV	Features Of Credit Rating, Functions Of Credit Rating	To identify Features Of Credit Rating, Functions Of Credit Rating		2		43		
IV	Instruments For Rating, Credit Rating Process	To evaluate Instruments For Rating, Credit Rating Process		1		44		
IV	Rating Methodology Credit Rating Agencies In India. Crisil Objectives And Functions	To understand Rating Methodology Credit Rating Agencies In India. Crisil Objectives And Functions		2		46		
IV	Rating Symbols Of Crisil, Icra Objectives And Rating Services	To understand Rating Symbols Of Crisil, Icra Objectives And Rating Services		1		47		

IV	Sebi Guidelines On Credit Rating Agencies. Code Of Conduct On Credit Rating Agencies	To understand Sebi Guidelines On Credit Rating Agencies. Code Of Conduct On Credit Rating Agencies		2		49		
IV	Introduction Of Factoring ,meaning, Types and Functions of Factoring	To evaluate Types and Functions of Factoring		2		51		
IV	Rbi Guideline On Factoring , Factoring Vs Forfaiting , Factoring Vs Bill Discounting	To evaluate Rbi Guideline On Factoring , Factoring Vs Forfaiting , Factoring Vs Bill Discounting		1		52		
IV	Introduction To Securitization, Definition, Application Of Debt Securitization	To understand Securitization, Definition, Application Of Debt Securitization		2		54		
V	Debt Securitisation Process, Securitisation Vs Factoring. Introduction To Venture Capital Finance	To understand Debt Securitisation Process, Securitisation Vs Factoring. Introduction To Venture Capital Finance		2		56		
V	Meaning ,concept, Definition Of Venture Capital Financing.functions Of Venture Capital Financing	To understand Meaning ,concept, Definition Of Venture Capital Financing.functions Of Venture Capital Financing		2		58		
V	Activities of Venture Capital Financing, Origin, Growth And Development Of Venture Capital Financing , Methods Of Venture Capital Financing In India	To understand Activities of Venture Capital Financing, Origin, Growth And Development Of Venture Capital Financing , Methods Of Venture Capital Financing In India		2		60		

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LESSON PLAN

Academic Year: 2019-2020 (Y18MS)
Year & Semester: II Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS215 Financial Derivatives
Name of Faculty: D.Chakradhar

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Syllabus And Introduction	To familiarize with basic concepts of Financial Markets	BB	2		2		
I	Financial Derivatives	To know about the Financial Derivatives,	BB	2		4		
I	Products and Participants in Derivative Markets	To understand the products and Structure Of Indian Financial markets.	BB	3		7		
I	Forward Contracts Vs. Future Contracts	To find the difference between trading pattern of two different products and their attributes	BB	3		10		
I	Financial Derivatives - Derivatives Trading in India.	To understand the policies and regulations for trading in derivatives	BB	2		12		
II	Futures and Forwards: Meaning, Importance, Futures Exchanges Market Participants	To find the difference between trading pattern of two different products and their attributes and participants in Forwards as well as futures	BB	2		14		
II	Clearing House and Margins	To know the process and Structure of Settlements done by the exchanges	BB	2		16		
II	Futures Pricing – Stock Index Futures	To analyze the pricing of futures and indexed futures in the market	BB	2		18		
II	Hedging strategy Using Future	To understand what is hedging and its implications	BB	4		22		
II	Basic Principle, Arguments for and Against Hedging	To understand the Hedging, how to hedge and aware of risk	BB	1		23		

II	Basic Risk, Minimum Variance Hedge Ratio, Hedging through Stock Index Futures	To analyze the Risk Variance and safe gua[illegible]the Investment proportion	BB	2		25		
III	Options Contracts: Call and Put Options	To understand the concept of products in derivatives of different products and their attributes	BB	1		26		
III	Determinants of Option Price – Stock and Index Option Properties and Mechanics	To understand the concept of products in derivatives of different products and their attributes	BB	2		28		
III	Options Trading in India	To understand trading system in India	BB	1		29		
III	Option Trading Strategies: Basic of Option Positions	To analyze the position i.e long (or)short and apply the strategies of Hedging	BB	3		32		
III	Strategies involving Options – Covered Call, Protective Put, Spread, Combinations and Other Strategies.	To analyze the position i.e long (or)short and apply the strategies of Hedging	BB	3		35		
IV	Options Valuation: Binomial Options Pricing Model	To understand the valuation of options by using Binomial model and its attributes by game theory approch	BB	5		40		
IV	The Black-Scholes Options Pricing Model – Log-normal Property of Stock Prices	To understand the valuation of options by using Black – Scholes model and its attributes by replication of portfolio	BB	6		46		
IV	Swaps: Currency Swaps – The Structure of Swaps - Interest Rate Swaps - Equity Swaps – Valuation of Financial Swaps - Credit Derivatives – Caps and Floors.	To analyze exchange mechanism of financial products i.e from fixed to float and various products in SWAPS	BB	4		50		
V	Hedging Using Greeks (Delta-Gamma Hedging)	To evaluate Hedging using Greeks	BB	1		51		
V	Hedging with Futures	To evaluate Strategies of hedging, speculation and arbitrage	BB	1		52		
V	Index Options and futures, VaR, Historical Simulations	To understand the simulations and Value at Risk	BB	2		54		

V	Management of Derivatives Exposure: Introduction, nature of derivatives trading, setting of Risk vision, reasons for managing derivatives risk and types of risk in derivative trading.	To understand Derivatives Exposure	BB	6		60		

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Date:

LESSON PLAN

Academic Year : 2019-2020 (Y18MS)
Year & Semester : II Year, II Semester
Branch : M.B.A
Subject Code & Name : MS214-3, Product and Brand Management
Name of Faculty : Dr.K.SURYANARAYANA

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Concept Of Product Management	Understanding product management	BB	1		1		
I	classifications of product - Fast Moving Consumer Goods (FMCG).	To know the various types of products and the concept of FMCG		1		2		
I	FMCG From Markets Perspective	Market perspective of FMCG	BB	1		3		
I	Product Analysis	To understand the analysis of products	BB	2		5		
I	Product Life Cycle(PLC)	To know the role of product and brand management (PBM) in PLC	BB	1		6		
I	Market Potential	To assess the market potential of the product	BB	2		8		
I	Element And Methods Of Product Positionong	Product positioning	BB	2		10		
I	New Product Development And Launching Strategies	To understand the new product development and launching strategies	BB	3		13		

II	Concept Of Product Mix And Product [illegible]	To know the concept of product mix and product line	BB	3		16		
II	Product Line Extensions	Product line extensions	BB	2		18		
II	Elements And Methods Of Positioning	To know the elements and methods of positioning	BB	2		20		
II	Positioning Strategy	To understand positioning strategies	BB	3		23		
II	Developing Positioning Strategy	Developing a positioning strategy	BB	1		24		
III	Concept and Definition Of Brand, Brand And Firm	To know the concept of Brand and the relation between brand and firm	BB	1		25		
III	Brands And Consumers, Brand Identity	To understand brand and consumers and the identity of brand	BB/	2		27		
III	Brand Image, identity, Protecting Brand	Protecting a brand and the identity	BB	2		29		
III	Band Perspectives And Brand Levels	Brand levels and perspectives	BB	1		30		
III	Brand Evolution And Brand Building	To know the brand evolution and brand building	BB	1		31		
III	Concept of brand equity	To understand the concept of brand equity	BB	1		32		
III	Consumer/customer based brand equity	To know the customer based brand equity	BB	2		34		
III	Brand Value	Creating brand value	BB	1		35		
IV	Brand Creation	To know the techniques in brand creation	BB	1		36		
IV	Brand Extension	Extension of brand	BB	1		37		
IV	Brand, Product relation	To understand relation between	BB	1		38		

		product and brand						
IV	Brand Portfolio and Revitalization	Brand portfolio and revitalization	BB	1		39		
IV	Brand development through mergers and acquisitions, portfolio revitilization	To Understand brand development through mergers, acquisitions through portfolio revitilization	BB	2		41		
IV	Brand licensing, franchising	To understand brand licensing and franchising	BB	3		44		
IV	role of packaging and labeling in building brand	To know the role of packaging and labeling in building a brand	BB	2		45		
V	Brand Loyalty	To understand the techniques in brand loyalty	BB	3		48		
V	Brand Equity	To know about brand equity	BB	2		50		
V	Brand Personality	To understand the brand personality	BB	1		51		
V	Brand loyalty and Loyalty programs	To understand the brand loyalty and the programs	BB	1		52		
V	Building Global Brands	To understand the techniques in building brands	BB	1		53		
V	Branding Failures	To know the failures of the branding	BB	2		55		
V	Brand Extension Strategies	To understand the brand extension strategies	BB	1		56		
V	Brand Positioning – 3Cs of Positioning	To position the brand using 3 c's	BB	2		58		
V	Competitive Positioning	To understand the competitive positioning	BB	2		60		

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LESSON PLAN

Academic Year: 2019-2020 (Y18MS)
Year & Semester: II Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS215M Consumer Behaviour and Customer Relationship Management
Name of Faculty: Mr.P.Siddardha

Unit. No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
	Syllabus and Course Outcomes	To understand the overview of syllabus	BB	1		1		
I	**UNIT – I** Consumer Behavior Introduction	To understand basic concepts of Consumer Behaviour	BB	1		2		
I	Consumer Behavior Concept	To understand basic concepts of Consumer Behaviour	BB	1		3		
I	Understanding Consumers	To understand consumer needs and problems	BB	1		4		
I	Market Segmentation	To identify different segments of market	BB	2		6		
I	Consumer Environment	To analyze issues of consumer environment	BB	1		7		
I	Business Strategies	To understand basic business strategies	BB	2		9		
I	Organizational Buyer Behavior Models	To evaluate basic models of organizational buyer behaviour	BB	2		11		
I	OB Models	To evaluate basic models of organizational behaviour	BB	2		13		
II	**UNIT – II** Motivation	To be familiar with motivation elements	BB	2		15		
II	Perception	To evaluate concepts of perception	BB	2		17		

II	Personality	To identify the personality traits	BB	2		19		
II	Learning	To analyze basic learning theories	BB	2		21		
II	Attitude	To evaluate stages of attitude formation	BB	2		23		
II	Social And Cultural Factors	To analyze various social and cultural factors	BB	1		24		
II	Personal Factors	To analyze various personal factors	BB	2		26		
II	Social Stratification	To understand the basic concepts of social stratification	BB	2		28		
III	**UNIT – III** Communication, Persuasion	To understand the process of communication	BB	1		29		
III	Innovation	To identify the process of innovation	BB	2		31		
III	Innovation Diffusion	To understand diffusion effect on innovation	BB	2		33		
III	Adoption	To evaluate adoption process	BB	2		35		
III	Consumer Decision Making And Types	To analyze consumer decision making process	BB	2		37		
III	Pre - Purchase And Post - Purchase Decisions	To differentiate between pre and post purchase decisions	BB	2		39		
IV	**UNIT – IV** C R M	To understand the basic concepts of CRM	BB	2		41		
IV	C R M Types And C R M Measurement	To evaluate types of CRM	BB	2		43		
IV	C R M Measurement, C R M Survey	To understand concepts of CRM Survey	BB	2		45		
IV	C R M Survey Design	To identify the stages of CRM Design	BB	2		47		
IV	C R M Statistical Analysis	To analyze statistical issues of CRM	BB	2		49		
IV	10 Ways To Use Customer Results	To identify the ways to use customer survey results	BB	2		51		
IV	Case Study	To analyze the situations in an organization	BB	3		54		

V	**UNIT – V** Relationship Management	To understand the concepts of Relationship Management	BB	2		56		
V	Relationship Strategies	To evaluate different relationship strategies	BB	2		58		
V	Relationship Partnership	To understand the concepts of customer partnership	BB	2		60		

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Date:

LESSON PLAN

Academic Year: 2018-2019 (Y18MS)
Year & Semester: II Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS215H Organization Change and Development
Name of Faculty: Mr.P.Siddardha

Unit . No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
	Syllabus and Course Outcomes	To understand the overview of syllabus	BB	1		1		
I	**UNIT – I** Organizational Change issues	To understand basic concepts of Organizational Change	BB	2		3		
I	Organizational Change dimensions	To understand dimensions of Organizational Change	BB	2		5		
I	Organizational Change factors	To evaluate factors of Organizational Change	BB	2		7		
I	Change Agents	To identify the change agents	BB	3		10		
I	O C Models	To analyze various Organizational Change Models	BB	8		18		
II	**UNIT – II** Resistance To Change	To identify the reasons for resistance to change	BB	2		20		
II	Overcoming Resistance To Change	To identify measures to overcome resistance to change	BB	2		22		
II	Change Process	To understand the change process	BB	2		24		
II	Job Redesigning	To be familiar with Job redesigning process	BB	2		26		

II	Socio - Technical Systems	To evaluate various socio – technical systems	BB	2		28		
III	**UNIT – III** Organizational Development	To understand the concepts of Organizational Development	BB	3		31		
III	History Of O D, Foundation Of O D	To understand the historical aspects of Organizational Development	BB	2		33		
III	O D Models	To evaluate various Organizational Development Models	BB	2		35		
III	Systems Theory, Empowerment	To understand the concepts of Systems Theory, Empowerment	BB	2		37		
IV	**UNIT – IV** O D Interventions	To evaluate various Organizational Development Interventions	BB	8		45		
IV	Designing O D Interventions	To identify the process of designing Organizational Development Interventions	BB	2		47		
IV	Case Study	To analyze the situations in an organization	BB	3		50		
V	**UNIT – V** Research In O D	To evaluate research process in Organizational Development	BB	2		52		
V	Customer - Client Relationship	To analyze customer – client relationship	BB	2		54		
V	Mechanistic V/s Organistic Culture	To identify differences between mechanistic and Organistic cultures	BB	2		56		
V	O D Future	To analyze the future of Organizational Development	BB	2		58		
V	O D Failure	To identify the reasons for failure of Organizational Development	BB	2		60		

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IV SEMESTER

Lesson Plan

Academic Year: 2019-2020 (YIBMS)
Year & Semester: II Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS221 International Business
Name of Faculty: Dr.Sk.Mabunni and Dr.M.Manjusha

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)
				L	T	
I	International Business an Overview:	Understand the concept of IB	BB	1		1
I	Concept of International Business	Understanding	BB	1		2
I	IB Model	Evaluating the Models of IB	BB	1		3
I	Stages of International Business	Identify the Sages in IB	LCD	1		4
I	Impact and implications of Globalization	Know the impact of globalization	LCD	1		5
I	International Business Environment – Economic	Analyze the International Business Economic Environment	BB	1		6
I	International Business Environment – Political, Legal	Analyze the international business political and legal environment	BB	1		7
I	International Business Environment – Demographic	Analyze the International Business Demographic environment	BB	1		8
I	International Business Environment –Socio and Cultural environment	Analyze the International Business Socio cultural Environment	BB	1		9
I	International trade theories.	Gain knowledge in International Trade Theories	BB	1		10
I	International trade theories.	Gain knowledge in International Trade Theories	BB	1		11
I	Case Study	Remember the concepts in IB	LCD	1		12
II	Global Business and Regulations	Understand the Regulation in Global Business	BB	1		13
II	Rationale for Government Intervention	Gain knowledge in Gvt Interventions in IB	BB	1		14
II	Forms of Trade Regulation at National Level	Evaluating the Trade Regulations at national Level	BB	1		15
II	Tariff Barriers	Identify the Tariff Barriers	BB	1		16
II	Non-Tariff Barriers	Identify the Non tariff Barriers	BB	1		17
II	Multilateral Trade Negotiations Structure	Apply the structure of Multilateral Trade Negotiations	BB	1		18
II	Multilateral Trade Negotiations Functions	Analyze the functions of Multilateral Trade	BB	1		19

		Negotiations				
II	GATT	Understanding the structure and function of Gatt	BB	1		20
II	World Trade Organization	Understanding the structure and functions of Gatt	BB	1		21
II	TRIPs and TRIMs	Apply the knowledge in TRIPs and TRIMs	BB	1		22
II	UNCTAD	Understand the concept of UNCTAD	BB	1		23
II	Economic Integration,	Understand the functioning of EI	BB	1		24
II	Major trading blocs; EU	Understand Major Trade Blocks on IB	BB	1		25
II	NAFTA, ASEAN	Understand the concept and Functioning of NAFTA and ASEAN	BB	1		26
II	SAARC	Understand the concept of SAARC	BB	1		26
II	Case study	Remembering the concept GB Regulations	BB	1		27
III	Global Business Strategies	Create the strategies in Global Business	BB	1		28
III	Global Market entry strategies	Evaluate the Global Market Entry strategies	BB	1		29
III	Exporting and its procedure	Apply the Procedure of Exporting mode in IB	BB	1		30
III	Licensing and its procedure	Apply the Procedure of Licensing mode in IB	BB	1		31
III	Franchising and Its procedure	Apply the Procedure of Franchising mode in IB	BB	1		32
III	Contract Manufacturing	Evaluate the process of contract manufacturing	BB	1		33
III	Strategies for Growth: Startups	Create the Strategies for Growth	BB	1		34
III	Mergers	Understand the Mergers process in IB	BB	1		35
III	Acquisitions and Takeover	Understand the Acquisition and takeover process in IB	BB	1		36
III	Joint Ventures	Understand the Joint Venture process in IB	BB	1		37
III	Strategic Alliances – Turnaround Market strategies	Understanding the Strategic alliances	BB	1		38
III	Assembly & Integrated local Manufacturing	Understanding the Integrated Local Manufacturing	BB	1		39
III	Recent Case Studies.	Remembering the concepts in GB strategies	BB	1		40
IV	Foreign Exchange and global Business.	Understand the Foreign Exchange and Global Business	BB	1		41
IV	Foreign Exchange Markets	Apply the knowledge in Foreign exchange Markets	LCD	1		42
IV	Foreign Exchange market mechanism;	Analyze the Forex Mechanism	BB/ LCD	1		43
IV	Exchange rate determination	Analyze the foreign exchange Determination	BB/ LCD	1		44
IV	Exchange rate determination	Analyze the foreign exchange Determination	BB	1		45
IV	Disequilibrium in BOP,	Understand the concept in Disequilibrium on BOP	BB	1		46
IV	Methods of Correction in disequilibrium in BOP	Evaluate the Methods of Correction in Disequilibrium in BOP	BB	1		47
IV	Methods of Correction and its effect on Global Business	Evaluate the Methods of Correction in Disequilibrium in BOP	BB	1		48
V	Global Business Operations: Global Manufacturing Management	Understand the Global Business Operations	BB	1		49
V	Strategy, Make or Buy Decisions	Create the strategy and make or buy Decisions	BB	1		50

V	Global Marketing Management, Globalization of Markets	Apply the knowledge in Global Marketing management the Globalization of Marke	BB	1		51
V	Market Segmentation; Distribution strategy; Pricing Strategy	Evaluate the concept of market Segmentation and the concept of Distribution and Pricing Strategy	BB	1		52
V	Performance appraisal	Apply the Performance appraisal concept in global HRM	BB	1		53
V	Global HRM – Staffing policy, Compensation	Evaluate the Global HRM and Staffing Policy & Compensation	BB	1		54
V	Global E-Business, E-Enabled Business	Analyze the E- Business and E-Business activities	BB	1		55
V	Process transformation and challenges,	Understand the process transformation and challenges in GB	BB	1		56
V	E – Logistics	Apply the knowledge in E-Logistics	BB	1		57
V	E – Logistics and its role,	Apply the knowledge in E-Logistics and its Role	BB	1		58
V	Case study on Amazon	Remember the concepts in Global manufacturing and Services	BB	1		59
V	Case study on Alibaba	Remember the concepts in Global manufacturing and Services	BB	1		60

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Date:

LESSON PLAN

Academic Year : 2019-2020 (Y18MS)
Year & Semester : II YEAR II SEMESTER
Branch : M.B.A
Subject Code & Name : MS 223 F (R17) INTERNATIONAL FINANCIAL MANAGMENT
Name of Faculty : Dr.K.SURYANARAYANA

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
1	**UNIT - I** Overview of International financial management(IFM)	To understand the overview of International financial management	BB	1		1		
2	Introduction	To know the scope of IFM in the era of globalization	BB	2		3		
3	Goals of International Finance	To understand the goals of IFM	BB	1		4		
4	Evolution of exchange rates	To know the stages in the evolution of international finance	BB	3		7		
5	Gold Standards, Bretton Wood System,	Gold Standards, Bretton Wood System,	BB	2		9		
6	Scope of International Finance he flexible exchange rate regime	To understand the concept of flexible exchange rate system	BB	2		11		
7	Scope of International Finance The current rate arrangements	The current exchange rate arrangements	BB	3		14		

8	**UNIT – II** Foreign Exchange Nature	Nature of foreign exchange	BB	1		15
9	Functions and Participants	Functions and Participants	BB	1		16
10	Exchange Rate Mechanism and Determination	Mechanism and Determination	BB	3		19
11	Exchange Rate Mechanism and Determination Purchasing power parity theory for determining exchange rates	Purchasing power parity theory	BB	1	1	20
12	Interest rate parity for determining exchange rates	Interest rate parity theory	BB	2		22
13	covered and uncovered interest parity	covered and uncovered interest parity	BB	1		23
14	Fixed vs Flexible exchange rate mechanism	exchange rate mechanism	BB	2		25
15	Multinational Financial Institutions & Markets	Financial Institutions	BB	2		27
16		Financial Markets	BB	2		29
17	**UNIT – III** Balance of Payments (BoP)	Balance of Paymets	BB	2		31
18	Fundamentals of BoP	Fundamentals	BB	2		33
19	Accounting components of BOP	Accounting component of BOP	BB	2		3
20	Factors affecting International Trade flows and exchange rates	Factors affecting exchange rates	BB	1		36

21	International flow of funds ris.. and management	Risks and management of international flow of funds	BB	2		38		
22	Transaction, translation	Transaction and Translation exposure	BB	2		40		
23	Economic, political and taxation risks	Economic, political and taxation risks and management	BB	1		41		
24	risk management strategies	strategies	BB	2		43		
26	**UNIT - IV** International project appraisal techniques	Project Appraisal techniques	BB	2		45		
27	Adjusted present value	APV	BB	2		47		
28	Risks in cross border investment decision	Risks in cross border investment decisions	BB	2		49		
29	cost of capital for foreign investments	Cost of capital	BB	2		51		
30	financing decisions of global firm	financing decisions of global firm	BB	1		52		
31	Case studies of various companies.		BB	2		54		
32	**UNIT - V** Short term Asset-Liability Management	Introduction	BB	1		55		
33	Multinational Financial Markets International cash management	International cash management	BB	1		56		
34	Multinational Financial Markets Accounts management,	Accounts management	BB	1		57		
35	receivables management,	receivables management	BB	1		58		
36	Inventory Management	Inventory Management	BB	1		59		
37	financing strategies of working capital	financing strategies of working capital	BB	1		60		

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LESSON PLAN

Academic Year: 2019-2020 (Y18MS)
Year & Semester: II Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS224 Security Analysis and Portfolio Management
Name of Faculty: Dr.B.K.Surya Prakasha Rao

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Introduction To Syllabus, Introduction To Investment And Its Meaning	To familiarize with basic concepts of To Investment	BB	2		2		
I	Definitions, Importance Of Investment	To understand Definitions, Importance Of Investment	BB	1		3		
I	Characteristics Of Investment, Steps In Investment Process	To understand Characteristics Of Investment, Steps In Investment Process	BB	1		4		
I	Why Investments? Objectives Of Investment, Security Market Players, Investment Avenues	To evaluate Objectives Of Investment, Security Market Players, Investment Avenues	BB	2		6		
I	Issue Of Securities, Ipos Types Of Issues, Distingusish Between Nim And Nifty	To understand Issue Of Securities, Ipos Types Of Issues, Distingusish Between Nim And Nifty	BB	2		8		
I	Principles Steps Of Public Issue, Central Listing Authority	To understand Principles Steps Of Public Issue, Central Listing Authority	BB	2		10		

I	Listing Of Securities, Advantages Of Listing Management View And Sh Point Of View, Listing Is It A Legal Requirement?	To analyze advantages of Listing Management View And Sh Point Of View, Listing Is It A Legal Requirement?	BB	2		12		
II	General Requirement For Listing	To analyze General Requirement For Listing	BB	2		14		
II	Book Building Concept, Process, Book Building Options	To understand Book Building Concept, Process, Book Building Options	BB	2		16		
II	Book Building Guidelines, Limitations Of Book Building, Reverse Book Building, Sebi Guidelines	To understand Book Building Guidelines, Limitations Of Book Building, Reverse Book Building, Sebi Guidelines	BB	2		18		
II	Introduction To Market Indices, Origin Of Bse Sensex, Sensex Calculation, Calculation Methodology	To understand Market Indices, Origin Of Bse Sensex, Sensex Calculation, Calculation Methodology	BB	2		20		
II	Index Clossure, algorithm, Maintenance Of Index, Replacement Of Securities	To analyze Index Clossure, algorithm, Maintenance Of Index, Replacement Of Securities	BB	2		22		
II	Risk In Investment Management, Risk Elements, Characterstics of Risk	To analyze Risk In Investment Management, Risk Elements, Characterstics of Risk	BB	2		24		
II	Measurement Of Risk, Calculation Of Arithematic Mean, Variance	To understand Measurement Of Risk, Calculation Of Arithematic Mean, Variance	BB	2		26		
II	Systematic And Unsystematic Risk, Measurement Of Risk and Risk Calculation	To understand Systematic And Unsystematic Risk, Measurement Of Risk and Risk Calculation	BB	2		28		

II	Practical Problems On Risk And Return	To identify Practical Problems On Risk And Return	BB	2		30		
II	Measurement Of Return, Arithematic Mean, Geometric Mean, Return Relative, Cumulative Wealth Index And Real Return	To understand Measurement Of Return, Arithematic Mean, Geometric Mean, Return Relative, Cumulative Wealth Index And Real Return	BB	2		32		
II	Problems On Risk And Return	To understand Problems On Risk And Return	BB	2		34		
II	Bond valuation	To analyze Bond valuation	BB	1		35		
II	Holding Period Return, Spot Interest Rate, Yield To Maturity, Introduction To Equity Valuation	To evaluate Holding Period Return, Spot Interest Rate, Yield To Maturity, Introduction To Equity Valuation	BB	2		37		
II	Equity Valuation Through Present Value Models	To evaluate Equity Valuation Through Present Value Models	BB	2		39		
II	Multiple Year Holding Period Return, Dividend Discount Models	To understand Multiple Year Holding Period Return, Dividend Discount Models	BB	2		41		
II	Zero Growth Model, Constant Growth And Variable Growth Models	To evaluate Zero Growth Model, Constant Growth And Variable Growth Models	BB	2		43		
II	Problems On Zero, Constant And Variable Growth Rate	To identify Problems On Zero, Constant And Variable Growth Rate	BB	2		45		
III	Approaches To Security Analysis-fundamental Analysis: Three Step Process	To understand Approaches To Security Analysis-fundamental Analysis: Three Step Process	BB	2		47		
III	Economic Analysis, Industry Analysis And Company Analysis	To evaluate Economic Analysis, Industry Analysis And Company Analysis	BB	1		48		
III	Introduction To Technical	To understand Technical Analysis And	BB	1		49		

	Analysis And Assumptions	Assumptions						
III	Charting Techniques, Resistance And Support Levels And Importance Of Charting Techniques	To identify Charting Techniques, Resistance And Support Levels And Importance Of Charting Techniques		1		50		
III	Dow Theory And Its Assumptions	To understand Dow Theory And Its Assumptions		1		51		
III	Elliot Wave Theory, Relative Strength Index, Breadth Of Index	To evaluate Elliot Wave Theory, Relative Strength Index, Breadth Of Index		1		52		
IV	Introduction To Portfolio Analysis And Selection-measurement Of Portfolio Return And Risk	To analyze Portfolio Analysis And Selection-measurement Of Portfolio Return And Risk		1		53		
IV	Modern Portfolio Theory Of Markowitz, Assumptions And Problems	To identify Modern Portfolio Theory Of Markowitz, Assumptions And Problems		1		54		
IV	Sharpe's Single Index Model, capital asset pricing model (CAPM)	Sharpe's Single Index Model, capital asset pricing model (CAPM)		1		55		
V	Methods of Portfolio Evaluation – Sharpe's, Treynor's and Jensen's measures of portfolio performance evaluation -	To understand Methods of Portfolio Evaluation		2		57		
V	Fama's decomposition of portfolio return	To understand Fama's decomposition of portfolio return		2		59		
V	Portfolio Revision: Need, Constraints, Strategies.	Portfolio Revision: Need, Constraints, Strategies.		1		60		

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Date:

LESSON PLAN

Academic Year: 2019-2020 (Y18MS)
Year & Semester: II Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS225 Foreign Exchange Management
Name of Faculty: D.Chakradhar

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Syllabus And Introduction	To familiarize with basic concepts of Foreign Exchange Markets	BB	2		2		
I	Sources and Uses of Foreign Exchange	To understand the Sources and Uses of Foreign Exchange	BB	2		4		
I	Functions of Foreign Exchange Market	To understand the Functions of Foreign Exchange Market	BB	3		7		
I	Role of FEDAI and other Market Participants. in Foreign exchange Business	To understand the role if FEDAI and its participants	BB	3		10		
II	Concept and different types of Exchange	To understand Concept and different types of Exchange	BB	2		12		
II	Foreign Exchange rate determination	To understand Foreign Exchange rate determination	BB	2		14		
II	Foreign Exchange Rates and Quotations	To know Foreign Exchange Rates and Quotations	BB	2		16		
II	LERMS	To know about the Liberalized Exchange Rate Management System	BB	2		18		
II	Determination of Exchange rates – Spot Rates, Forward Exchange rates, FOREX Contracts	To analyze the exchange rates	BB	4		22		

II	Convertibility of Indian Rupee: Measuring and Managing Foreign Exchange Exposure	To know the risk associated with FOREX	BB	1		23		
II	Transaction Exposure	To know the risk associated with FOREX	BB	1		24		
III	Operating Exposure	To know the risk associated with FOREX	BB	1		25		
III	Accounting Exposure	To know the risk associated with FOREX	BB	4		26		
III	Interest Rate Exposure	Interest Rate Exposure	BB	1		27		
III	Foreign exchange transactions – Purchase and Sale transaction,	To Know Foreign exchange transactions – Purchase and Sale transaction,	BB	3		30		
III	Spot v/s Forward transaction, Forward Margins	To Know Spot v/s Forward transaction, Forward Margins	BB	2		32		
III	Factors determining Forward Margins and SWAPS	To know Factors determining Forward Margins and SWAPS	BB	3		35		
IV	Role of Banks in FOREX Market: Functions of FOREX Department	To Understand Role of Banks in FOREX Market Functions of FOREX Department	BB	3		38		
IV	Inter Bank Deals, Cover Deal	To Understand Inter Bank Deals, Cover Deals	BB	4		42		
IV	Maintenance of Foreign Currency Accounts: NRI – NRO, NRE Liberalized Remittance Scheme	To understand how to maintain the foreign accounts	BB	4		46		
IV	Exchange Earners Foreign Currency Accounts (EEFC), Foreign Currency Accounts for SEZ (FCY)	To understand EEFC & FCY	BB	4		50		
V	FEMA and its Philosophy	To understand FEMA and its Philosophy	BB	2		52		
V	Role of RBI in regulating Foreign Exchange business of bank	To understand Role of RBI in regulating Foreign Exchange business of bank	BB	2		54		

V	Authorized dealers	To understand Role of RBI in regulating Foreign Exchange business of bank/Dealers		1		55		
V	NRI Customers and Various banking and investment products available to them under FEMA	To know NRI Customers and Various banking and investment products available to them under FEMA		5		60		

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Date:

Lesson Plan - SPDM

Academic Year: 2019-2020 (Y18 S)
Year & Semester: II Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS224M Sales Promotion & Distribution Management
Name of Faculty: Dr.Sk.Mabunni

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)
				L	T	
I	Concept of Sales Management	Introduce the concept of sales to attain profits to the organization	BB	1		1
I	Nature And Scope Of Sales Management	Understands the nature of sales and its broad scope	BB	1		2
I	Nature And Scope Of Sales Management	Understands the nature of sales and its broad scope	BB	1		3
I	Objectives Of Sales Management	Identify different objectives of sales people in an organization	BB	1		4
I	Functions Of Sales Management	Understand various functions of Sales management	BB	1		5
I	Responsibilities And Duties Of Sales Manager	Knows the duties and responsibilities of sales managers.	BB	1		6
I	Responsibilities And Duties Of Sales Manager	Knows the duties and responsibilities of sales managers.	BB	1		7
I	Relationship With Top Management And Salesman	Attain the relationship with top management and salesman	BB	1		8
I	Coordinating And Controlling Marketing Mix	Understand the procedures of controlling marketing mix	BB	1		9
I	Trends & Challenges	Gain different trends and challenges in doing sales	BB	1		10
I	Selling Through Different Media	Understand the media through sales can be done effectively	BB	1		11
I	Selling Through Different Media	Understand the media through sales can be done effectively	BB	1		12
II	Sales Promotion Definition And Role	Defining sales promotion and understand its role in marketing	BB	1		13
II	Types, Consumer Sales Promotion	Know different types of sales promotion and consumer sales promotion	BB	1		14
II	Dealer Display Contests And Discount	Understand various dealer contests and discounts offered by organizations	BB	1		15
II	Bonus Offers, Retail Merchandise Techniques	Gain knowledge on techniques of retail merchandising	BB	1		16
II	Bonus Offers, Retail Merchandise	Gain knowledge on techniques of retail	BB	1		17

	Techniques	merchandising				
II	Retail Merchandising Techniqu	Knowing retail merchandising techniques	BB	1		18
II	Retail Merchandising Techniques	Knowing retail merchandising techniques	BB	1		19
II	Publicity Advantages And Disadvantages	Define publicity and knows advantages and disadvantages of publicity	BB	1		20
II	Public Relations Campaign	Designing public relations campaign	BB	1		21
II	Process Of Public Relations	Step by step procedure of public relations	BB	1		22
II	Use Of Press, Radio And TV	Using press, Radio and TV in promotion of products	BB	1		23
II	Use Of Press, Radio And TV	Using press, Radio and TV in promotion of products	BB	1		24
II	Customer Service And Community Service	Understanding customer service and community service	BB	1		25
III	Sales Force Job Analysis And Description	Analyzing Sales Job	BB	1		26
III	Recruiting The Sales Personnel	Sources of recruitment of sales force	BB	1		27
III	Recruiting The Sales Personnel	Process of recruitment of sales force	BB	1		28
III	Selecting The Sales Personnel	Know the process of selecting the sales force	BB	1		29
III	Training The Sales Personnel	On the job methods to train the sales force	BB	1		30
III	Training The Sales Personnel	off the job methods to train the sales force	BB	1		31
III	Compensating The Sales People	Understanding salary, incentives, bonuses offered to sales force	BB	1		32
III	Case Study	Analyzing the case	BB	1		33
III	Essentials Of Good Compensation Plan	Requisites for good compensation plan	BB	1		34
III	Motivating The Sales Personnel	Methods to motivate the sales force	BB	1		35
III	Motivating The Sales Personnel	Methods to motivate the sales force	BB	1		36
III	Need For Achievement, Maslow's Need Hierarchy Theory	Maslow's need theory of motivation applied to sales jobs	BB	1		37
III	Sales People Career Development Cycle	Steps involved in sales force career	BB	1		38
III	Sales People Need Analysis And Sales Manager's Tasks For Motivation	Understanding tasks motivating the sales people	BB	1		39
III	Sales Territories, Factors	Dividing market into territories	BB	1		40
III	Sales Territories, Factors	Dividing market into territories	BB	1		41
III	Sales Territory Design, Goals And Adjustments	Know the goals of each sales territory	BB	1		42
III	Sales Quotas	Understanding different types of quotas	BB	1		43
III	Sales Quotas	Understanding different types of quotas	BB	1		44
III	Sales Budgets, Format And Process	Know the procedure of preparing sales budget	BB	1		45
III	Role Of Distribution In Marketing Mix, Marketing Channel Structure	Understand the marketing channel structure	BB	1		46
IV	Functions And Relationships Of Channels Of Distribution, Channel Dynamics And Conflicts	Know the relationships of channels of distribution	BB	1		47

IV	Functions And Relationships Of Channels Of Distribution, Channel Dynamics And Conflicts	Know the relationships of channels of distribution	BB	1		48
IV	Channel Planning, Org Patterns Of In Marketing Channels, Channel Design Process And Decisions	Understand the process of channel design	BB	1		49
IV	Channel Planning, Org Patterns Of In Marketing Channels, Channel Design Process And Decisions	Understand the process of channel design	BB	1		50
IV	Wholesaling, Types Of Wholesalers	Knowledge on types of wholesalers	BB	1		51
IV	Wholesaling, Types, Wholesale Marketing Decisions	Understand the wholesaler decisions	BB	1		52
IV	Retailing, Types, Retail Marketing Decisions	Types of retailers and their decisions	BB	1		53
IV	Retailing, Types, Retail Marketing Decisions	Types of retailers and their decisions	BB	1		54
V	Vertical Marketing System, Horizontal Marketing System	Understand channel dynamics	BB	1		55
V	Vertical Marketing System, Horizontal Marketing System	Understand channel dynamics	BB	1		56
V	Multi Channel Marketing System	Information on multi channel marketing system	BB	1		57
V	Channel Conflict And Management	Arise of channel conflicts	BB	1		58
V	Channel Conflict And Management	Arise of channel conflicts	BB	1		59
V	Channel Control	Controlling the channel	BB	1		60

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LESSON PLAN

Academic Year: 2019-2020(Y18MS)
Year & Semester: II Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS224H Performance& Compensation Management
Name of Faculty: Dr.A.V.S.Ashok

Unit . No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
UNIT I	Performance Management	Importance of performance management	BB	1		1		
	Introduction - Concept and Objectives	Concept of performance	BB	2		3		
	Prerequisites, Principles	Principles of Performance	BB	1		4		
	Characteristics of an Ideal PM Systems	What is an ideal performance system	BB	1		5		
	Dimensions of Performance Management	Various dimensions of performance	BB	1		6		
	Factors Affecting Performance Management	Factors which affect performance of employees	BB	1		7		
	Performance Management Process	Processes involved in measuring performance	BB	1		8		
	Performance Management and Strategic Planning	How performance is to be aligned with strategy	BB	2		10		
	Performance Management and Performance Appraisal Concept	Performance appraisal and potential appraisal of employees	BB	2		12		
	Appraisal Practices in India	Various appraisal practices in India	BB	1		13		
UNIT II	Compensation Management	Introduction to Compensation management	BB	1		14		
	Foundation of Compensation Management	Foundations of Compensation management	BB	1		15		
	Need , Significance	Need and Significance of Compensation management	BB	1		16		

	Economic Theories of Compensation	Theories of Compensation management	BB	2		18		
	Job Analysis	Types of analyzing Job	BB	2		20		
	Job Evaluation	Types of evaluating jobs	BB	2		22		
	Compensation and Job Design	Compensation management and Compensation design based on job	BB	2		24		
UNIT III	Performance Linked Compensation	Linking performance to Compensation management	BB	1		25		
	Managing Performance	Performance management	BB	1		26		
	Rewarding Performance	Incentivizing and	BB	1		27		
	Incentive Schemes/Payment-By-Result	Rewarding Performance	BB	2		29		
	Wage-Design	Wage design	BB	1		30		
	Wage-Fixation	**fixation**	BB	1		31		
	Wage Differentials	And Differentials	BB	1		32		
	Team Based Compensation	Team and Compensation management	BB	1		33		
UNIT IV	Compensation Policy	Compensation management and policy	BB	2		35		
	Compensation at Macro	Country level Compensation management policies	BB	1		36		
	Industry's Compensation Policy	Industry level Compensation management policies	BB	1		37		
	Retirement Plans	Retirement plans	BB	1		38		
	Voluntary Retirement Scheme	And various voluntary retirement schemes	BB	1		39		
	International Compensation Management	International Compensation management policies	BB	2		41		
UNIT V	Compensation Administration	Compensation Administration	BB	1		42		
	Wage boards	Minimum wage boards	BB	2		44		
	pay commission	Pay methods	BB	1		45		
	Pay budget management	Pay budget management	BB	1		46		
	Executive Compensation	Compensation management for Executives	BB	2		48		
	Nature of Executive Compensation	Compensation management	BB	1		49		
	Managing executive compensation	Compensation management for Executives	BB	1		50		

	Compensation management	Compensation management and strategic perspective	BB	2		52		
	Strategic perspective	Compensation management And strategic perspective Executives	BB	1		53		
	CASE STUDY		LCD	7		60		

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LESSON PLAN

Academic Year: 2019-2020 (Y18MS)
Year & Semester: II Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS225M Services and Retail Marketing
Name of Faculty: Mr.P.Siddardha

Unit. No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
	Introduction With Students	To familiarize with specializations	BB	1		1		
	Syllabus and Course Outcomes	To understand the overview of syllabus	BB	1		2		
I	**UNIT – I** Service	To understand basic issues of Service	BB	2		4		
I	Services Concepts	To understand basic concepts of Service	BB	2		6		
I	Why Services	To identify the need of services	BB	1		7		
I	Services Marketing	To understand basic concepts of Services Marketing	BB	2		9		
I	Services Marketing In India	To identify the services marketing growth in India	BB	2		11		
I	Service And Technology, Gaps	To understand gaps between service and technology	BB	2		13		
I	Service Marketing Mix, Characteristics	To evaluate characteristics of Services Marketing Mix	BB	2		15		
I	Service Positioning	To understand basic concepts of Services Positioning	BB	3		18		
I	Service Branding, Service Development Process	To identify the process for Service Development	BB	2		20		
II	**UNIT – II** Consumer Behavior, Expectations	To evaluate consumer behaviour expectations	BB	2		22		
II	Customer Perception Strategies	To analyze various Customer Perception Strategies	BB	2		24		

II	Understanding Customer Needs	To identify customer needs and problems	BB	2		26		
II	Listening To Customer Needs	Listen to customers ideas	BB	2		28		
II	Elements In Customer Service Research	To identify elements in Customer Service Research	BB	2		30		
II	Customer - Organization Relationship	To understand relationship b/w customer and organization	BB	2		32		
II	Service Recovery	To understand basic concepts of Service Recovery	BB	2		34		
III	**UNIT – III** Service Design	To identify the stages of Service Design	BB	2		36		
III	Service Innovation	To understand basic concepts of Service Innovation	BB	2		38		
III	Service Standards	To analyze various Service Standards	BB	3		41		
IV	**UNIT – IV** Retailing And Its Decisions	To understand the basic concepts of Retailing	BB	1		42		
IV	Retailing Decisions And Types	To analyze various Retailing Decisions	BB	2		44		
IV	Product Retailing Versus Service Retailing	To differentiate between Product Retailing and Service Retailing	BB	2		46		
IV	Types of Retailers	To identify the different types of Retailers	BB	2		48		
IV	Retail Environment	To understand the issues of Retail Environment	BB	2		50		
V	**UNIT – V** Retail Location Types	To evaluate the types of Retail Location	BB	2		52		
V	Integrated Marketing Communication	To analyze the issues of Integrated Marketing Communication	BB	2		54		
V	Integrated Marketing Communication Concepts	To understand the basic concepts of Integrated Marketing Communication	BB	2		56		
V	Integrated Marketing Communication Tools	To analyze the tools of Integrated Marketing Communication	BB	2		58		
V	Case Study	To analyze the situations in an organization	BB	2		60		

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LESSON PLAN

Academic Year: 2019-2020 (Y18MS)
Year & Semester: II Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS225H Human Resource Development: Strategies and Systems
Name of Faculty: Mr.P.Siddardha

Unit . No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
	Introduction With Students	To familiarize with specializations	BB	1		1		
	Syllabus and Course Outcomes	To understand the overview of syllabus	BB	1		2		
I	**UNIT – I** H R D	To understand basic issues of HRD	BB	2		4		
I	H R D Introduction, Concept	To understand basic concepts of HRD	BB	1		5		
I	H R D Goals	To identify the goals of HRD	BB	2		7		
I	H R D Importance	To understand the importance of HRD	BB	1		8		
I	H R D Challenges	To analyze the challenges of HRD	BB	3		11		
I	HRD at Micro And Macro Levels	To differentiate HRD at Micro and Macro levels	BB	2		13		
I	H R D Climate	To understand the need for good HRD Climate	BB	2		15		
I	H R D Process	To evaluate the steps in HRD Process	BB	2		17		
I	Role Of H R D Manager	To identify the role of a HRD Manager	BB	2		19		
I	H R D Matrix	To understand the structure of HRD	BB	1		20		
II	**UNIT – II** H R D Needs	To understand the needs of HRD	BB	1		21		
II	H R D Needs Assessment	To understand the need for HRD needs assessment	BB	1		22		
II	Designing H R D Program	To evaluate the process for Designing H R D Program	BB	3		25		
II	Implementing H R D Program	To evaluate the process for Implementing H R D Program	BB	3		28		

II	Evaluating H R D Program	To evaluate the process for Evaluating H R D Program	BB	3		31		
III	**UNIT – III** Career and Career Development	To understand the need for Career Development	BB	2		33		
III	Balanced Scorecard	To identify the model of Balanced Scorecard	BB	2		35		
III	Quality Of Work Life, Quality Circles	To understand the concepts Quality Of Work Life, Quality Circles	BB	2		37		
III	Employee Engagement	To evaluate the techniques for Employee Engagement	BB	2		39		
III	Management Development	To analyze the process for Management Development	BB	2		41		
IV	**UNIT – IV** Human Capital Development	To understand the concepts of Human Capital Development	BB	2		43		
IV	Human Capital Life Cycle Development	To identify the model of Human Capital Life Cycle Development	BB	2		45		
IV	H R Audit	To understand the need for Human Resources Audit	BB	2		47		
IV	H R D Scoreboard	To identify the model of H R D Scoreboard	BB	2		49		
IV	H R D & O D	To evaluate the differences between H R D & O D	BB	2		51		
V	**UNIT – V** H R D In Organizations	To identify the role of HRD in organizations	BB	2		53		
V	H R D Outsourcing	To understand the concepts of H R D Outsourcing	BB	3		56		
V	Global Developments Of H R D	To evaluate the global developments of HRD	BB	2		58		
V	Implications Of H R D	To identify the implications of HRD	BB	2		60		

P. Siddhartha

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Date:

Y 17 MS BATCH

I SEMESTER

	Thought, Various Contributions	M[illegible]gement	[illegible]	[illegible]		11		
I	F.W.Taylor's Principles Introduction And First 4 Principles	To understand F.W. Taylor's Principles	BB	1		12		
I	F.W Taylor 4 Principles. Introduction To Henry Fayol's 14 Principles	To understand F.W. Taylor's Principles	BB	1		13		
I	Likert's, Mooney's, Weber's And Human Relations Principles	To analyze Likert's, Mooney's, Weber's And Human Relations Principles	BB	1		14		
II	Introduction To Planning	To understand planning	BB	1		15		
II	Definitions And Purpose Of Planning	To evaluate Purpose Of Planning	BB	1		16		
II	Features Of Planning	To identify the Features Of Planning	BB	1		17		
II	Purpose Of Planning	To understand the Purpose Of Planning	BB	2		19		
II	Limitations Of Planning ,introduction Planning	To understand the limitations Of Planning	BB	1		20		
II	Cont. Classification Of Planning Premises	To analyze Planning Premises	BB	1		21		
II	Introduction To Forecasting, Essentials of Forecasting	To evaluate Essentials of Forecasting	BB	1		22		
II	Relationship Between Forecasting And Planning	To identify Relationship Between Forecasting And Planning	BB	2		24		
II	Advantages And Limitations Of Forecasting	To understand the Advantages And Limitations Of Forecasting	BB	1		25		
II	Techniques Of Forecasting	To evaluate the Techniques of Forecasting	BB	1		26		

LESSON PLAN

Academic Year: 2017-2018 (Y17MS)
Year & Semester: I Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS111 Perspectives of Management
Name of Faculty: Dr.B.K.Surya Prakasha Rao

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Introduction To Management Programme	To familiarize with basic concepts of Management	BB	1		1		
I	Introduction To Management	To understand introduction of Management	BB	1		2		
I	Definitions	To understand definitions of Management	BB	1		3		
I	Scope Of Management, Management As Science	To understand scope of Management	BB	1		4		
I	Management As Art And Profession	To evaluate concepts of Management	BB	1		5		
I	Functions Of Management	To evaluate functions of Management	BB	1		6		
I	Managerial Levels Vs Skills And Its Matrix	To evaluate Managerial Levels Vs Skills	BB	1		7		
I	Concept Of Social Responsibility And Definitions	To analyze Concept Of Social Responsibility	BB	1		8		
I	For And Against Arguments To Social Responsibility	To analyze For And Against Arguments To Social Responsibility	BB	1		9		
I	Areas Of Social Responsibility Of Business - Initiatives In Indian Corporates	To understand Areas Of Social Responsibility	BB	1		10		

II	Sales Forecasting And Steps In Forecasting, Environmental Forecasting.	To identify Sales Forecasting And Steps	BB	1		27		
II	Introduction To Decision Making. Characteristics Of Decision Making.	To identify Decision Making and Characteristics Of Decision Making.	BB	1		28		
II	Introduction To MBA, Definition , Features Of MBA	To evaluate Features Of MBA	BB	2		30		
II	Steps In MBA Process, Benefits, Preconditions. Introduction To Organisation	To understand the Steps In MBA Process	BB	1		31		
III	Definition Of Organisation, Features, Steps In Organisation Process	To identify the Steps In Organisation Process	BB	1		32		
III	Formal And Informal Organisation, Features Of Informal Organisation.	To understand the Formal And Informal Organisation	BB	2		34		
III	Overlays Of Informal Organisation	To understand Overlays Of Informal Organisation	BB	1		35		
III	Benefits Of Informal Organisation To Members And Organisation	To analyze the benefits Of Informal Organisation To Members And Organisation	BB	1		36		
III	Introduction Of Span Of Management	To evaluate Span Of Management	BB	2		38		
III	Introduction To Span Of Management And Definitions	To identify the Introduction To Span Of Management And Definitions	BB	1		39		
III	VA Graicunas Perception On Span Of Management	To evaluate VA Graicunas Perception On Span Of Management	BB	1		40		

III	Line Organisation And Staff Organisation.	To understand Line Organisation And Staff Organisation.	BB	1		41		
III	Line Organisation And Staff Organisation	To understand Line Organisation And Staff Organisation.	BB	1		42		
III	Line And Staff Relationship, Conflicts Between Line And Staff. How To Resolve Conflict Between Them.	To analyze the relations between Line And Staff	BB	2		44		
III	Delegation Of Authority, principles Of Delegation, distinction Between Delegation And Decentralization.	To evaluate ,principles Of Delegation	BB	1		45		
III	Decentralization ,trade-off Between Centralization And Decentralization ,introduction To Staffing	To identify ,trade-off Between Centralization and Decentralization	BB	1		46		
IV	Staffing, features and Elements In Staffing Process	To understand the Elements In Staffing Process	BB	1		47		
IV	Selecting The Executives, Training For Executives, Six A's For Executive Selection	To understand the Six A's For Executive Selection	BB	1		48		
IV	Introduction To Direction, Definition, Dale's View features of Direction	To analyze Dale's View Features Of Direction	BB	2		50		
IV	Features Of Direction; Introduction To Motivation, Definition; Characteristics Of Motivation, Incentives, Maslow's Need Hierarchy And Hertzberg Two Factor Theory	To identify Features Of Direction	BB	1		51		

IV	Characteristics Of Motivation; Incentives; Maslow's Need Hierarchy And Hertzberg Two Factor Theory	To understand the Characteristics of Motivation						
IV	Vroom's Expectancy Theory; Aldermen's Erg Theory Of Motivation;	To understand Vroom's Expectancy Theory	BB	1		54		
IV	McClelland Theory ; Porter's And Lawler's Theory Of Motivation	To understand McClelland Theory ; Porter's And Lawler's Theory Of Motivation	BB	2		56		
V	Introduction To Controlling; Definition; Features; Importance; Steps In Controlling Process ; Essentials Of Effective Control System	To understand the concepts of Controlling	BB	2		58		
V	Introduction To Leadership; Definition; Characteristics ; Functions Of Leadership	To understand the concepts of Leadership	BB	1		59		
V	Leadership Styles; Directive; Participative And Laissez Faire Leadership Styles, Advantage And Disadvantages Of Leadership Styles	To analyze Leadership Styles	BB	1		60		

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LESSON PLAN

Academic Year: 2017-2018 (Y17MS)
Year & Semester: I Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS 115 Accounting For Managers
Name of Faculty: D.Chakradhar

Unit . No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Financial Accounting	Accounting Definition ,objectives	BB	1		1		
	Cost Accounting	Scope of Accounting	BB	1		2		
	Management Accounting	Nature of Accounting	BB	1		3		
	Accounting Concepts and Conventions	Concepts	BB	3		6		
	Generally Accepted Accounting Principles	GAAP and Accounting Standards	BB	1		7		
	International Financial Reporting Standards in India	Accounting Standards	BB	1		8		
	Users of Accounting Information	Accounting Information	BB	1		9		
	Classification of Accounts – Journal – ledger and Trial Balance preparation – Errors and their rectification	Journal, ledger and Trial Balance	BB	4		13		
II	Capital and Revenue items	Capital and Revenue items	BB	1		14		
	Construction and Analysis of Trading, profit and loss account and Balance Sheet	Trading, profit and loss and Balance Sheet	BB	8		22		
	– Inventory Valuation and Depreciation	Depreciation	BB	2		24		
	Accounting for Intangible Assets.	Accounting for Intangible Assets	BB	1		25		
III	Financial Statement Analysis	Financial Statement Analysis	BB	1		26		
	Comparative, common size, trend, percentage (Theory)	Various methods for Statement Analysis	BB	2		28		
	Ratio Analysis	Analysis by Ratio Analysis	BB	5		33		
	Funds Flow – Cash Flow Statements	Analysis by Funds Flow – Cash Flow Statements	BB	5		38		

IV	Management Accounting	Management Accounting	BB	1		39		
	Costing – Elements of Costing and Cost Sheet (Theory)	[redacted],VC,FC and its importance in costing	BB	1		40		
	Marginal Costing – CVP analysis – Break Even Point (Theory and Problems)	Break Even Point, MOS, pricing	BB	6		46		
	Standard Costing and Variance Analysis	Price , Usage , Quantity with Direct, Fixed and Variable	BB	4		50		
V	Budget and Budgetary Control	principles and methods	BB	1		51		
	Budget and Budgetary Control	types of budgets and preparation of Fixed, Flexible, Cash, Master and Zero Based Budgets	BB	3		54		
	Inflation accounting	Inflation accounting	BB	1		55		
	Human Resource Accounting – Responsibility Accounting – Reporting to Management (Theory)	HR Accounting	BB	1		56		

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LESSON PLAN

Academic Year: 2017-2018 (Y17MS)
Year & Semester: I Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS116 Organizational Behaviour
Name of Faculty: Mr.P.Siddardha

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
	Introduction With Students	To familiarize with students	BB	1		1		
	Syllabus Overview and Course Outcomes	To understand overview of syllabus	BB	1		2		
I	**UNIT – I** O B Introduction, Nature	To understand basic concepts of Organizational Behaviour	BB	2		4		
I	O B Scope, Approaches	To understand scope of Organizational Behaviour	BB	2		6		
I	O B Elements	To evaluate Organizational Behaviour elements	BB	2		8		
I	O B Challenges	To analyze Organizational Behaviour challenges	BB	2		10		
I	O B Contributing Disciplines	To evaluate Organizational Behaviour disciplines	BB	2		12		
I	O B Models	To analyze Organizational Behaviour Models	BB	3		15		
I	O B Importance	To analyze Organizational Behaviour importance	BB	2		17		
II	**UNIT – II** Perception	To understand the basic Perception concepts	BB	2		19		
II	Factors Influencing Perception	To understand the basic Perception concepts	BB	1		20		
II	Barriers To Perception, Enhancing Perceptual Skills	To understand the basic Perception concepts	BB	1		21		
II	Enhancing Perception Skills	To understand the basic Perception concepts	BB	2		23		

II	Learning And Its Theories	To analyze theories of learning	BB	3		26		
II	Personality And Its Determinants	To evaluate traits of Personality	BB	1		27		
II	Personality Theories	To evaluate traits of Personality	BB	2		29		
III	**UNIT – III** Group And Types Of Groups	To identify the types of groups	BB	2		31		
III	Determinants Of Group Behaviour	To understand the concepts of group	BB	2		33		
III	Stages Of Group Formation	To understand the concepts of group	BB	2		35		
III	Developing Inter - Personal Relations	To analyze the relations between people	BB	2		37		
III	Transactional Analysis	To evaluate transactional analysis theories	BB	3		40		
III	Organizational Design	To identify the stages in Organizational Design	BB	2		42		
IV	**UNIT – IV** Organizational Culture	To understand the concepts of Organizational Culture	BB	3		45		
IV	Organizational Climate	To evaluate the nature of Organizational Climate in an organization	BB	3		48		
IV	Creating An Ethical Organizational Culture	To identify the process for Creating an Ethical Organizational Culture	BB	2		50		
IV	Organizational Conflict	To identify the measures to remove Organizational Conflict	BB	4		54		
V	**UNIT – V** Organizational Change	To evaluate the concepts of Organizational Change	BB	4		58		
V	Organizational Development	To understand the nature of Organizational Development	BB	2		60		

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Lesson Plan - MC

Academic Year: 2017-2018 (4/17/MS)
Year & Semester: I Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS117Managerial Communication
Name of Faculty: Dr.K.Suryanarayana

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)
				L	T	
I	Introduction To Communication	Understanding the basics of communication	BB	1		1
I	Definitions Of Communication	Understanding the definitions of communication	BB	1		2
I	Role Of Communication In Business	Identifying the role of communication in business	BB	2		4
I	Features Of Communication	Evaluating the features of communication	BB	1		5
I	The Process Of Human Communication	Understanding the process of communication	BB	1		6
I	Objectives Of Communication	Describing the objectives of communication	BB	1		7
I	Barriers In Communication	Evaluating the barriers of communication	BB	2		9
I	Types Of Communication	Knowledge on types of communication	BB	1		10
I	Oral Communication	Basics on oral communication	BB	1		11
I	Written Communication	Understanding written communication	BB	1		12
I	Visual Communication, Audio Visual Communication, Silence	Illustrating audio visual communication with examples	LCD	1		13
I	Listening, Cultural Effects On Communication	Understanding listening activity	BB	1		14
II	Organizational Communication, Formal Communication	Observing formal communication	BB	1		15
II	Informal Communication, Grapevine Communication, Features, Types	Informal and grapevine communication	BB	1		16
II	Intra Personal And Interpersonal Communication	Intra and inter personal communication effects	BB	1		17
II	Transactional Analysis, Johari Window, Exchange Theory	Understanding Johari window	BB	1		18
III	Managing Motivation For Interpersonal Communication	Knowing motivation for inter personal communication	BB	1		19
III	Interpersonal Perception	Understanding perception	BB	1		20
III	Interpersonal Values, Attitude	Information on values and attitude	BB	1		21
III	Role Of Emotion In Interpersonal Communication	Evaluating the role of emotion in interpersonal	BB	1		22
III	Communication Styles	Discussing styles of communication	BB	1		23
III	Gateways To Effective Interpersonal Communication	Identifying different gate ways to communication	BB	1		24

III	Gateways To Effective Interpersonal Communication	Identifying different gate ways to communication	BB	2		26
IV	Business Writing Skills, Significance Of Business Correspondence	Understanding Business Writing Skills	BB	1		27
IV	Essentials Of Business Correspondence, Business LettersAnd Forms	Describing Essentials Of Business Correspondence	BB	1		28
IV	Forms Of Business Letter	Concept of business letter	BB	1		29
IV	Business Letters Profile	Profile of business letters	BB	1		30
IV	Oral Presentations Making And Delivery	Delivery of oral presentations		1		31
IV	Meetings Purpose And Types	Concept of meetings	BB	1		32
IV	Advantages And Disadvantages Of Meetings	Understanding merits and demerits of meetings	BB	1		33
IV	Use Of Technology In Business Communication	Usage of technology in communication of businesses	BB	1		34
IV	Email Messages	Understanding of E Mails	BB	1		35
V	Exercise On Communication	Exercises on listening and oral communication	LCD	2		37
V	Communication Exercise	Exercises on business letters	LCD	1		38
V	Effective Presentation And Interview Skills	Obtaining interview skills	BB	1		39
V	Art Of Giving Interviews In Relation To Placements	Understanding of interview procedures	BB	1		40
V	Appraisal Interviews In Selection And Placements	Evaluating appraisal interviews	BB	1		41
V	Appraisal Interviews	Elaborating promotion interviews	BB	1		42
V	Telephonic Interview	Understanding the process of telephone interview	BB	1		43
V	Exit Interviews	Knowledge on exit interviews	BB	1		44
V	Exercise On Interview Skills	Interview skills	BB	1		45
V	Promotion Interview	Process of promotion interview	BB	2		47
V	Case Study On Interviews	Job interviews in pharmaceutical industry	LCD	1		48
V	Case Study On Presentations	Presentation skills	LCD	1		49
V	Web Conferencing	Concept of web conferencing	LCD	1		50
V	Video Conferencing	Understanding video conferencing	LCD	1		51
V	Tele Conferencing	Knowing about tele conferencing	BB	1		52
V	Case Study On Web Conferencing	Web conferencing implementation	LCD	1		53
V	Visual Communication	Understanding objectives of visual communication	LCD	2		55
V	Visual Communication	Understanding process of visual communication	BB	1		56
V	Key Skills For Interviews	Understanding key skills for interviewers	LCD	1		57
V	Audio Communication	Evaluating audio communication	BB	2		59
V	Communication Exercises	Skills required for attending interviews	LCD	1		60

K. Ramana

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III SEMESTER

Lesson Plan

Academic Year: 2018-2019 (4/7MS)
Year & Semester: II Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS213Logistics & Supply Chain Management
Name of Faculty: Dr.Sk.Mabunni

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)
				L	T	
I	Introduction To Logistics	Understanding the basics of logistics	BB	1		1
I	Logistics Concepts	Understanding the concept of logistics	BB	1		2
I	Logistics Relationships	Identifying the relationships of logistics	BB	2		4
I	Mission Of Logistics Management	Elaborating the mission statement of logistics	BB	1		5
I	Objectives Of Logistics Management	Understanding the objectives of logistics	BB	1		6
I	Components Of Logistics Management	Describing the components of logistics management	BB	1		7
I	Mission Statements Of Logistics	Understanding the mission of logistics	BB	2		9
I	Logistics And Supply Chain	Concept of supply chain	BB	1		10
I	Objectives Of Logistics	Understanding the objectives of logistics	BB	1		11
I	Supply Chain Introduction	Introductory concept of supply chain	BB	1		12
I	Definitions Of Supply Chain	Understanding supply chain definitions	BB	1		13
I	Importance Of Supply Chain	Evaluate the importance of supply chain	BB	1		14
I	Issues In Supply Chain Management	Knowing issues in supply chain	BB	1		15
I	Supply Chain Drivers	Understanding drivers of supply chain	BB	1		16
II	Customer Service And Elements Of Customer Service	Introduction of customer service and its elements	BB	1		17
II	Service Driven Logistics System	Understanding service driven logistics system	BB	1		18
II	Customer Focus In Supply Chain Management	Discussed on customer focus in supply chain	BB	1		19
II	Case Study on customer service	Customer service with an example	BB	1		20
II	Customer Satisfaction And Concept Of Benchmarking	Understanding the concept of bench marking	BB	1		21
II	Process And Benefits Of Benchmarking	Understanding the process of bench marking	BB	1		22
II	Competitive Bench Marking	Discussing competitive bench marking	BB	1		23
III	Need For Integration	Identifying the need for integration	BB	1		24
III	Managing Supply Chain As A Network, Logistics Partnerships	Describing supply chain as a network	BB	2		26

III	Supply Chain Restructuring	Restructuring the supply chain	BB	1		27
III	Agile Supply Chain	Describing agile supply chain	BB	1		28
III	Role Of IT In Supply Chain	Understanding the role of IT in supply chain	BB	1		29
III	IT In Supply Chain	Understanding IT in supply chain	BB	1		30
IV	Sourcing Decisions, In Sourcing And Outsourcing	Concept of in sourcing and outsourcing		1		31
IV	Sourcing Process And Sourcing Strategies	Process of sourcing and understanding strategies	BB	1		32
IV	Warehousing Decisions	Knowing warehousing decisions	BB	1		33
IV	Transportation Decisions	Understanding transportation decisions	BB	1		34
IV	Material Handling	Understanding the concept of material handling	BB	1		35
IV	Packaging	Concept of packaging	BB	2		37
V	Global Supply Chain, Competitive Global Supply Chain	Concept of global supply chain	BB	1		38
V	Global Logistics Management, Global Supply Chain Management	Understanding logistics operations at global level	BB	1		39
V	Global Logistics And Global Supply Chain, Components Of Global Supply Chain	Components of global supply chain	BB	1		40
V	Global Logistics Process	Describing global logistics process	BB	1		41
V	Managing Global Logistics	Discussing managing global logistics	BB	1		42
V	Global Supply Chain Vs Domestic Supply Chain	Understanding the domestic vs global supply chain	BB	1		43
V	Trend Towards Globalization In The Supply Chain	Knowing trends towards globalization in supply chain	BB	1		44
V	Problems Of Global Logistics And Supply Chain Management	Understanding problems of global logistics and supply chain	BB	1		45
V	Challenges Of Global Logistics And Supply Chain Management	Describing the challenges of GLSCM	BB	2		47
V	Problems And Challenges Of Glscm	Problems and challenges of GLSCM	BB	1		48
V	Case Study on GLSCM	Discussing GLSCM with an example	BB	1		49

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LESSON PLAN

Academic Year: 2018-2019(Y17MS)
Year & Semester: II Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS211Strategic Management
Name of Faculty: Dr.A.V.S.Ashok

Unit . No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
UNIT I	Introduction to Strategic Management	Importance of strategy in business	BB	1		1		
	Concepts in Strategic Management	Concept of business strategy	BB	2		3		
	Strategic Management as a process	Process of strategic management	BB	1		4		
	strategic vision	What is an ideal Vision for a business	BB	1		5		
	Mission, Objectives, Policies	Various dimensions of Mission, Objectives, Policies	BB	1		6		
	Factors that influence a company's strategy	Factors that shape a company's strategy	BB	1		7		
	Crafting a strategy	Processes involved in Crafting a strategy	BB	1		8		
	Industry and Competitive Analysis.	How Industry competition is to be aligned with strategy	BB	2		10		
UNIT II	Environmental Scanning	Scanning the business environment	BB	1		11		
	Leadership,styles	Leadership and its role in strategy	BB	1		12		
	Methods of SWOT Analysis	Strengths Weakness Opportunity Threats	BB	1		13		
	Strategies and competitive advantages	Strategy and various competitive advantages	BB	2		15		
	Strategies analysis and choice	Strategic choice	BB	1		16		
	Tools and techniques	Strategic units Tools and techniques	BB	2		18		
	Strategic Leadership Actions	Strategic Leadership	BB	2		20		

	Developing Human Capital and Social Capital	Types of evaluating jobs	BB	1		21		
	Balanced Scorecard	Compensation management and Compensation design based on job	BB	2		23		
UNIT III	Strategy Formulation	Linking strategy to management	BB	1		24		
	Porter's Value Chain Analysis	Competitive Advantage of a Firm, Entry and Exit Barriers	BB	1		25		
	Strategy Formulation at various levels	Formulation of strategy at corporate level, business and functional levels	BB	2		27		
	Types of Strategies	Various Types of Strategies	BB	2		29		
	Strategic fit	restructuring and diversification strategies	BB	2		31		
	Turnaround Strategy	One important Types of Strategy	BB	1		32		
UNIT IV	Strategy Implementation	Strategy Implementation	BB	1		33		
	Strategy and Structure	Strategy and Structure	BB	1		34		
	Leadership and culture	Leadership, culture and its impact on management policy	BB	1		35		
	Global Strategic connection	Strategies for competing in Globalizing markets	BB	1		36		
	internet economy	internet economy in strategic management	BB	1		37		
	Organizational Values	Organizational Values and their Impact on Strategy	BB	2		39		
	Resource Allocation	Planning systems for implementation of resources	BB	1		40		
UNIT V	Strategy Evaluation and control	Establishing strategic controls	BB	2		42		
	Measuring performance	Strategic performance	BB	2		44		
	Appropriate measures	appropriate measures in strategy	BB	1		45		
	Role of the strategist	strategist role in control	BB	1		46		
	Qualitative and Quantitative Benchmarking	using qualitative and quantitative benchmarking to evaluate performance	BB	2		48		
	Strategic Information Systems	MIS in Strategic management	BB	1		49		
	Strategic Control	Problems in measuring performance	BB	1		50		
	Strategic Surveillance -Strategic Audit.	How to use Strategic Surveillance and Strategic Audit.	BB	2		52		

	Strategic perspective	Overview of evaluation and control	BB	1		53		
	CASE STUDY		LCD	7		60		

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LESSON PLAN

Academic Year: 2018-2019 (Y17MS)
Year & Semester: II Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS214 Financial Markets and Services
Name of Faculty: Dr.B.K.Surya Prakasha Rao

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Syllabus And Introduction	To familiarize with basic concepts of Financial system	BB	1		1		
I	Narasimham Committee, Features Of Finance System	To understand Narasimham Committee, Features Of Finance System	BB	1		2		
I	Structure Of Indian Financial System	To understand Structure Of Indian Financial System	BB	2		4		
I	Functions Of Financial System	To evaluate Functions Of Financial System	BB	1		5		
I	Role Financial System In Economic Development	To understand Role Financial System In Economic Development	BB	1		6		
I	Reforms In Financial Sector In India	To understand Reforms In Financial Sector In India	BB	2		8		
I	Major Steps In Economic Reforms Taken By Gvt Of India	To analyze Major Steps In Economic Reforms Taken By Gvt Of India	BB	1		9		
II	Financial Sector Reforms-reforms In Money Market	To analyze Financial Sector Reforms-reforms In Money Market	BB	1		10		
II	Reforms In Capital Markets And Services	To understand Reforms In Capital Markets And Services	BB	2		12		

II	Role Of Sebi On Indian Financial System	To understand Role Of Sebi On Indian Financial System	BB	1		13		
II	Structure Of Indian Financial Markets	To understand Structure Of Indian Financial Markets	BB	1		14		
II	Structure Of Money Markets, Role Of Money Marker In Economic Development	To analyze Structure Of Money Markets, Role Of Money Marker In Economic Development	BB	1		15		
II	Instruments In Money Market	To analyze Instruments In Money Market	BB	2		17		
II	Forex Market, Features Of Forex Market, Instruments In Forex Market	To understand Forex Market, Features Of Forex Market, Instruments In Forex Market	BB	1		18		
II	Structure Of Capital Market, Instruments In Capital Market	To understand Structure Of Capital Market, Instruments In Capital Market	BB	1		19		
II	Methods Of Raising Funds From Primary Market	To identify the Methods Of Raising Funds From Primary Market	BB	1		20		
II	Issue Of Adrs And Gdrs	To understand the Issue Of Adrs And Gdrs	BB	1		21		
II	Sebi Guidelines On Public Issues	To understand Sebi Guidelines On Public Issues	BB	1		22		
II	Operational Mechanism Of Stock Markets, Types Of Brokers	To analyze Operational Mechanism Of Stock Markets, Types Of Brokers	BB	2		24		
II	Functions Of Stock Markets, Sebi Regulation On Stock Exchanges	To evaluate Functions Of Stuck Markets, Sebi Regulation On Stock Exchanges	BB	1		25		
III	Introduction To Financial Services, Scope Of Financial Services, Treasury Market, Fund And Fee Based Services	To evaluate Scope Of Financial Services, Treasury Market, Fund And Fee Based Services	BB	1		26		
III	Role Of Financial Services In Economic Development	To understand role Of Financial Services In Economic Development	BB	2		28		

III	Problems Of Financial Services In India	To evaluate Problems Of Financial Services In India	BB	2		30		
III	Introduction To Mutual Funds, Growth And Development Of Mutual Funds	To identify Growth And Development Of Mutual Funds	BB	1		31		
III	Features Of Mutual Funds	To understand Features Of Mutual Funds	BB	1		32		
III	Problems Of Mutual Fund, Mutual Funds In India	To evaluate Problems Of Mutual Fund, Mutual Funds In India	BB	2		34		
III	Sebi Guideline On Mutual Funds, Managing Mutual Funds	To understand Sebi Guideline On Mutual Funds, Managing Mutual Funds	BB	1		35		
III	Sebi Requirements For Amc	To identify Sebi Requirements For Amc		1		36		
IV	Introduction To Merchant Banking, Comparision With Commercial Banks, Investment Banks	To understand Commercial Banks, Investment Banks And Development Banks		1		37		
IV	Functions of Merchant Banking	To evaluate Functions of Merchant Banking		2		39		
IV	Code Of Conduct For Merchant Bankers, Problems Of Merchant Bankers	To analyze Code Of Conduct For Merchant Bankers, Problems Of Merchant Bankers		2		41		
IV	Features Of Credit Rating, Functions Of Credit Rating	To identify Features Of Credit Rating, Functions Of Credit Rating		2		43		
IV	Instruments For Rating, Credit Rating Process	To evaluate Instruments For Rating, Credit Rating Process		1		44		
IV	Rating Methodology Credit Rating Agencies In India. Crisil Objectives And Functions	To understand Rating Methodology Credit Rating Agencies In India. Crisil Objectives And Functions		2		46		
IV	Rating Symbols Of Crisil, Icra Objectives And Rating Services	To understand Rating Symbols Of Crisil, Icra Objectives And Rating Services		1		47		

IV	Sebi Guidelines On Credit Rating Agencies. Code Of Conduct On Credit Rating Agencies	To understand Sebi Guidelines On Credit Rating Agencies. Code Of Conduct On Credit Rating Agencies		2		49		
IV	Introduction Of Factoring ,meaning, Types and Functions of Factoring	To evaluate Types and Functions of Factoring		2		51		
IV	Rbi Guideline On Factoring , Factoring Vs Forfaiting , Factoring Vs Bill Discounting	To evaluate Rbi Guideline On Factoring , Factoring Vs Forfaiting , Factoring Vs Bill Discounting		1		52		
IV	Introduction To Securitization, Definition, Application Of Debt Securitization	To understand Securitization, Definition, Application Of Debt Securitization		2		54		
V	Debt Securitisation Process, Securitisation Vs Factoring. Introduction To Venture Capital Finance	To understand Debt Securitisation Process, Securitisation Vs Factoring. Introduction To Venture Capital Finance		2		56		
V	Meaning ,concept, Definition Of Venture Capital Financing.functions Of Venture Capital Financing	To understand Meaning ,concept, Definition Of Venture Capital Financing.functions Of Venture Capital Financing		2		58		
V	Activities of Venture Capital Financing, Origin, Growth And Development Of Venture Capital Financing , Methods Of Venture Capital Financing In India	To understand Activities of Venture Capital Financing, Origin, Growth And Development Of Venture Capital Financing , Methods Of Venture Capital Financing In India		2		60		

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LESSON PLAN

Academic Year: 2018-2019 (Y17MS)
Year & Semester: II Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS215 Financial Derivatives
Name of Faculty: D.Chakradhar

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Syllabus And Introduction	To familiarize with basic concepts of Financial Markets	BB	2		2		
I	Financial Derivatives	To know about the Financial Derivatives,	BB	2		4		
I	Products and Participants in Derivative Markets	To understand the products and Structure Of Indian Financial markets.	BB	3		7		
I	Forward Contracts Vs. Future Contracts	To find the difference between trading pattern of two different products and their attributes	BB	3		10		
I	Financial Derivatives - Derivatives Trading in India.	To understand the policies and regulations for trading in derivatives	BB	2		12		
II	Futures and Forwards: Meaning, Importance, Futures Exchanges Market Participants	To find the difference between trading pattern of two different products and their attributes and participants in Forwards as well as futures	BB	2		14		
II	Clearing House and Margins	To know the process and Structure of Settlements done by the exchanges	BB	2		16		
II	Futures Pricing – Stock Index Futures	To analyze the pricing of futures and indexed futures in the market	BB	2		18		
II	Hedging strategy Using Future	To understand what is hedging and its implications	BB	4		22		
II	Basic Principle, Arguments for and Against Hedging	To understand the Hedging, how to hedge and aware of risk	BB	1		23		

II	Basic Risk, Minimum Variance Hedge Ratio, Hedging through Stock Index Futures	To analyze the Risk Variance and safe guard the Investment proportion	BB	2		25		
III	Options Contracts: Call and Put Options	To understand the concept of products in derivatives of different products and their attributes	BB	1		26		
III	Determinants of Option Price – Stock and Index Option Properties and Mechanics	To understand the concept of products in derivatives of different products and their attributes	BB	2		28		
III	Options Trading in India	To understand trading system in India	BB	1		29		
III	Option Trading Strategies: Basic of Option Positions	To analyze the position i.e long (or)short and apply the strategies of Hedging	BB	3		32		
III	Strategies involving Options – Covered Call, Protective Put, Spread, Combinations and Other Strategies.	To analyze the position i.e long (or)short and apply the strategies of Hedging	BB	3		35		
IV	Options Valuation: Binomial Options Pricing Model	To understand the valuation of options by using Binomial model and its attributes by game theory approch	BB	5		40		
IV	The Black-Scholes Options Pricing Model – Log-normal Property of Stock Prices	To understand the valuation of options by using Black – Scholes model and its attributes by replication of portfolio	BB	6		46		
IV	Swaps: Currency Swaps – The Structure of Swaps - Interest Rate Swaps - Equity Swaps – Valuation of Financial Swaps - Credit Derivatives – Caps and Floors.	To analyze exchange mechanism of financial products i.e from fixed to float and various products in SWAPS	BB	4		50		
V	Hedging Using Greeks (Delta-Gamma Hedging)	To evaluate Hedging using Greeks	BB	1		51		
V	Hedging with Futures	To evaluate Strategies of hedging, speculation and arbitrage	BB	1		52		
V	Index Options and futures, VaR, Historical Simulations	To understand the simulations and Value at Risk	BB	2		54		

V	Management of Derivatives Exposure: Introduction, nature of derivatives trading, setting of Risk vision, reasons for managing derivatives risk and types of risk in derivative trading.	To understand Derivatives Exposure	BB	6		60		

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Date:

LESSON PLAN

Academic Year : 2018-2019 (Y17MS)
Year & Semester : II Year, I Semester
Branch : M.B.A
Subject Code & Name : MS214-3, Product and Brand Management
Name of Faculty : Dr.K.SURYANARAYANA

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Concept Of Product Management	Understanding product management	BB	1		1		
I	classifications of product - Fast Moving Consumer Goods (FMCG),	To know the various types of products and the concept of FMCG		1		2		
I	FMCG From Markets Perspective	Market perspective of FMCG	BB	1		3		
I	Product Analysis	To understand the analysis of products	BB	2		5		
I	Product Life Cycle(PLC)	To know the role of product and brand management (PBM) in PLC	BB	1		6		
I	Market Potential	To assess the market potential of the product	BB	2		8		
I	Element And Methods Of Product Positionong	Product positioning	BB	2		10		
I	New Product Development And Launching Strategies	To understand the new product development and launching strategies	BB	3		13		

II	Concept Of Product Mix And Product Line	To know the concept of product mix and product line	BB	3		16		
II	Product Line Extensions	Product line extensions	BB	2		18		
II	Elements And Methods Of Positioning	To know the elements and methods of positioning	BB	2		20		
II	Positioning Strategy	To understand positioning strategies	BB	3		23		
II	Developing Positioning Strategy	Developing a positioning strategy	BB	1		24		
III	Concept and Definition Of Brand, Brand And Firm	To know the concept of Brand and the relation between brand and firm	BB	1		25		
III	Brands And Consumers, Brand Identity	To understand brand and consumers and the identity of brand	BB/	2		27		
III	Brand Image, identity, Protecting Brand	Protecting a brand and the identity	BB	2		29		
III	Band Perspectives And Brand Levels	Brand levels and perspectives	BB	1		30		
III	Brand Evolution And Brand Building	To know the brand evolution and brand building	BB	1		31		
III	Concept of brand equity	To understand the concept of brand equity	BB	1		32		
III	Consumer/customer based brand equity	To know the customer based brand equity	BB	2		34		
III	Brand Value	Creating brand value	BB	1		35		
IV	Brand Creation	To know the techniques in brand creation	BB	1		36		
IV	Brand Extension	Extension of brand	BB	1		37		
IV	Brand, Product relation	To understand relation between	BB	1		38		

		product and brand						
IV	Brand Portfolio and Revitalization	Brand portfolio and revitalization	BB	1		39		
IV	Brand development through mergers and acquisitions, portfolio revitilization	To Understand brand development through mergers, acquisitions through portfolio revitilization	BB	2		41		
IV	Brand licensing, franchising	To understand brand licensing and franchising	BB	3		44		
IV	role of packaging and labeling in building brand	To know the role of packaging and labeling in building a brand	BB	2		45		
V	Brand Loyalty	To understand the techniques in brand loyalty	BB	3		48		
V	Brand Equity	To know about brand equity	BB	2		50		
V	Brand Personality	To understand the brand personality	BB	1		51		
V	Brand loyalty and Loyalty programs	To understand the brand loyalty and the programs	BB	1		52		
V	Building Global Brands	To understand the techniques in building brands	BB	1		53		
V	Branding Failures	To know the failures of the branding	BB	2		55		
V	Brand Extension Strategies	To understand the brand extension strategies	BB	1		56		
V	Brand Positioning – 3Cs of Positioning	To position the brand using 3 c's	BB	2		58		
V	Competitive Positioning	To understand the competitive positioning	BB	2		60		

K. Ramya
Signature of the Faculty

Signature of the HOD:
Date:

LESSON PLAN

Academic Year: 2018-2019 (Y17MS)
Year & Semester: II Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS215M Consumer Behaviour and Customer Relationship Management
Name of Faculty: Mr.P.Siddardha

Unit . No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
	Syllabus and Course Outcomes	To understand the overview of syllabus	BB	1		1		
I	**UNIT – I** Consumer Behavior Introduction	To understand basic concepts of Consumer Behaviour	BB	1		2		
I	Consumer Behavior Concept	To understand basic concepts of Consumer Behaviour	BB	1		3		
I	Understanding Consumers	To understand consumer needs and problems	BB	1		4		
I	Market Segmentation	To identify different segments of market	BB	2		6		
I	Consumer Environment	To analyze issues of consumer environment	BB	1		7		
I	Business Strategies	To understand basic business strategies	BB	2		9		
I	Organizational Buyer Behavior Models	To evaluate basic models of organizational buyer behaviour	BB	2		11		
I	OB Models	To evaluate basic models of organizational behaviour	BB	2		13		
II	**UNIT – II** Motivation	To be familiar with motivation elements	BB	2		15		
II	Perception	To evaluate concepts of perception	BB	2		17		

II	Personality	To identify the personality traits	BB	2		19		
II	Learning	To analyze basic learning theories	BB	2		21		
II	Attitude	To evaluate stages of attitude formation	BB	2		23		
II	Social And Cultural Factors	To analyze various social and cultural factors	BB	1		24		
II	Personal Factors	To analyze various personal factors	BB	2		26		
II	Social Stratification	To understand the basic concepts of social stratification	BB	2		28		
III	**UNIT – III** Communication, Persuasion	To understand the process of communication	BB	1		29		
III	Innovation	To identify the process of innovation	BB	2		31		
III	Innovation Diffusion	To understand diffusion effect on innovation	BB	2		33		
III	Adoption	To evaluate adoption process	BB	2		35		
III	Consumer Decision Making And Types	To analyze consumer decision making process	BB	2		37		
III	Pre - Purchase And Post - Purchase Decisions	To differentiate between pre and post purchase decisions	BB	2		39		
IV	**UNIT – IV** C R M	To understand the basic concepts of CRM	BB	2		41		
IV	C R M Types And C R M Measurement	To evaluate types of CRM	BB	2		43		
IV	C R M Measurement, C R M Survey	To understand concepts of CRM Survey	BB	2		45		
IV	C R M Survey Design	To identify the stages of CRM Design	BB	2		47		
IV	C R M Statistical Analysis	To analyze statistical issues of CRM	BB	2		49		
IV	10 Ways To Use Customer Results	To identify the ways to use customer survey results	BB	2		51		
IV	Case Study	To analyze the situations in an organization	BB	3		54		

V	**UNIT – V** Relationship Management	To understand the concepts of Relationship Management	BB	2		56		
V	Relationship Strategies	To evaluate different relationship strategies	BB	2		58		
V	Relationship Partnership	To understand the concepts of customer partnership	BB	2		60		

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Date:

LESSON PLAN

Academic Year: 2019-2020 (Y17MS)
Year & Semester: II Year I Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS215H Organization Change and Development
Name of Faculty: Mr.P.Siddardha

Unit. No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
	Syllabus and Course Outcomes	To understand the overview of syllabus	BB	1		1		
I	**UNIT – I** Organizational Change issues	To understand basic concepts of Organizational Change	BB	2		3		
I	Organizational Change dimensions	To understand dimensions of Organizational Change	BB	2		5		
I	Organizational Change factors	To evaluate factors of Organizational Change	BB	2		7		
I	Change Agents	To identify the change agents	BB	3		10		
I	O C Models	To analyze various Organizational Change Models	BB	8		18		
II	**UNIT – II** Resistance To Change	To identify the reasons for resistance to change	BB	2		20		
II	Overcoming Resistance To Change	To identify measures to overcome resistance to change	BB	2		22		
II	Change Process	To understand the change process	BB	2		24		
II	Job Redesigning	To be familiar with Job redesigning process	BB	2		26		

II	Socio - Technical Systems	To evaluate various socio – technical systems	BB	2		28		
III	**UNIT – III** Organizational Development	To understand the concepts of Organizational Development	BB	3		31		
III	History Of O D, Foundation Of O D	To understand the historical aspects of Organizational Development	BB	2		33		
III	O D Models	To evaluate various Organizational Development Models	BB	2		35		
III	Systems Theory, Empowerment	To understand the concepts of Systems Theory, Empowerment	BB	2		37		
IV	**UNIT – IV** O D Interventions	To evaluate various Organizational Development Interventions	BB	8		45		
IV	Designing O D Interventions	To identify the process of designing Organizational Development Interventions	BB	2		47		
IV	Case Study	To analyze the situations in an organization	BB	3		50		
V	**UNIT – V** Research In O D	To evaluate research process in Organizational Development	BB	2		52		
V	Customer - Client Relationship	To analyze customer – client relationship	BB	2		54		
V	Mechanistic V/s Organistic Culture	To identify differences between mechanistic and Organistic cultures	BB	2		56		
V	O D Future	To analyze the future of Organizational Development	BB	2		58		
V	O D Failure	To identify the reasons for failure of Organizational Development	BB	2		60		

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Date:

IV SEMESTER

	Case Study	Remember the concepts in IB	LCD	1		12		
II	Global Business and Regulations	Understand the Regulation in Global Business	BB	1		13		
	Rationale for Government Intervention	Gain knowledge in Gvt Interventions in IB	BB	1		14		
	Forms of Trade Regulation at National Level	Evaluating the Trade Regulations at national Level	BB	1		15		
	Tariff Barriers	Identify the Tariff Barriers	BB	1		16		
	Non-Tariff Barriers	Identify the Non tariff Barriers	BB	1		17		
	Multilateral Trade Negotiations Structure	Apply the structure of Multilateral Trade Negotiations	BB	1		18		
	Multilateral Trade Negotiations Functions	Analyze the functions of Multilateral Trade Negotiations	BB	1		19		
	GATT	Understanding the structure and functions of Gatt	BB	1		20		
	World Trade Organization	Understanding the structure and functions of Gatt	BB	1		21		
	TRIPs and TRIMs	Apply the knowledge in TRIPs and TRIMs	BB	1		22		
	UNCTAD	Understand the concept of UNCTAD	BB	1		23		
	Economic Integration,	Understand the functioning of EI	BB	1		24		
	Major trading blocs; EU	Understand Major Trade Blocks on IB	BB	1		25		
	NAFTA, ASEAN	Understand the concept and Functioning of NAFTA and ASEAN	BB	1		26		
	SAARC	Understand the concept of SAARC	BB	1		26		
	Case study	Remembering the concept GB Regulations	BB	1		27		
III	Global Business Strategies	Create the strategies in Global Business	BB	1		28		

LESSON PLAN

Academic Year: 2018-2019 (Y17MS)
Year & Semester: II Year II Sem
Branch: MBA
Subject Code & Name: MS 221 International Business
Name of Faculty: Dr.M.Manjusha

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Review/ Remarks (By HOD)
				L	T			
1	**UNIT - I** International Business an Overview:	Understand the concept of IB	BB	1		1		
	Concept of International Business	Understanding	BB	1		2		
	IB Model	Evaluating the Models of IB	BB	1		3		
	Stages of International Business	Identify the Sages in IB	LCD	1		4		
	Impact and implications of Globalization	Know the impact of globalization	LCD	1		5		
	International Business Environment – Economic	Analyze the International Business Economic Environment	BB	1		6		
	International Business Environment – Political, Legal	Analyze the international business political and legal environment	BB	1		7		
	International Business Environment – Demographic	Analyze the International Business Demographic environment	BB	1		8		
	International Business Environment – Socio and Cultural environment	Analyze the International Business Socio cultural Environment	BB	1		9		
	International trade theories.	Gain knowledge in International Trade Theories	BB	1		10		
	International trade theories.	Gain knowledge in International Trade Theories	BB	1		11		

	Global Market entry strategies	Evaluate the Global Market Entry strategies	BB	1		29		
	Exporting and its procedure	Apply the Procedure of Exporting mode in IB	BB	1		30		
	Licensing and its procedure	Apply the Procedure of Licensing mode in IB	BB	1		31		
	Franchising and Its procedure	Apply the Procedure of Franchising mode in IB	BB	1		32		
	Contract Manufacturing	Evaluate the process of contract manufacturing	BB	1		33		
	Strategies for Growth: Startups	Create the Strategies for Growth	BB	1		34		
	Mergers	Understand the Mergers process in IB	BB	1		35		
	Acquisitions and Takeover	Understand the Acquisition and takeover process in IB	BB	1		36		
	Joint Ventures	Understand the Joint Venture process in IB	BB	1		37		
	Strategic Alliances – Turnaround Market strategies	Understanding the Strategic alliances	BB	1		38		
	Assembly & Integrated local Manufacturing	Understanding the Integrated Local Manufacturing	BB	1		39		
	Recent Case Studies.	Remembering the concepts in GB strategies	BB	1		40		
IV	Foreign Exchange and global Business.	Understand the Foreign Exchange and Global Business	BB	1		41		
	Foreign Exchange Markets	Apply the knowledge in Foreign exchange Markets	LCD	1		42		
	Foreign Exchange market mechanism;	Analyze the Forex Mechanism	BB/ LCD	1		43		
	Exchange rate determination	Analyze the foreign exchange Determination	BB/ LCD	1		44		
	Exchange rate determination	Analyze the foreign exchange Determination	BB	1		45		
	Disequilibrium in BOP,	Understand the concept in Disequilibrium on BOP	BB	1		46		

	Methods of Correction in disequilibrium in BOP	Evaluate the Methods of Correction in Disequilibrium in BOP	BB	1		47		
	Methods of Correction and its effect on Global Business	Evaluate the Methods of Correction in Disequilibrium in BOP	BB	1		48		
V	Global Business Operations: Global Manufacturing Management	Understand the Global Business Operations	BB	1		49		
	Strategy, Make or Buy Decisions	Create the strategy and make or buy Decisions	BB	1		50		
	Global Marketing Management, Globalization of Markets	Apply the knowledge in Global Marketing management the Globalization of Markets	BB	1		51		
	Market Segmentation; Distribution strategy; Pricing Strategy	Evaluate the concept of market Segmentation and the concept of Distribution and Pricing Strategy	BB	1		52		
	Performance appraisal	Apply the Performance appraisal concept in global HRM	BB	1		53		
	Global HRM – Staffing policy, Compensation	Evaluate the Global HRM and Staffing Policy & Compensation	BB	1		54		
	Global E-Business, E-Enabled Business	Analyze the E- Business and E-Business activities	BB	1		55		
	Process transformation and challenges,	Understand the process transformation and challenges in GB	BB	1		56		
	E – Logistics	Apply the knowledge in E-Logistics	BB	1		57		
	E – Logistics and its role,	Apply the knowledge in E-Logistics and its Role	BB	1		58		
	Case study on Amazon	Remember the concepts in Global manufacturing and Services	BB	1		59		
	Case study on Alibaba	Remember the concepts in Global manufacturing and Services	BB	1		60		

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LESSON PLAN

Academic Year : 2018-2019 (Y17MS)
Year & Semester : II YEAR II SEMESTER
Branch : M.B.A
Subject Code & Name : MS 223 F (R17) INTERNATIONAL FINANCIAL MANAGMENT
Name of Faculty : Dr.K.SURYANARAYANA

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
1	**UNIT - I** Overview of International financial management(IFM)	To understand the overview of International financial management	BB	1		1		
2	Introduction	To know the scope of IFM in the era of globalization	BB	2		3		
3	Goals of International Finance	To understand the goals of IFM	BB	1		4		
4	Evolution of exchange rates	To know the stages in the evolution of international finance	BB	3		7		
5	Gold Standards, Bretton Wood System,	Gold Standards, Bretton Wood System,	BB	2		9		
6	Scope of International Finance he flexible exchange rate regime	To understand the concept of flexible exchange rate system	BB	2		11		
7	Scope of International Finance The current rate arrangements	The current exchange rate arrangements	BB	3		14		

8	**UNIT – II** Foreign Exchange Nature	Nature of foreign exchange	BB	1		15		
9	Functions and Participants	Functions and Participants	BB	1		16		
10	Exchange Rate Mechanism and Determination	Mechanism and Determination	BB	3		19		
11	Exchange Rate Mechanism and Determination Purchasing power parity theory for determining exchange rates	Purchasing power parity theory	BB	1	1	20		
12	Interest rate parity for determining exchange rates	Interest rate parity theory	BB	2		22		
13	covered and uncovered interest parity	covered and uncovered interest parity	BB	1		23		
14	Fixed vs Flexible exchange rate mechanism	exchange rate mechanism	BB	2		25		
15	Multinational Financial Institutions & Markets	Financial Institutions	BB	2		27		
16		Financial Markets	BB	2		29		
17	**UNIT – III** Balance of Payments (BoP)	Balance of Paymets	BB	2		31		
18	Fundamentals of BoP	Fundamentals	BB	2		33		
19	Accounting components of BOP	Accounting component of BOP	BB	2		35		
20	Factors affecting International Trade flows and exchange rates	Factors affecting exchange rates	BB	1		36		

21	International flow of funds risks and management	Risks and management of international flow of funds	BB	2		38		
22	Transaction, translation	Transaction and Translation exposure	BB	2		40		
23	Economic, political and taxation risks	Economic, political and taxation risks and management	BB	1		41		
24	risk management strategies	strategies	BB	2		43		
26	**UNIT - IV** International project appraisal techniques	Project Appraisal techniques	BB	2		45		
27	Adjusted present value	APV	BB	2		47		
28	Risks in cross border investment decision	Risks in cross border investment decisions	BB	2		49		
29	cost of capital for foreign investments	Cost of capital	BB	2		51		
30	financing decisions of global firm	financing decisions of global firm	BB	1		52		
31	Case studies of various companies.		BB	2		54		
32	**UNIT - V** Short term Asset-Liability Management	Introduction	BB	1		55		
33	Multinational Financial Markets International cash management	International cash management	BB	1		56		
34	Multinational Financial Markets Accounts management,	Accounts management	BB	1		57		
35	receivables management,	receivables management	BB	1		58		
36	Inventory Management	Inventory Management	BB	1		59		
37	financing strategies of working capital	financing strategies of working capital	BB	1		60		

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Date:

LESSON PLAN

Academic Year: 2018-2019 (Y17MS)
Year & Semester: II Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS224 Security Analysis and Portfolio Management
Name of Faculty: Dr.B.K.Surya Prakasha Rao

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Introduction To Syllabus, Introduction To Investment And Its Meaning	To familiarize with basic concepts of To Investment	BB	2		2		
I	Definitions, Importance Of Investment	To understand Definitions, Importance Of Investment	BB	1		3		
I	Characteristics Of Investment, Steps In Investment Process	To understand Characteristics Of Investment, Steps In Investment Process	BB	1		4		
I	Why Investments? Objectives Of Investment, Security Market Players, Investment Avenues	To evaluate Objectives Of Investment, Security Market Players, Investment Avenues	BB	2		6		
I	Issue Of Securities, Ipos Types Of Issues, Distingusish Between Nim And Nifty	To understand Issue Of Securities, Ipos Types Of Issues, Distingusish Between Nim And Nifty	BB	2		8		
I	Principles Steps Of Public Issue, Central Listing Authority	To understand Principles Steps Of Public Issue, Central Listing Authority	BB	2		10		

I	Listing Of Securities, Advantages Of Listing Management View And Sh Point Of View, Listing Is It A Legal Requirement?	To analyze advantages of Listing Management View And Sh Point Of View, Listing Is It A Legal Requirement?	BB	2		12		
II	General Requirement For Listing	To analyze General Requirement For Listing	BB	2		14		
II	Book Building Concept, Process, Book Building Options	To understand Book Building Concept, Process, Book Building Options	BB	2		16		
II	Book Building Guidelines, Limitations Of Book Building, Reverse Book Building, Sebi Guidelines	To understand Book Building Guidelines, Limitations Of Book Building, Reverse Book Building, Sebi Guidelines	BB	2		18		
II	Introduction To Market Indices, Origin Of Bse Sensex, Sensex Calculation, Calculation Methodology	To understand Market Indices, Origin Of Bse Sensex, Sensex Calculation, Calculation Methodology	BB	2		20		
II	Index Clossure, algorithm, Maintenance Of Index, Replacement Of Securities	To analyze Index Clossure, algorithm, Maintenance Of Index, Replacement Of Securities	BB	2		22		
II	Risk In Investment Management, Risk Elements, Characterstics of Risk	To analyze Risk In Investment Management, Risk Elements, Characterstics of Risk	BB	2		24		
II	Measurement Of Risk, Calculation Of Arithematic Mean, Variance	To understand Measurement Of Risk, Calculation Of Arithematic Mean, Variance	BB	2		26		
II	Systematic And Unsystematic Risk, Measurement Of Risk and Risk Calculation	To understand Systematic And Unsystematic Risk, Measurement Of Risk and Risk Calculation	BB	2		28		

II	Practical Problems On Risk And Return	To identify Practical Problems On Risk And Return	BB	2		30		
II	Measurement Of Return, Arithematic Mean, Geometric Mean, Return Relative, Cumulative Wealth Index And Real Return	To understand Measurement Of Return, Arithematic Mean, Geometric Mean, Return Relative, Cumulative Wealth Index And Real Return	BB	2		32		
II	Problems On Risk And Return	To understand Problems On Risk And Return	BB	2		34		
II	Bond valuation	To analyze Bond valuation	BB	1		35		
II	Holding Period Return, Spot Interest Rate, Yield To Maturity, Introduction To Equity Valuation	To evaluate Holding Period Return, Spot Interest Rate, Yield To Maturity, Introduction To Equity Valuation	BB	2		37		
II	Equity Valuation Through Present Value Models	To evaluate Equity Valuation Through Present Value Models	BB	2		39		
II	Multiple Year Holding Period Return, Dividend Discount Models	To understand Multiple Year Holding Period Return, Dividend Discount Models	BB	2		41		
II	Zero Growth Model, Constant Growth And Variable Growth Models	To evaluate Zero Growth Model, Constant Growth And Variable Growth Models	BB	2		43		
II	Problems On Zero, Constant And Variable Growth Rate	To identify Problems On Zero, Constant And Variable Growth Rate	BB	2		45		
III	Approaches To Security Analysis-fundamental Analysis: Three Step Process	To understand Approaches To Security Analysis-fundamental Analysis: Three Step Process	BB	2		47		
III	Economic Analysis, Industry Analysis And Company Analysis	To evaluate Economic Analysis, Industry Analysis And Company Analysis	BB	1		48		

III	Introduction To Technical Analysis And Assumptions	To understand Technical Analysis And Assumptions	BB	1		49		
III	Charting Techniques, Resistance And Support Levels And Importance Of Charting Techniques	To identify Charting Techniques, Resistance And Support Levels And Importance Of Charting Techniques		1		50		
III	Dow Theory And Its Assumptions	To understand Dow Theory And Its Assumptions		1		51		
III	Elliot Wave Theory, Relative Strength Index, Breadth Of Index	To evaluate Elliot Wave Theory, Relative Strength Index, Breadth Of Index		1		52		
IV	Introduction To Portfolio Analysis And Selection-measurement Of Portfolio Return And Risk	To analyze Portfolio Analysis And Selection-measurement Of Portfolio Return And Risk		1		53		
IV	Modern Portfolio Theory Of Markowitz, Assumptions And Problems	To identify Modern Portfolio Theory Of Markowitz, Assumptions And Problems		1		54		
IV	Sharpe's Single Index Model, capital asset pricing model (CAPM)	Sharpe's Single Index Model, capital asset pricing model (CAPM)		1		55		
V	Methods of Portfolio Evaluation – Sharpe's, Treynor's and Jensen's measures of portfolio performance evaluation -	To understand Methods of Portfolio Evaluation		2		57		
V	Fama's decomposition of portfolio return	To understand Fama's decomposition of portfolio return		2		59		
V	Portfolio Revision: Need, Constraints, Strategies.	Portfolio Revision: Need, Constraints, Strategies.		1		60		

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Date:

LESSON PLAN

Academic Year: 2018-2019 (Y17MS)
Year & Semester: II Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS225 Foreign Exchange Management
Name of Faculty: D.Chakradhar

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Syllabus And Introduction	To familiarize with basic concepts of Foreign Exchange Markets	BB	2		2		
I	Sources and Uses of Foreign Exchange	To understand the Sources and Uses of Foreign Exchange	BB	2		4		
I	Functions of Foreign Exchange Market	To understand the Functions of Foreign Exchange Market	BB	3		7		
I	Role of FEDAI and other Market Participants. in Foreign exchange Business	To understand the role if FEDAI and its participants	BB	3		10		
II	Concept and different types of Exchange	To understand Concept and different types of Exchange	BB	2		12		
II	Foreign Exchange rate determination	To understand Foreign Exchange rate determination	BB	2		14		
II	Foreign Exchange Rates and Quotations	To know Foreign Exchange Rates and Quotations	BB	2		16		
II	LERMS	To know about the Liberalized Exchange Rate Management System	BB	2		18		
II	Determination of Exchange rates – Spot Rates, Forward Exchange rates, FOREX Contracts	To analyze the exchange rates	BB	4		22		

II	Convertibility of Indian Rupee: Measuring and Managing Foreign Exchange Exposure	To know the risk associated with FOREX	BB	1		23		
II	Transaction Exposure	To know the risk associated with FOREX	BB	1		24		
III	Operating Exposure	To know the risk associated with FOREX	BB	1		25		
III	Accounting Exposure	To know the risk associated with FOREX	BB	4		26		
III	Interest Rate Exposure	Interest Rate Exposure	BB	1		27		
III	Foreign exchange transactions – Purchase and Sale transaction,	To Know Foreign exchange transactions – Purchase and Sale transaction,	BB	3		30		
III	Spot v/s Forward transaction, Forward Margins	To Know Spot v/s Forward transaction, Forward Margins	BB	2		32		
III	Factors determining Forward Margins and SWAPS	To know Factors determining Forward Margins and SWAPS	BB	3		35		
IV	Role of Banks in FOREX Market: Functions of FOREX Department	To Understand Role of Banks in FOREX Market Functions of FOREX Department	BB	3		38		
IV	Inter Bank Deals, Cover Deal	To Understand Inter Bank Deals, Cover Deals	BB	4		42		
IV	Maintenance of Foreign Currency Accounts: NRI – NRO, NRE Liberalized Remittance Scheme	To understand how to maintain the foreign accounts	BB	4		46		
IV	Exchange Earners Foreign Currency Accounts (EEFC), Foreign Currency Accounts for SEZ (FCY)	To understand EEFC & FCY	BB	4		50		
V	FEMA and its Philosophy	To understand FEMA and its Philosophy	BB	2		52		
V	Role of RBI in regulating Foreign Exchange business of bank	To understand Role of RBI in regulating Foreign Exchange business of bank	BB	2		54		

V	Authorized dealers	To understand Role of RBI in regulating Foreign Exchange business of bank/Dealers		1		55		
V	NRI Customers and Various banking and investment products available to them under FEMA	To know NRI Customers and Various banking and investment products available to them under FEMA		5		60		

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Lesson Plan - SPDM

Academic Year: 2018-2019 (4/7 MS)
Year & Semester: II Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS224MSales Promotion & Distribution Management
Name of Faculty: Dr.Sk.Mabunni

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)
				L	T	
I	Concept of Sales Management	Introduce the concept of sales to attain profits to the organization	BB	1		1
I	Nature And Scope Of Sales Management	Understands the nature of sales and its broad scope	BB	1		2
I	Nature And Scope Of Sales Management	Understands the nature of sales and its broad scope	BB	1		3
I	Objectives Of Sales Management	Identify different objectives of sales people in an organization	BB	1		4
I	Functions Of Sales Management	Understand various functions of Sales management	BB	1		5
I	Responsibilities And Duties Of Sales Manager	Knows the duties and responsibilities of sales managers.	BB	1		6
I	Responsibilities And Duties Of Sales Manager	Knows the duties and responsibilities of sales managers.	BB	1		7
I	Relationship With Top Management And Salesman	Attain the relationship with top management and salesman	BB	1		8
I	Coordinating And Controlling Marketing Mix	Understand the procedures of controlling marketing mix	BB	1		9
I	Trends & Challenges	Gain different trends and challenges in doing sales	BB	1		10
I	Selling Through Different Media	Understand the media through sales can be done effectively	BB	1		11
I	Selling Through Different Media	Understand the media through sales can be done effectively	BB	1		12
II	Sales Promotion Definition And Role	Defining sales promotion and understand its role in marketing	BB	1		13
II	Types, Consumer Sales Promotion	Know different types of sales promotion and consumer sales promotion	BB	1		14
II	Dealer Display Contests And Discount	Understand various dealer contests and discounts offered by organizations	BB	1		15

II	Bonus Offers, Retail Merchandise Techniques	Gain knowledge on techniques of retail merchandising	BB	1		16
II	Bonus Offers, Retail Merchandise Techniques	Gain knowledge on techniques of retail merchandising	BB	1		17
II	Retail Merchandising Techniques	Knowing retail merchandising techniques	BB	1		18
II	Retail Merchandising Techniques	Knowing retail merchandising techniques	BB	1		19
II	Publicity Advantages And Disadvantages	Define publicity and knows advantages and disadvantages of publicity	BB	1		20
II	Public Relations Campaign	Designing public relations campaign	BB	1		21
II	Process Of Public Relations	Step by step procedure of public relations	BB	1		22
II	Use Of Press, Radio And TV	Using press, Radio and TV in promotion of products	BB	1		23
II	Use Of Press, Radio And TV	Using press, Radio and TV in promotion of products	BB	1		24
II	Customer Service And Community Service	Understanding customer service and community service	BB	1		25
III	Sales Force Job Analysis And Description	Analyzing Sales Job	BB	1		26
III	Recruiting The Sales Personnel	Sources of recruitment of sales force	BB	1		27
III	Recruiting The Sales Personnel	Process of recruitment of sales force	BB	1		28
III	Selecting The Sales Personnel	Know the process of selecting the sales force	BB	1		29
III	Training The Sales Personnel	On the job methods to train the sales force	BB	1		30
III	Training The Sales Personnel	off the job methods to train the sales force	BB	1		31
III	Compensating The Sales People	Understanding salary, incentives, bonuses offered to sales force	BB	1		32
III	Case Study	Analyzing the case	BB	1		33
III	Essentials Of Good Compensation Plan	Requisites for good compensation plan	BB	1		34
III	Motivating The Sales Personnel	Methods to motivate the sales force	BB	1		35
III	Motivating The Sales Personnel	Methods to motivate the sales force	BB	1		36
III	Need For Achievement, Maslow's Need Hierarchy Theory	Maslow's need theory of motivation applied to sales jobs	BB	1		37
III	Sales People Career Development Cycle	Steps involved in sales force career	BB	1		38
III	Sales People Need Analysis And Sales Manager's Tasks For Motivation	Understanding tasks motivating the sales people	BB	1		39
III	Sales Territories, Factors	Dividing market into territories	BB	1		40
III	Sales Territories, Factors	Dividing market into territories	BB	1		41
III	Sales Territory Design, Goals And Adjustments	Know the goals of each sales territory	BB	1		42
III	Sales Quotas	Understanding different types of quotas	BB	1		43
III	Sales Quotas	Understanding different types of quotas	BB	1		44
III	Sales Budgets, Format And Process	Know the procedure of preparing sales budget	BB	1		45

III	Role Of Distribution In Marketing Mix, Marketing Channel Structure	Understand the marketing channel structure	BB	1		46
IV	Functions And Relationships Of Channels Of Distribution, Channel Dynamics And Conflicts	Know the relationships of channels of distribution	BB	1		47
IV	Functions And Relationships Of Channels Of Distribution, Channel Dynamics And Conflicts	Know the relationships of channels of distribution	BB	1		48
IV	Channel Planning, Org Patterns Of In Marketing Channels, Channel Design Process And Decisions	Understand the process of channel design	BB	1		49
IV	Channel Planning, Org Patterns Of In Marketing Channels, Channel Design Process And Decisions	Understand the process of channel design	BB	1		50
IV	Wholesaling, Types Of Wholesalers	Knowledge on types of wholesalers	BB	1		51
IV	Wholesaling, Types, Wholesale Marketing Decisions	Understand the wholesaler decisions	BB	1		52
IV	Retailing, Types, Retail Marketing Decisions	Types of retailers and their decisions	BB	1		53
IV	Retailing, Types, Retail Marketing Decisions	Types of retailers and their decisions	BB	1		54
V	Vertical Marketing System, Horizontal Marketing System	Understand channel dynamics	BB	1		55
V	Vertical Marketing System, Horizontal Marketing System	Understand channel dynamics	BB	1		56
V	Multi Channel Marketing System	Information on multi channel marketing system	BB	1		57
V	Channel Conflict And Management	Arise of channel conflicts	BB	1		58
V	Channel Conflict And Management	Arise of channel conflicts	BB	1		59
V	Channel Control	Controlling the channel	BB	1		60

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LESSON PLAN

Academic Year: 2018-2019(Y17MS)
Year & Semester: II Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS224H Performance& Compensation Management
Name of Faculty: Dr.A.V.S.Ashok

Unit . No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
UNIT I	Performance Management	Importance of performance management	BB	1		1		
	Introduction - Concept and Objectives	Concept of performance	BB	2		3		
	Prerequisites, Principles	Principles of Performance	BB	1		4		
	Characteristics of an Ideal PM Systems	What is an ideal performance system	BB	1		5		
	Dimensions of Performance Management	Various dimensions of performance	BB	1		6		
	Factors Affecting Performance Management	Factors which affect performance of employees	BB	1		7		
	Performance Management Process	Processes involved in measuring performance	BB	1		8		
	Performance Management and Strategic Planning	How performance is to be aligned with strategy	BB	2		10		
	Performance Management and Performance Appraisal Concept	Performance appraisal and potential appraisal of employees	BB	2		12		
	Appraisal Practices in India	Various appraisal practices in India	BB	1		13		
UNIT II	Compensation Management	Introduction to Compensation management	BB	1		14		
	Foundation of Compensation Management	Foundations of Compensation management	BB	1		15		
	Need , Significance	Need and Significance of Compensation management	BB	1		16		

	Economic Theories of Compensation	Theories of Compensation management	BB	2		18		
	Job Analysis	Types of analyzing Job	BB	2		20		
	Job Evaluation	Types of evaluating jobs	BB	2		22		
	Compensation and Job Design	Compensation management and Compensation design based on job	BB	2		24		
UNIT III	Performance Linked Compensation	Linking performance to Compensation management	BB	1		25		
	Managing Performance	Performance management	BB	1		26		
	Rewarding Performance	Incentivizing and	BB	1		27		
	Incentive Schemes/Payment-By-Result	Rewarding Performance	BB	2		29		
	Wage-Design	Wage design	BB	1		30		
	Wage-Fixation	fixation	BB	1		31		
	Wage Differentials	And Differentials	BB	1		32		
	Team Based Compensation	Team and Compensation management	BB	1		33		
UNIT IV	Compensation Policy	Compensation management and policy	BB	2		35		
	Compensation at Macro	Country level Compensation management policies	BB	1		36		
	Industry's Compensation Policy	Industry level Compensation management policies	BB	1		37		
	Retirement Plans	Retirement plans	BB	1		38		
	Voluntary Retirement Scheme	And various voluntary retirement schemes	BB	1		39		
	International Compensation Management	International Compensation management policies	BB	2		41		
UNIT V	Compensation Administration	Compensation Administration	BB	1		42		
	Wage boards	Minimum wage boards	BB	2		44		
	pay commission	Pay methods	BB	1		45		
	Pay budget management	Pay budget management	BB	1		46		
	Executive Compensation	Compensation management for Executives	BB	2		48		
	Nature of Executive Compensation	Compensation management	BB	1		49		
	Managing executive compensation	Compensation management for Executives	BB	1		50		

	Compensation management	Compensation management and strategic perspective	BB	2		52		
	Strategic perspective	Compensation management And strategic perspective Executives	BB	1		53		
	CASE STUDY		LCD	7		60		

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LESSON PLAN

Academic Year: 2018-2019 (Y17MS)
Year & Semester: II Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS225M Services and Retail Marketing
Name of Faculty: Mr.P.Siddardha

Unit. No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
	Introduction With Students	To familiarize with specializations	BB	1		1		
	Syllabus and Course Outcomes	To understand the overview of syllabus	BB	1		2		
I	**UNIT – I** Service	To understand basic issues of Service	BB	2		4		
I	Services Concepts	To understand basic concepts of Service	BB	2		6		
I	Why Services	To identify the need of services	BB	1		7		
I	Services Marketing	To understand basic concepts of Services Marketing	BB	2		9		
I	Services Marketing In India	To identify the services marketing growth in India	BB	2		11		
I	Service And Technology, Gaps	To understand gaps between service and technology	BB	2		13		
I	Service Marketing Mix, Characteristics	To evaluate characteristics of Services Marketing Mix	BB	2		15		
I	Service Positioning	To understand basic concepts of Services Positioning	BB	3		18		
I	Service Branding, Service Development Process	To identify the process for Service Development	BB	2		20		
II	**UNIT – II** Consumer Behavior, Expectations	To evaluate consumer behaviour expectations	BB	2		22		
II	Customer Perception Strategies	To analyze various Customer Perception Strategies	BB	2		24		

II	Understanding Customer Needs	To identify customer needs and problems	BB	2		26		
II	Listening To Customer Needs	To listen to customers ideas	BB	2		28		
II	Elements In Customer Service Research	To identify elements in Customer Service Research	BB	2		30		
II	Customer - Organization Relationship	To understand relationship b/w customer and organization	BB	2		32		
II	Service Recovery	To understand basic concepts of Service Recovery	BB	2		34		
III	**UNIT – III** Service Design	To identify the stages of Service Design	BB	2		36		
III	Service Innovation	To understand basic concepts of Service Innovation	BB	2		38		
III	Service Standards	To analyze various Service Standards	BB	3		41		
IV	**UNIT – IV** Retailing And Its Decisions	To understand the basic concepts of Retailing	BB	1		42		
IV	Retailing Decisions And Types	To analyze various Retailing Decisions	BB	2		44		
IV	Product Retailing Versus Service Retailing	To differentiate between Product Retailing and Service Retailing	BB	2		46		
IV	Types of Retailers	To identify the different types of Retailers	BB	2		48		
IV	Retail Environment	To understand the issues of Retail Environment	BB	2		50		
V	**UNIT – V** Retail Location Types	To evaluate the types of Retail Location	BB	2		52		
V	Integrated Marketing Communication	To analyze the issues of Integrated Marketing Communication	BB	2		54		
V	Integrated Marketing Communication Concepts	To understand the basic concepts of Integrated Marketing Communication	BB	2		56		
V	Integrated Marketing Communication Tools	To analyze the tools of Integrated Marketing Communication	BB	2		58		
V	Case Study	To analyze the situations in an organization	BB	2		60		

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LESSON PLAN

Academic Year: 2018-2019 (Y17MS)
Year & Semester: II Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS225H Human Resource Development: Strategies and Systems
Name of Faculty: Mr.P.Siddardha

Unit. No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB)/ LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
	Introduction With Students	To familiarize with specializations	BB	1		1		
	Syllabus and Course Outcomes	To understand the overview of syllabus	BB	1		2		
I	**UNIT – I** H R D	To understand basic issues of HRD	BB	2		4		
I	H R D Introduction, Concept	To understand basic concepts of HRD	BB	1		5		
I	H R D Goals	To identify the goals of HRD	BB	2		7		
I	H R D Importance	To understand the importance of HRD	BB	1		8		
I	H R D Challenges	To analyze the challenges of HRD	BB	3		11		
I	HRD at Micro And Macro Levels	To differentiate HRD at Micro and Macro levels	BB	2		13		
I	H R D Climate	To understand the need for good HRD Climate	BB	2		15		
I	H R D Process	To evaluate the steps in HRD Process	BB	2		17		
I	Role Of H R D Manager	To identify the role of a HRD Manager	BB	2		19		
I	H R D Matrix	To understand the structure of HRD	BB	1		20		
II	**UNIT – II** H R D Needs	To understand the needs of HRD	BB	1		21		
II	H R D Needs Assessment	To understand the need for HRD needs assessment	BB	1		22		
II	Designing H R D Program	To evaluate the process for Designing H R D Program	BB	3		25		
II	Implementing H R D Program	To evaluate the process for Implementing H R D Program	BB	3		28		

II	Evaluating H R D Program	To evaluate the process for Evaluating H R Program	BB	3		31		
III	**UNIT – III** Career and Career Development	To understand the need for Career Development	BB	2		33		
III	Balanced Scorecard	To identify the model of Balanced Scorecard	BB	2		35		
III	Quality Of Work Life, Quality Circles	To understand the concepts Quality Of Work Life, Quality Circles	BB	2		37		
III	Employee Engagement	To evaluate the techniques for Employee Engagement	BB	2		39		
III	Management Development	To analyze the process for Management Development	BB	2		41		
IV	**UNIT – IV** Human Capital Development	To understand the concepts of Human Capital Development	BB	2		43		
IV	Human Capital Life Cycle Development	To identify the model of Human Capital Life Cycle Development	BB	2		45		
IV	H R Audit	To understand the need for Human Resources Audit	BB	2		47		
IV	H R D Scoreboard	To identify the model of H R D Scoreboard	BB	2		49		
IV	H R D & O D	To evaluate the differences between H R D & O D	BB	2		51		
V	**UNIT – V** H R D In Organizations	To identify the role of HRD in organizations	BB	2		53		
V	H R D Outsourcing	To understand the concepts of H R D Outsourcing	BB	3		56		
V	Global Developments Of H R D	To evaluate the global developments of HRD	BB	2		58		
V	Implications Of H R D	To identify the implications of HRD	BB	2		60		

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LESSON PLAN

Academic Year : 2019-2020 (Y18MS)
Year & Semester : I Year, II Semester
Branch : M.B.A
Subject Code & Name : MS122 & Research Methodology and Business Analytics
Name of Faculty : Dr.K.SURYANARAYANA

S. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Meaning and Importance of Research	Understanding meaning and Importance of Research	BB	1		1		
I	Nature and Scope of Research Methodology	To know the Nature and Scope of Research Methodology	BB	2		3		
I	Research Process	Understanding Research Process	BB	2		5		
I	Research Objectives	Understanding Research Objectives	LCD	1		6		
I	Types of Research	To Know the types of Research	BB	2		8		
I	Defining Research Problem	Identifying Research Problem	BB	2		10		
I	Formulation of Hypothesis – Testing of Hypothesis	Formulation of Hypothesis – Testing of Hypothesis	BB/ LCD	3		13		
II	Research Design – Exploratory Research – Descriptive Research – Casual Research	Research Design – Exploratory Research – Descriptive Research – Casual Research	BB/LCD	3		17		

II	Sampling and Sampling Desig	To understand the Sampling and Sampling Design	LCD	2		19		
II	Sampling Methods – Simple Random Sampling – Stratified Sampling	TO understand the methods of sampling	LCD	2		21		
II	Systematic Sampling – Cluster Sampling – Multistage Sampling, Non – Probability Sampling – Convenience Sampling	Systematic Sampling – Cluster Sampling – Multistage Sampling, Non – Probability Sampling – Convenience Sampling	BB	3		25		
II	Judgement Sampling – Quota Sampling	Judgement Sampling – Quota Sampling	BB	1		26		
III	Data Collection – Primary and Secondary Data —,–and clustering methods	Data Collection – Primary and Secondary Data —,–and clustering methods	BB	1		27		
III	Designing of Questionnaire	Questionnaire design.	BB	2		29		
III	Measurement and Scaling – Nominal Scale – Ordinal Scale – Interval Scale – Ratio Scale	Measurement and Scaling – Nominal Scale – Ordinal Scale – Interval Scale – Ratio Scale	BB	2		31		
III	Guttmann Scale – Likert Scale – Schematic Differential Scale	Guttmann Scale – Likert Scale – Schematic Differential Scale	BB	1		32		
III	Contemporary developments- Advanced techniques of data analysis: ANOVA – Discriminate analysis	Contemporary developments- Advanced techniques of data analysis: ANOVA – Discriminate analysis	BB/ LCD	2		34		
III	factor analysis – conjoint analysis – multi dimensional scaling	factor analysis – conjoint analysis – multi – dimensional scaling	BB	3		37		
IV	Meaning and Importance of business analytics	To know the meaning and Importance of business analytics	BB/ LCD	1		39		
IV	Evolution – role in functional areas	To understand the Evolution and role of Business Analytics in	BB/ LCD	1		40		

		functional areas						
IV	Data for Business Analytics	Role of Data in Business Analytics	BB	1		41		
IV	Data reliability and validity	To assess the Data reliability and validity	BB	2		43		
IV	Analysis of Data – Introduction to SPSS	Analysis of Data – Introduction to SPSS	BB	3		46		
IV	Uses of SPSS.	Understanding SPSS	BB	2		48		
V	Business Analytics as Solution for Business Challenges –	Business Analytics as Solution for Business Challenges –	BB	3		52		
V	Master Data Management	Master Data Management	BB/ LCD	2		54		
V	Data Warehousing	Data Warehousing – Data Mining	BB/ LCD	1		55		
V	Data Mining	Concepts of Data Mining	BB	1		56		
V	Meta Data – Data Marts –	Meta Data – Data Marts –Data Integration	BB/ LCD	2		58		
V	Data Integration	To understand Data Integration	BB/ LCD	1		59		
V	Concept of OLTP and OLAP.	To understand the differences between OLTP and OLAP and the concepts	BB/ LCD	1		60		

K. Saravanan
Signature of the Faculty

Signature of the HOD:
Date:

LESSON PLAN

Academic Year: 2019-2020 (Y19 MS)
Year & Semester: II Year II Sem
Branch: MBA
Subject Code & Name: MS 123 Human Resource Management
Name of Faculty: Dr.M.Manjusha

Unit No.	Topic of syllabus to be covered	Learning Out comes	Teachin Mode BB/ OHP/ LCD	Hours Required Lecture(L) / Tutorial(T)		Total number of Hours(cumulative)	Expected date of Topic to be covered	Review/ Remarks (By HOD)
				L	T			
I	Introduction Human Resource Management	Understand the basic concepts in Human Resource Management	BB	1		1		
	Nature & significance of HRM	Understand the Nature and Significance of HRM	BB	1		2		
	Personnel Management Vs HRM	Analyze the differences between Personnel management and HRM	BB	1		3		
	Functions of HRM	Understand the functions of Management	LCD	1		4		
	Qualities HR Manager	Evaluate the Qualities of HR Manager	BB	1		5		
	Role of HR Manager	Evaluate the role of HR Manager	BB	1		5		
	HRM in a changing Environment	Understanding concept of the HRM role in a changing Environment	BB	1		7		
	Job Analysis	Analyzing the concept of Job analysis	BB	1		8		
	Objectives of Job analysis	Understanding the Objectives of Job Analysis	BB	1		9		
	Methods of Job Analysis	Identify the methods on Job analysis	BB	1		10		
	Line and Staff responsibility	Creating the Line and Staff Responsibility	BB	1		11		

	Case Study	Remembering the relevant Knowledge in HRM basic Concepts	BB	1		12		
II	Human Resource Planning	Understanding the process HR Planning	BB	1		13		
	Human Resource Planning Objectives	Identify the Objectives of HR planning		1		14		
	Human Resource Planning process	Evaluate the process of HRP	LCD	1		15		
	Factors affecting HR Planning	Identify the factors affecting the HR Planning	BB	1		16		
	Requisites for successful HR Planning.	Analyzing the requisites for Successful HRP	BB	1		17		
	Recruitment Definition, Process of Recruitment	Understanding the definition, meaning and process of Recruitment		1		18		
	Purpose of Recruitment.	Identify the purpose of recruitment	BB	1		19		
	Factors influencing the Recruitment	Identify the Factors influencing the Recruitment	BB	1		20		
	Sources of Recruitment	Identify the Sources of recruitment	BB	1		21		
	Selection Process and its Significance	Understanding the selection process, importance and its significance	LCD	1		22		
	Placement and Induction	Understanding the concept of Placement and induction	BB	1		23		
	Training and Socialization	Evaluating the training and socialization process in HRM	BB	1		24		
	Case Study	Remembering the concepts related to HRP, Recruitment and Selection	BB	1		25		
III	Development and Performance Management	Understanding the development and Performance Management	BB	1		26		
	Objectives of Training and need for providing Training	Identify the objectives of training and need for providing training	BB	1		27		

	Methods of Training	Evaluating the methods of training	BB	1		28		
	Training Procedure	Identify the Training Procedure	BB	1		29		
	Evaluating Effectiveness of Training	Apply the knowledge in evaluating the effectiveness of Training	BB	1		30		
	Management Development Programme	Understanding the concept of Management Development Programme	BB	1		31		
	Performance Appraisal Significance	Analyze the significance of performance Appraisal		1		32		
	Objectives of Performance Appraisal	Identify the Objectives of Performance appraisal	BB	1		33		
	Methods of Performance Appraisal	Evaluate the Methods of performance appraisal	BB	1		34		
	developing and administering an Appraisal programme	Identify the developing and administering an appraisal Programme	BB	1		35		
	Limitations to its effectiveness.	Identify the limitations o its effectiveness	BB	1		36		
	Post Appraisal Feedback	Evaluate the post Appraisal Feedback	BB	1		37		
IV	Job Evaluation	Understanding the concept of Job Evaluation	BB	1		38		
	Significance of Job Evaluation	Identify the Importance of Job Evaluation	BB	1		39		
	Methods of Job Evaluation	Understanding the Methods of Job Evaluation	BB	1		40		
	Job evaluation and its Problems	Analyzing the problems in Job evaluation	BB	1		41		
	Career Planning and Development	Understanding the concepts in career Planning development	BB	1		42		
	Concept of Counseling	Understanding the concept of counseling		1		43		

seling	Evaluate the Need of Counseling	BB	1		44		
nseling	Identify the Process of Counseling	BB	1		45		
f Counseling	Understanding the significance of Counseling	BB	1		46		
In counseling	Identify the elements in Counseling	BB	1		47		
procedure	Understand the concept of Disciplinary Procedure	BB	1		48		
rocedure.	Evaluate the Grievance procedure	BB	1		49		
Vork Life (QWL)	Understanding the concept of Quality of Work Life	BB	1		50		
id Meaning of QWL	Creating an idea about QWL	BB	1		51		
of QWL	Identify the Conditions of QWL	BB	1		52		
ues in QWL	Analyze the Specific issues in QWL	BB	1		53		
r improvement of QWL	Identify the Strategies ti improve QWL	BB	1		54		
ole of HR	Understand the concept of changing role of HR in QWL	BB	1		55		
unting	Understand the HRM Accounting	BB	1		56		
ation Systems	Understand HRIS	BB	1		57		
	Identify the concept of HR Audit	BB	1		58		
wledge Era	Create HR in Knowledge Era	BB	1		59		
	Remembering the QWL Issues in specific organisation	BB	1		60		

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LESSON PLAN

Academic Year: 2019-2020 (Y19MS)
Year & Semester: I Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS124 Financial Management
Name of Faculty: Dr.B.K.Surya Prakasha Rao

Unit. No	Topic of syllabus to be covered	Learning Out comes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours(cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
I	Introduction, Over View Of Financial Management	To familiarize with basic concepts of Financial Management	BB	1		1		
I	Definition , Scope And Importance Of Financial Management	To understand Definition , Scope And Importance Of Financial Management	BB	1		2		
I	Objectives Of Financial Management, Wealth Maximisation And Profit Maximisation.	To understand Objectives Of Financial Management	BB	2		4		
I	Criticism On Profit Maximisation, Wealth Maximisation Concept	To understand Criticism On Profit Maximisation	BB	1		5		
I	Criticism On Wealth Maximisation, Distinguish Between Profit Maximisation And Wealth Maximisation	To evaluate Profit Maximization And Wealth Maximization	BB	1		6		
I	Modern Concept Of Financial Management	To understand Modern Concept Of Financial Management	BB	2		8		

I	Time Value Of Money, Concept, Rationality, Time Preference Rate, Compound Value Of Money	To understand Time Value Of Money	BB	2				
I	Present Value Of Money , Annuity And Lump-sum	To understand Present Value Of Money , Annuity And Lump-sum	BB	1		11		
I	Agency Conflict, Conflict Between Owners And Management	To analyze Conflict Between Owners And Management	BB	2		13		
II	Measures To Overcome The Conflict Between Owners And Management Team, Conflict Between Owners And Creditors, How To Overcome Conflict Between Them	To understand Measures To Overcome The Conflict Between Owners And Management Team	BB	1		14		
II	Overview Of Capital Budgeting Decisions	To understand Overview Of Capital Budgeting Decisions	BB	1		15		
II	Definition, Significance, importance And Areas Of Capital Budgeting Decisions	To understand Definition, Significance, importance And Areas Of Capital Budgeting Decisions	BB	2		17		
II	Steps In Capital Budgeting Process, Evaluation Techniques, Traditional Methods And DCF Techniques	To analyze Steps In Capital Budgeting Process	BB	1		18		
II	Traditional Methods, Pay Back Period And Accounting Rate Of Return. Advantages And Disadvantages Of Traditional Methods	To analyze Traditional Methods, Pay Back Period And Accounting Rate Of Return	BB	2		20		

II	DCF Techniques, Net Present Value And Profitability Index. Advantages And Disadvantages Of DCF Techniques	To understand DCF Techniques, Net Present Value And Profitability Index. Advantages And Disadvantages Of DCF Techniques	BB	1		21		
II	Introduction To Capital Rationing And Its Process	To understand Capital Rationing And Its Process	BB	1		22		
II	Problems And Solutions On Capital Rationing	To identify the Problems And Solutions On Capital Rationing	BB	2		24		
II	Solutions For University Question Papers	To understand the Solutions For University Question Papers	BB	1		25		
II	Risk Analysis In Capital Budgeting, Various Methods In Risk Adjustment	To understand the Risk Analysis In Capital Budgeting	BB	2		27		
II	Traditional Methods And Mathematical Techniques, Radar And CV	To analyze Traditional Methods And Mathematical Techniques, Radar And CV	BB	1		28		
II	Standard Deviation And CV Concept And Process	To evaluate Standard Deviation And CV Concept And Process	BB	1		29		
II	Probability Assignment And CV Problems And Solutions	To evaluate Probability Assignment And CV Problems And Solutions	BB	1		30		
II	EBIT And EBT Analysis	To understand EBIRT And EBT Analysis	BB	1		31		
III	Degree Of Financial Leverage, Operating Leverage And Combined Leverage	To evaluate the Degree Of Financial Leverage	BB	1		32		
III	Solutions For University Question Papers On Leverage	To identify Solutions For University Question Papers On Leverage	BB	1		33		
III	NOI Approach Assumptions And Problems	To understand NOI Approach Assumptions And Problems	BB	2		35		

III	Problems, Criticism. Introduction To Ni Approach	To evaluate Problems, Criticism. Introduction To Ni Approach	BB	1		36		
III	Ni Approach Assumptions, Problems And Criticisms	To understand Ni Approach Assumptions, Problems And Criticisms	BB	2		38		
III	Intermediate Approach - 3 Stages, Relevance And Relevance, Introduction To Mm Hypothesis	To identify the Intermediate Approach - 3 Stages		1		39		
III	Assumptions Of Mm Hypothesis, Arbitrage Process	To understand the assumptions Of Mm Hypothesis, Arbitrage Process		2		41		
III	Problems On Mm Hypothesis And Criticism	To understand problems On Mm Hypothesis And Criticism		1		42		
III	Introduction To Cost Of Capital, Concept, Significance Of Cost Of Capital, Cost Of Equity	To analyze Cost Of Capital, Concept, Significance of Cost Of Capital, Cost Of Equity		1		43		
III	Cost Of Debt, Cost Of Preference Shares, Cost Of Retained Earnings	To evaluate Cost Of Debt, Cost Of Preference Shares, Cost Of Retained Earnings		1		44		
III	Concept Of Weighted Average Cost Of Capital, Problems On WACC	To identify the concept Of Weighted Average Cost Of Capital, Problems On WACC		1		45		
III	Question Papers From University Exams	To evaluate Question Papers From University Exams		1		46		
IV	Concept, Meaning And Significance Of Dividend Decisions	To understand Concept, Meaning And Significance Of Dividend Decisions		1		47		

IV	Introduction To Dividend Theories, Assumptions Of Walters Dividend Model	To understand Dividend Theories, Assumptions of Walters		2		49		
IV	Criticism On Walters Model And Formulas For Calculation Of Market Price Of The Share, Factors Determining Dividend Policy	To analyze Formulas For Calculation Of Market Price Of The Share, Factors Determining Dividend Policy		1		50		
IV	Problems On Gardens Model And Criticism, Assumptions Of Mm Hypothesis And Irrelevance Approach	To evaluate problems On Gardens Model And Criticism, Assumptions Of Mm Hypothesis And Irrelevance Approach		2		52		
V	Concept Of Working Capital, Types Of Working Capital, Operating Cycle	To evaluate Concept Of Working Capital, Types Of Working Capital, Operating Cycle		1		53		
V	Approaches For Working Capital Financing, Components Of Working Capital, Determinants Of Working Capital Requirements	To understand Approaches For Working Capital Financing, Components Of Working Capital		2		55		
V	Approaches For Working Capital Financing, Components Of Working Capital	To understand Approaches For Working Capital Financing, Components Of Working Capital		2		57		
V	Receivables Management, Objectives, Goals Of Rm, Credit Policy Variables, Credit Standards, Evaluation Of Investments In Accounts Receivables, Optimum Credit Policy	To analyze Goals Of Rm, Credit Policy Variables, Credit Standards, Evaluation Of Investments In Accounts Receivables, Optimum Credit Policy		2		59		

V	Managing Cash And Marketable Securities, Facets Of Cash Management, Motives For Holding Cash, Factors Influencing Cash Balances, Investments In Marketable Securities	To understand Marketable Securities, Facets Of Cash Management, Motives For Holding Cash, Factors Influencing Cash Balances, Investments In Marketable Securities		1		60		

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Date:

LESSON PLAN

Academic Year: 2019-2020 (Y19MS)
Year & Semester: I Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS125 Marketing Management
Name of Faculty: Mr.P.Siddardha

Unit . No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
	Introduction Of Syllabus, Course Outcomes	To understand the overview of syllabus	BB	1		1		
I	**UNIT – I** Marketing Introduction	To understand basic concepts of Marketing	BB	2		3		
I	Marketing Importance And Functions	To evaluate the functions of Marketing	BB	2		5		
I	Marketing Management	To understand basic concepts of Marketing Management	BB	1		6		
I	Marketing Management Tasks, Marketing Environment	To evaluate basic concepts of Marketing Management and to evaluate its environment	BB	2		8		
I	Understanding Customers, Company Orientation Towards Market Place	To analyse customers problems and needs and company orientation towards it	BB	1		9		
I	Adopting Marketing Practices, Industrial Marketing	To be familiar with basic marketing practices	BB	1		10		
I	Services Marketing, Global Marketing	To evaluate types of marketing	BB	1		11		
I	E Marketing, Tele Marketing, Social Marketing	To evaluate types of marketing	BB	1		12		
I	Rural Marketing	To evaluate types of marketing	BB	2		14		
I	Cause Marketing, Emotional Marketing	To evaluate types of marketing	BB	1		15		

II	**UNIT – II** Marketing Information System, Consumer Behaviour	To understand the basic marketing in[illegible]nation system	BB	2		17		
II	Marketing Information System, Consumer Behaviour	To understand the basic marketing information system	BB	1		18		
II	Organizational Buyer Behaviour	To evaluate organization buyer behaviour	BB	2		20		
II	Market Segmentation	To understand various segments of marketing	BB	2		22		
II	Target Marketing	To analyse the target markets segments	BB	1		23		
II	Marketing Research & Types	To understand research issues in marketing	BB	3		25		
II	Marketing Audit	To understand concepts of Marketing Audit	BB	2		27		
II	Case Study	To Analyse the situations in an organization	BB	1		28		
III	**UNIT – III** Marketing Mix, Product Mix	To evaluate 4P's of Marketing	BB	1		29		
III	Product Positioning	To understand how to position a product in market	BB	1		30		
III	Product Differentiation	To evaluate how to differ a product from competitors	BB	3		33		
III	Consumer Adoption Process	To understand process for Consumer Adoption	BB	2		35		
III	New Product Development	To identify the stages in New Product Development	BB	1		36		
III	Branding	To evaluate concepts of Brand	BB	2		38		
III	Packaging	To understand basic concepts of Packaging	BB	2		40		
IV	**UNIT – IV** Pricing	To understand the concepts of Pricing	BB	1		41		
IV	Setting Price	To analyse the process for setting Price	BB	1		42		
IV	Adopting Price	To analyse the process for adopting Price	BB	1		43		
IV	Pricing Methods	To evaluate the different types of Pricing	BB	2		45		
IV	Channels Of Distribution, Value Networks	To understand models of channels of Distribution	BB	1		46		

IV	Channel Dynamics, Distribution Strategies	To evaluate various distribution ategies	BB	2		48		
IV	Supply Chain Management	To understand basic concepts of Supply Chain Management	BB	1		49		
V	**UNIT – V** Marketing Communication Mix	To evaluate the concepts of Marketing Communication Mix	BB	1		50		
V	Advertising	To analyse the advantages and disadvantages of Advertising	BB	2		52		
V	Sales Promotion	To evaluate the methods of Sales Promotion	BB	1		53		
V	Emerging Trends In Marketing	To identify the emerging trends in Marketing	BB	2		55		
V	E - Commerce	To understand the basic concepts of E - Commerce	BB	2		57		
V	Internet Of Things	To evaluate the concepts of Internet Of Things	BB	1		58		
V	Case Study	To Analyse the situations in an organization	BB	1		59		
V	Case Study Analysis	To Analyse the situations in an organization	BB	1		60		

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LESSON PLAN

Academic Year: 2019-2020 (Y19MS)
Year & Semester: I Year II Semester (A Section & B Section)
Branch: Management Sciences
Subject Code & Name: MS126 Production and Operations Management
Name of Faculty: Mr.D.Chakradhar

Unit . No	Topic of syllabus to be covered	Learning Outcomes	Teaching Mode Black Board(BB) / LCD: Power Point Presentation	Hours Required Lecture(L) / Tutorial (T)		Total number of Hours (cumulative)	Expected date of Completion (for each Unit) By HOD	Review/ Remarks (By HOD)
				L	T			
	Introduction Of Syllabus, Course Outcomes	To understand the overview of syllabus	BB	1		1		
I	Overview of Production and Operations Management (POM) Function	Functions of POM	BB	2		3		
	Historical Development of POM	Development of POM	BB	1		4		
	POM scenario Today	Today's Production upgrades	BB	1		5		
	Production Systems	Production Systems	BB	1		6		
	Facilities location	Facilities location	BB	1		7		
	Layout Design	Layout Design	BB	2		9		
	Product and Process Design	Designing of Process and Product	BB	2		11		
	Materials Handling	Handling of Materials	BB	1		12		
	Value Analysis	Value Analysis	BB	2		14		
	Operations Strategy	Operations Strategy	BB	1		15		
II	Projects Planning and Control	PPC	BB	2		17		
	Capacity Planning	Capacity Planning	BB	1		18		
	Scheduling	Problems in scheduling	BB	2		20		
	Assignment and Sequencing of Operations	Problems in Assignment and Sequencing of Operations	BB	2		22		
	Method Study and Work Measurement	Method Study and Work Measurement	BB	2		24		
	Work Sampling.	Work Sampling.	BB	1		25		

III	Need for Maintenance Management	Need for Maintenance Management	BB	2		27		
	Maintenance Alternatives	Maintenance Alternatives	BB	1		28		
	Equipment life cycle	Equipment life cycle	BB	1		29		
	Managing of Work Environment	Managing of Work Environment	BB	1		30		
	Kaizen technique	Working practices and personal efficiency	BB	1		31		
	Waste Management – Safety Management – Reliability Concept	Waste Management – Safety Management – Reliability Concept	BB	2		33		
IV	Material Requirements Planning	MRP Phases	BB	1		34		
	Purchase Management	Purchase Management	BB	2		36		
	Stores Management	Stores Management	BB	2		38		
	Inventory Planning and Control Systems	Inventory techniques with problems	BB	6		44		
	Perpetual Inventory Control System.	Perpetual Inventory Control System.	BB	2		46		
V	Acceptance Sampling - Statistical Quality Control	Quality Circles, charts and Sampling Methods	BB	2		48		
	ISO-9000 Standards	Knowing the Standards of ISO	BB	2		50		
	Economics of Quality Assurance	Quality Assurance	BB	1		51		
	Improvement of Operations	TQM, Six Sigma	BB	4		55		

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Maths

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DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R16

Title of the Course	DIFFERENTIAL EQUATIONS AND STATISTICS
Course Code	ME 101
Year & semester	I/IV Year B.Tech. - Fisrt Semester

Topics	No. of Lectures	Tutorials
UNIT - I		
Differential Equations of First Order		
Definition	1	--
Formation of differential equation	1	1
Equations of first order and first degree	2	
Linear equations.	2	1
Bernoulli's equation.	1	
Exact differential equations	1	
Equations reducible to exact equations	2	1
UNIT - II		
Applications of differential equations of first order:		
Orthogonal trajectories	2	1
Newton's law of cooling	1	1
Growth and Decay Problems	1	1
Higher order Linear Differential Equations		
Definitions	2	--
Operator D–Rules for finding the complementary function	2	1
UNIT - III		
Inverse operator		
Rules for finding Particular Integral	2	--
working procedure	2	2
Method of variation of parameters	1	1
Equations reducible to linear equations with constant coefficients		--
Cauchy's and Legendre's Linear equations.	3	1
UNIT – IV		
Partial Differential Equations		
Formation	1	1
Equations solvable by direct integration	1	1
Linear equations of first order	1	--
Lagrange's linear equation	2	2

Linear Homogeneous partial differential equations of higher order with constant coefficients	**2**	**1**
UNIT – V		
Statistics		
Method of least squares	**2**	
Fitting of straight line and parabola	**2**	
Correlation	**2**	
Co-efficient of correlation (direct method)	**3**	
Lines of regression	**3**	
	44	**16**

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LESSON PLAN
Regulation: R16

Title of the Course	ENGINEERING PHYSICS
Course Code	ME 102
Year & semester	I/IV Year B.Tech. - First Semester

Topics	No. of Lectures	Tutorials
UNIT – I		
Ultrasonics		
Properties	2	--
Production of ultrasonics by magnetostriction	1	1
Piezo electric oscillator methods	1	1
Detection by acoustic grating method	1	1
General applications of ultrasonics in industry and medicine	1	
NDT		
Normal beam pulse echo testing	2	--
Ultrasonic scanner (A & B modes)	2	1
UNIT – II		
Physical Optics		
Interference: Introduction, Stoke's principle (change of phase on reflection)	1	--
Interference in thin films due to reflected light (Cosine law)	1	1
Theory of air wedge(fringes produced by a wedge shaped thin film)	1	1
Theory of Newton's rings(reflected system)	1	1
Diffraction		
Introduction	1	--
Fraunhofer diffraction due to a single slit (quantitative)	1	--
Theory of plane transmission diffraction grating	1	1
Polarization		
Introduction, double refraction	1	
construction and working of a nicol prism	1	
Quarter wave plate	1	
Production and detection of circular and elliptical polarizations(qualitative)	1	
UNIT – III		
Lasers		
Characteristics, spontaneous and stimulated emissions	1	--
Einstein coefficients and relation between them, population	1	--

inversion		
Pumping, active system	1	
Gas (He-Ne) laser, Nd: YAG laser and semiconductor (GaAs) laser	1	
Applications of lasers	1	
Holography		
Basic principle, recording, reproduction and applications.	1	1
Fiber optics	1	1
Principle & structure of an optical fiber, Numerical aperture	1	1
Acceptance angle and acceptance cone	1	--
Fractional index change	1	
Types of optical fibers, fiber optics in communication system and its advantages	1	
Applications of optical fibers	1	
UNIT – IV		
Principles of Quantum Mechanics		
De Broglie's concept of matter waves, Davisson and Germer experiment	2	--
Heisenberg's uncertainty principle-experimental verification (electron diffraction - single slit)	2	1
Schrodinger equation and application		
Time independent Schrodinger's wave equation, physical significance of the wave function	2	--
particle in a box (one dimensional), tunneling effect	2	
Expression for transition probability (Qualitative treatment)		
UNIT V		
Electromagnetism		
Induced electric fields, displacement current and conduction Current	2	1
Maxwell's equation - qualitative (differential & integral forms) - significance, velocity of electromagnetic wave equation in free space	2	1
Poynting Theorem, LC oscillations (quantitative)	2	1
	45	15

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LESSON PLAN
Regulation: R16

Title of the Course	APPLIED CHEMISTRY
Course Code	ME 103
Year & semester	I/IV Year B.Tech. - Fisrt Semester

Topics	No. of Lectures	Tutorials
UNIT - I		
Water Technology		
Types of Hardness	1	--
UNITs and determination by EDTA method (simple problems)	1	1
Water technology for industrial purpose: Boiler troubles- scales, sludges, caustic Embrittlement, boiler corrosion	3	1
priming and foaming- causes and prevention	1	1
Internal conditioning		
phosphate, calgon and carbonate treatment	1	
External conditioning-lime soda process (simple problems)	2	
softening by ion exchange process	2	
Desalination of brackish water by electro dialysis and reverse osmosis	1	
UNIT - II		
Water treatment for drinking purpose		
WHO guidelines	1	--
sedimentation	1	
coagulation	1	
filtration (slow sand filter)	1	
various methods of chlorination	1	1
breakpoint chlorination	1	1
Phase Rule		
Statement and explanation of the terms involved	1	--
Operator D–Rules for finding the complementary function	1	--
one component water system	1	
condensed phase rule	1	
construction of phase diagram by thermal analysis	1	
simple eutectic system (Pb-Ag system only)	1	
applications eutectic compounds	1	

UNIT - III		
Electrochemistry		
Electrode potential	1	--
electrochemical series and its significance	1	--
Nernst equation-derivation-related problems	2	
Reference electrodes (SHE and Calomel electrode) Ion-selective electrode-glass electrode and measurement of pH	2	
Electrochemical Energy Systems		
Types of electrochemical energy systems	1	--
electrochemistry of primary batteries (Lachlanche or dry cell)	2	1
Secondary cells (Lead Acid cell, Ni-Cd cell)	1	
Lithium batteries (Li-MnO2, Lithium organic electrolyte) and their advantages	2	
Fuel cells (Oxygen-Hydrogen)	1	
UNIT – IV		
Corrosion and its control		
Introduction, dry corrosion, electrochemical theory of corrosion	3	--
Types of corrosion- differential aeration, galvanic (galvanic series)	3	1
Stress corrosion Factors affecting corrosion-design, pH, over voltage and temperature	2	--
Protection methods		1
Cathodic protection	1	1
(Impressed current and sacrificial anode) corrosion inhibitors-types and mechanism of inhibition	2	
metallic coatingsGalvanization, Tinning, Electroplating (Cu) and electro less plating (Ni)	2	
UNIT – V		
Analytical Techniques		
Spectroscopy- Beer-Lambert's law	2	
UV-electronic transitionschromophores-auxochromes-shifts	2	
IR- modes of vibrations, ex.H2O, CO2 Instrumentation of UV and IR	2	
Colorimetry- estimation of Iron	1	
Conductometric (HCl vs NaOH) and potentiometric titrations (Fe(II)vs K2Cr2O7)	3	
	60	15

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DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R16

Title of the Course	ENGLISH FOR COMMUNICATION
Course Code	ME 104
Year & semester	I/IV Year B.Tech. - First Semester

Topics	No. of Lectures	Tutorials
UNIT - I		
Lexis		
Synonyms & Antonyms	2	
Words often confused	3	
One Word Substitutes	2	
Analogies	3	
UNIT - II		
Written Communication		
Note-taking & Note-making	4	
Writing a Proposal	2	
Memo Writing	2	
Paragraph writing	2	
UNIT III		
Principles of Grammar		
Exposure to basics of grammar with emphasis on a. Articles & Prepositions b. Tenses c. Voice d. Speech	4	
UNIT – IV		
Communication		
Types: Oral & Written, Barriers to communication	4	
Non-verbal Communication -Kinesics, Proxemics, Occulesics, Haptics	4	
UNIT V		
Composition		
E-mail	2	
Letter-writing: order, complaint, job application, invitation.	3	
Precis writing	3	
Biographical writing: i. APJ Abdul Kalam ii. Ratan Tata iii. Sudha Murthy iv. Mother Teresa	4	
	60	

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LESSON PLAN
Regulation: R16

Title of the Course	PROBLEM SOLVING WITH C
Course Code	ME 105
Year & semester	I/IV Year B.Tech. - First Semester

Topics	No. of Lectures	Tutorials
UNIT - I		
Introduction		
Computer & it's Components, Hardware , Software	1	--
Programming languages,	1	1
Algorithm, Characteristics of algorithm	1	1
Flowchart, Symbols used in flowchart	1	1
History of C, structure of C program, C language features	1	
C Tokens		
Character set	1	--
Identifiers, Keywords, constants,	1	1
Data types, type qualifiers	1	--
Declaration and Initialization of variables	1	1
Operators & Expressions		
Type-conversion methods	1	
Operators Precedence and Associativity	1	
Input/Output functions and other library functions	1	
Programming Exercises		
C-Expressions for algebraic expressions	1	
Evaluation of arithmetic and boolean expressions	1	
Values of variables at the end of execution of a program fragment	2	
Values of variables at the end of execution of a program fragment	2	
UNIT - II		
Control statements		
If-Else statement, Else-If statement, Switch statement and goto statement	1	--
Looping- While, Do-While and for statements, Break and continue statements.	1	1
Programming Exercises		1
Finding the largest of three given numbers Finding the type of triangle formed by the given sides	1	1
Computation of discount on different types of products with different ranges of discount	1	--

Computation of income-tax Computation of Electricity bill	1	--
Finding roots of a quadratic equation. Finding the factorial of a given number	1	
Test whether a given number is-prime, perfect, palindrome or not	1	
Generation of prime and Fibonacci numbers	1	
UNIT-III		
Arrays		--
One – dimensional and Two-dimensional numeric arrays, One – dimensional and Two-dimensional character arrays	2	--
Functions		1
Function Definition, Function prototype, types of User Defined Functions	2	
Function calling mechanisms, Built-in string handling and character handling functions	2	
Recursion, Storage Classes, multi-file compilation	2	
Function with Arrays	1	
Programming Exercises		
Computation of statistical parameters of a list of numbers sorting and searching a given list of numbers	1	
Operations on Matrices such as addition, multiplication, Transpose of a matrix	1	
Finding whether a given string is palindrome or not, sorting of names, operations on strings with and without using library functions	1	
Recursive functions to find the factorial value, Fibonacci series	1	
GCD, swapping of two variables, calling the function by passing arrays	1	
UNIT-1V		
Pointers		
Pointer, Accessing a variable through pointer	1	
pointer Arithmetic, pointer and Arrays	1	
Dynamic memory allocation, pointer to pointer, Array of pointers	2	
Structures		
Structures, Nested structures, Array of structures	2	
Pointer to structures, passing structures to functions, self referential structure, Unions	2	
Programming Exercises		
Sort and search the given list using functions and pointers, operations on arrays using functions and pointers	1	
Operations on complex numbers	1	
Maintaining the books details by passing array of structures to functions sorting the list of records.	1	

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UNIT – V		
Files		
Defining and opening a file, closing a file	2	--
Input/output operations on files using file handling functions, random access to files	2	1
Command line arguments, C-preprocessor directives	2	--
Programming exercises		1
Create and display the contents of text file, copy the contents of one file into another	1	1
Merging the contents of two files, writing, reading and updation of student records in a file	1	--
Programs to display the contents of a file and copy the contents of one file into another using command line arguments.	1	--
	60	15

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DEPARTMENT OF MECHANICAL ENGINEERING

ME106 - ENGINEERING MECHANICS-I

I B.Tech. I-Semester

LESSON PLAN

Name of the topic	Lecture hours	Tutorial hours
UNIT – I **Concurrent Forces in a Plane** Principles of statics, Force	2	
Addition of two forces: Parallelogram Law	1	
Composition and resolution of forces	1	
Constraint, Action and Reaction	1	
Types of supports and support reactions, Free body diagram	1	
Equilibrium of concurrent forces in a plane – Method of projections	2	
Method of moments	1	
Tutorials		*3*
UNIT – II **Parallel Forces in a Plane** Types of parallel forces, Couple	1	
Resolution of a force into a force and a couple	1	
General case of parallel forces in a plane	2	
Tutorials		*2*
Equilibrium of forces in a plane	1	
Plane trusses-methods of joints	2	
Method of sections	2	
Tutorials		*1*
UNIT – III **Force systems in a space (using vector notation)** Position vector, unit vector, Force vector,	1	
resultant and equilibrium of concurrent forces in space	2	
Moment of a force about a point	1	
Moment of a force about an axis	1	
Tutorials		*1*

Name of the topic	Lecture hours	Tutorial hours
Friction Introduction , laws of friction, coefficient of friction , angle of friction	1	
Problems involving dry friction	2	
Wedges	1	
Tutorials		*2*
UNIT-IV **Centroid and Centre of Gravity** Concept of centroid and centre of gravity	1	
Centroids of simple figures from basic principles	3	
Centroids of composite plane figures and curves	3	
Centre of gravity of three dimensional bodies	2	
Tutorials		*3*
UNIT-V **Virtual Work** Introduction, principle of virtual work	1	
Equilibrium of Ideal systems	2	
Tutorials		*1*
Moments of Inertia of Plane Figures Introduction	1	
Moment of inertia of a plane figure with respect to an axis in its plane	2	
Polar moment of inertia, Parallel axis theorem	1	
Moment of inertia of composite areas.	2	
Tutorials		*2*
TOTAL	***60***	***15***

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Chowdavaram, GUNTUR-522019, A.P.

R V R & J C COLLEGE OF ENGINEERING, *(Autonomous)*

DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R16

Title of the Course	CHEMISTRY LABORATORY
Course Code	ME 151
Year & semester	I/IV Year B.Tech. - First Semester

Topics	No. of Lectures
1.Determination of total alkalinity of water sample a. Standardization of HCl solution b. Determination of alkalinity of water	1
2. Determination of purity of washing soda a. Standardization of HCl solution b. Determination of percentage purity of washing soda	1
3. Estimation of Chlorides in water sample a. Standardization of AgNO3 solution b. Estimation of Chlorides in water	1
4. Determination of Total Hardness of water sample a. Standardization of EDTA solution b. Determination of Total Hardness of water	1
5. Estimation of Mohr's salt-Permanganometry a. Standardization of KMnO4 solution b. Estimation of Mohr's salt	1
6. Estimation of Mohr's salt -Dichrometry a. Standardization of K2Cr2O7 solution b. Estimation of Mohr's salt	1
7.Determination of available chlorine in bleaching powder-Iodometry a. Standardization of Hypo b. Determination of available chlorine in bleaching powder	1
8. Estimation of Magnesium a. Standardization of EDTA solution b. Estimation of Magnesium	1
9. Conductometric titration of an acid vs base	1
10. Potentiometric titrations: Ferrous Salt vs Dichromate	1
Demonstration Experiments: 11.pH metric titrations of an acid vs base 12. Spectrophotometry: Estimation of Mn/Fe	2
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LESSON PLAN
Regulation: R16

Title of the Course	C-PROGRAMMING LAB
Course Code	ME 152
Year & semester	I/IV Year B.Tech. - First Semester

Topics	No. of slots
A program for electricity bill taking different categories of users, different slabs in each category	1
Write a C program to evaluate the following (using loops): (i) $x-x^3/3!+x^5/5!-x^7/7!+$----------up to n terms (ii) $1+x+x^2/2!+x^3/3!+$----------up to n terms (iii) $1-x^2/2!+x^4/4!-x^6/6!+$----------up to n terms	1
A menu driven program to test whether a given number is (using Loops): (i) Prime or not (ii) Perfect or not (iii) Armstrong or not (iv) Strong or not (v) Palindrome or not	1
4. A menu driven program to display statistical parameters (using one - dimensional array) (i) Mean (ii) Median (iii) Mode (iv) Standard deviation	1
A menu driven program to perform the following operations in a list (using one -Dimensional array) (i) Insertion of an element (ii) Deletion of an element (iii) Remove duplicates form the list (iv) Print the list	1
A menu driven program with options (using two dimensional array) (i) To compute A+B	1

(ii) To compute A x B (iii) To find transpose of matrix A. Where A and B are matrices.	
Write C programs to perform the following using Strings (i) To test the given string is palindrome or not (ii) To sort strings in alphabetical order	1
Write C programs using recursive functions i) To find the Factorial value ii) To generate Fibonacci series iii) To find the GCD of two given numbers	1
A menu driven program with options (using dynamic memory allocation) (i) Linear search (ii) Binary search	1
A menu driven program with options (using Character array of pointers) (i) To insert a student name (ii) To delete a name (iii) To sort names in alphabetical order (iv) To print list of names	2
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LESSON PLAN
Regulation: R16

Title of the Course	ENGINEERING GRAPHICS & DESIGN Lab
Course Code	ME 153
Year & semester	I/IV Year B.Tech. - First Semester

Topic	Slots
General: Principles of Engineering Graphics and their significance usage of drawing instruments lettering.	1
Conic sections: Construction of Ellipse Parabola , Hyperbola and Rectangular Hyperbola. (General method only)	2
Curves: Cycloid , Epicycloid , Hypocycloid and Involute; and **Scales**	4
Method of Projections: Principles of projection - First angle and third angle projection of points, Projection of straight lines inclined to both planes. Traces of lines.	2
Projections of planes: Projections of planes inclined to both the planes projections on auxiliary planes.	3
Projections of Regular Solids: Projections of solids (Prism Pyramid Cylinder and Cone) with varying positions.	3
Sections of Solids: Sections of Prisms Pyramids, cylinders and Cones. True shapes of sections. (Limited to the cutting plane perpendicular to one of the principal plane).	2
Development of surfaces: Development of surfaces of Right Regular Solids - Prism	2
Pyramid Cylinder and Cone: Draw the sectional orthographic views of geometrical solids objects from industry and dwellings (foundation to slab only)	
Isometric Projections: Principles of Isometric projection-Isometric Scale Isometric Views Conventions; Isometric Views of lines Planes Simple and compound Solids	2
Orthographic Projections: Conversion of pictorial views into Orthographic views and Vice-versa. (Treatment is limited to simple castings).	2
Perspective Projections: Introduction to Perspective Projection	1
Over view of Computer Aided drafting (AutoCAD) :	
Introduction starting and customizing AutoCAD screen	2
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LESSON PLAN
Regulation: R16

Title of the Course	CALCULUS AND NUMERICAL METHODS
Course Code	ME 107
Year & semester	I/IV Year B.Tech. - Second Semester

Topics	No. of Lectures	Tutorials
UNIT - I		
Matrices		
Characteristic equation – Eigen values and Eigen vectors of a real matrix	2	1
Properties of Eigen values (without proofs)	1	
Cayley – Hamilton theorem (without proof)	2	1
Reduction to diagonal form	1	1
Reduction of quadratic form to canonical form by orthogonal transformations	2	
Nature of a quadratic form	1	
UNIT - II		
Multiple Integrals		
Double integration in Cartesian and polar coordinates	2	1
Change of order of integration – Area as a double integral	2	1
Triple integration in Cartesian coordinates	2	1
Change of variables in double integrals from Cartesian to polar , Volume as a Triple Integral	2	1
UNIT-III		--
Vector Calculus		
Gradient, Directional derivatives, divergence	2	
Curl – Solenoidal and irrotational fields	2	--
Vector identities (without proof)	1	--
Line, surface and volume integrals	2	1
Green's theorem in the plane(without proofs) Stoke's theorem(without proofs) Gauss divergence theorem (without proofs)	3	1
UNIT – IV		
Numerical Solution of Equations and Interpolation		
Newton - Raphson method	1	1
Gauss Seidel method	1	1
Forward and backward differences, Differences of a polynomial	2	
Interpolation – Newton-Gregory Forward and Backward Interpolation formulae (without proof)	2	1

Lagrange's interpolation formula without proof:		
Inverse interpolation	2	2
UNIT V		
Numerical differentiation and integration		
Newton's forward and backward difference formulae to compute first and second order derivatives	4	2
Trapezoidal rule – Simpson's one third rule	4	2
	45	17

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LESSON PLAN
Regulation: R16

Title of the Course	PHYSICS OF MATERIALS
Course Code	ME 108
Year & semester	I/IV Year B.Tech. - Second Semester

Topics	No. of Lectures	Tutorials
UNIT - I		
X-ray diffraction techniques		
Direction in crystals, planes in crystals-Miller indices, separation between successive (h, k, l) planes	2	--
Diffraction of x-rays by crystal planes, derivation of Bragg's law	2	1
Determination of lattice parameters- by Bragg's x-ray diffractometer and Extinction rule	2	1
Crystal defects	2	1
Classification of crystal defects, point defects (Lattice vacancy, Schottky, Frenkel and impurity atoms) line defects (Edge and Screw),	2	
Burger's vector. (qualitative treatment- no derivations)	2	
UNIT - II		
Composite Materials		
Classification, Large particle reinforced and dispersion strengthened composites	1	--
Fiber orientation and Concentration Influences, discontinues and alignment randomly oriented	1	1
Processing techniques for composites for composite materials and fiber reinforced composites, applications	2	1
Advanced ceramics		
Classification, glass, traditional & modern ceramics	1	1
structure, noncrystalline & crysttalline compounds with NaCl fluriote & Pervoskite structures	2	--
Fabrication: raw material fabrication process	1	
Ceramic materials (Piezo, ferroelectric and ferromagnetic) qualitative only	2	
Ceramic fibers, density, thermal and mechanical properties in brief.	1	--
Applications of ceramics	1	--

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UNIT - III		
Bio-materials and Shape memory alloys		
Bio inert, Bioactive, Biodegradable materials	1	--
Classification: Metals and alloys	1	--
polymers, Hydrogels, composites and ceramic bio materials	2	
Applications.	1	--
Origin and principle of Phase transformation in Shape memory alloys (SMA)	2	1
SMA properties- hysteresis, pseudo-elastic effect and thermo elasticity	2	1
Ommercial SMA's in brief – NiTi , Cu, Iron based alloys	2	--
Applications of SMA	1	
UNIT – IV		
Magnetic Materials		
Introduction, origin of magnetic moment and Bohr magneton	1	--
classification of dia, para and ferro magnetic materials on the basis of magnetic moment (Qualitative)	1	1
soft and hard magnetic materials	1	--
Ferrites and their applications	1	1
Dielectric Materials		
Fundamental definitions: Electric dipole moment, polarization vector, polarizability, electric displacement, dielectric constant and electric susceptibility	2	--
Types of polarizations - Electric and ionic polarizations	1	
Internal fields in solids (Lorentz method	2	--
Clausius-Mossotti equation	1	
Frequency dependence of polarization Ferroelectrics and their applications	2	
UNIT V		
Superconducting materials: Introduction, critical parameters (Tc, Hc, Ic	1	
Meissner effect, types of superconductors	2	
entropy, specific heat, energy gap	1	
BCS Theory (in brief), applications of superconductors	2	
Nanomaterials		
Basic Concepts of science & technology, nano scale	1	
Introduction to nano materials, surface to volume ratio	2	1
General properties of nano materials in brief	2	
Fabrication of nano materials (sol-gel and chemical vapour deposition methods),	2	
applications of nano materials.	1	
	60	15

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LESSON PLAN
Regulation: R16

Title of the Course	CHEMISTRY OF ENGINEERING MATERIALS
Course Code	ME 109
Year & semester	I/IV Year B.Tech. - Second Semester

Topics	No. of Lectures	Tutorials
UNIT-I		
Polymers		
Monomer functionality, degree of polymerization, Tacticity	2	
Classification of polymerization- addition, condensation and co-polymerization	3	--
Mechanism of free radical polymerization	2	1
Conducting polymers		1
Introduction, examples and applications	2	1
Polyacetylene mechanism of conduction	3	
UNIT-II		
Plastics		--
Thermoplastic and thermosetting resins	1	1
Preparation, properties and uses of Bakelite, polyesters, Teflon and PVC	2	--
Compounding of plastics	2	1
Rubber		
Processing of latex	2	
Drawbacks of natural rubber- Vulcanization	1	
Chemistry of Synthetic rubbers- Buna-S and Buna-N	2	
Polyurethane rubber and silicone rubber, epoxy resin (adhesive)	2	
UNIT-III		
Fuels		
Classification of fuels	1	
Calorific value- LCV and HCV-units and determination by Bomb calorimeter	2	
Coal- Ranking, proximate and ultimate analysis	1	
Carbonization of coal-types (using Beehive oven)	2	
Metallurgical coke-properties and uses.	1	--
Petroleum based: Fractional distillation,	1	1
Cracking-fixed bed, reforming	2	1
Octane number and cetane number of liquid fuels	1	1
Composition and uses of petrol, diesel, CNG and LPG	1	--

UNIT-IV		--
Refractories		
Characteristics, classification	1	
properties and their significance– refractoriness, strength of refractoriness under load, dimensional stability, thermal spalling, thermal expansion, thermal conductivity, porosity	3	--
Common refractory bricks- silica, fire clay and carborundum.	2	--
Lubricants		1
Classification, functions	1	
properties of lubricants- Viscosity, Viscosity index, Flash point, Fire point, Cloud point, Pour point, Oilyness	1	
Solid lubricants –Graphite and Molybdenum sulphide	2	
Additives, determination of viscosity by Red wood viscometer	2	
UNIT-V		
Liquid crystals		
Structure of liquid crystal forming compounds	2	
Classification and applications	2	
Explosives		
Characteristics, terms related to explosives	2	
Classification-primary, low and high explosives	3	
Manufacture of gun powder, lead azide, nitroglycerine and RDX	3	
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LESSON PLAN
Regulation: R16

Title of the Course	ENVIRONMENTAL STUDIES
Course Code	ME 110
Year & semester	I/IV Year B.Tech. -Second Semester

Topics	No. of Lectures	Tutorials
UNIT – I		
Introduction		
Definition, Multidisciplinary nature	2	--
Scope and Importance of environmental studies	1	1
Natural Resources		1
Forest Resources: Use and over-exploitation, Deforestation	2	1
Effects of Mining and Big dams on forests and tribal people Water Resources: Use and over-utilization of surface and groundwater	2	
floods and droughts, Water logging and salinity	1	
Conflicts over water	1	--
Energy resources: Renewable and non-renewable Energy sources	1	1
Land as a resource, land degradation, Soil erosion & Desertification.	2	--
UNIT-II		1
Ecosystems		
Definition, Structure and functions of Ecosystems	1	
A general account of types of ecosystems with examples	1	
Bio-geo chemical cycles (water, carbon, and nitrogen).	1	
Biodiversity and its Conservation		
Definition of Biodiversity	1	
Values and threats to biodiversity and conservation of biodiversity	2	
Bio-geographical classification of India, India as a mega-diversity nation	2	
Hotspots of biodiversity, IUCN classification of Biodiversity	2	
Endemic, Exotic and Endangered species – Meaning with a few examples from India.	2	
UNIT-III		
Environmental Pollution		--
Causes effects and control measures of Air pollution including Noise, Fresh Water pollution, Marine pollution, Thermal pollution, and nuclear pollution	2	1

Solid wastes – Types based on source (Ex. Municipal, Industrial, Constructional and Medical) and nature (degradable and non-degradable	2	--
Effects of improper dumping.	2	--
Solid waste management – Objectives, practices	2	
Water shed and its management		
Definition and importance	2	--
Water shed management methods including rain water harvestment	2	--
UNIT-IV		
Social Issues and Environment		
Definition of sustainable development, key types and measures for sustainable development	2	
salient features of Stockholm conference 1972	1	
Earth summit, 1992	1	
Human Population and environment, Green revolution	1	
Resettlement and rehabilitation of people - problems and concerns	1	
Climate Changes		
Green House Gases, Kyoto Protocol	2	
Global warming (The story of Tuvalu)	1	
Ozone depletion and Acid rain	2	
Environmental Impact Assessment	1	
UNIT-V		
Environmental acts		
Environmental Legislation	1	
Wild life protection act, 1972; Water(Prevention and Control of pollution) act, 1974; Forest Conservation act, 1980; Air (Prevention and Control of pollution) act, 1981; Environmental protection act, 1986	3	
Case Studies		
Chipko movement, Narmada Bachao Andolan, Silent Valley Project	2	
Chernobyl Nuclear Disaster, Bhopal Tragedy, Ralegaon Siddhi, The story of Ganga.	2	
Field work		
Visit to a local area to document environmental assets - river/ forest/grassland / hill / mountain	1	
Study of local environment-common plants, insects, birds Study of simple ecosystems - pond, river, hill, slopes etc. Visits to industries, water treatment plants, and effluent treatment plants	3	
	60	

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K. Sobha

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DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R16

Title of the Course	ENGINEERING DRAWING
Course Code	ME 111
Year & semester	I/IV Year B.Tech. - Second Semester

Topics	No. of Lectures	Tutorials
UNIT-I		
Projections of Solids		
Projections of Cubes		
Prisms	2	--
Pyramids	2	1
Cylinders and Cones with varying positions	3	1
UNIT II		1
Sections of Solids		
Sections of Cubes	3	
Prisms	2	--
Pyramids	2	1
cylinders and Cones	2	--
True shapes of sections	3	1
UNIT III		
Development of Surfaces		
Lateral development of cut sections of Cubes, Prisms, Pyramids, Cylinders and Cones	12	
UNIT IV		
Interpenetration of Solids		
Interpenetration of Prism in prism	3	
and Cylinder in Cylinder with their axes perpendicular without offsets	3	
Isometric Views		
Conversion of Orthographic Projections into isometric views	6	
UNIT V		
Orthographic Projections		
Conversion of pictorial views into Orthographic views	12	--
	60	15

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Subject Name	:	**ENGINEERING MECHANICS II**
Code	:	**ME-112**
Course	:	**B.Tech**
Year & Sem	:	**First, Second**
Section	:	**A, B, C**
Regulation	:	**R 16**

LESSON PLAN & DELIVERY

Name of the topic	Lecture hours	Tutorial hours
UNIT – I		
Kinematics of Rectilinear Motion		
Introduction to dynamics , displacement , velocity and acceleration	2	
Motion with uniform acceleration	2	
Motion with variable acceleration	2	
Tutorials		2
Kinetics of Rectilinear Motion		
Equation of rectilinear motion	1	
Motion of a particle acted upon by a constant force – D'Alemberts principle	3	
Work and energy	2	
Impulse momentum, conservation of energy	1	
Collision of elastic bodies-direct central impact	2	
Tutorials		2
UNIT – II		
Kinematics of Curvilinear Motion		
Introduction,	1	
Components of motion - rectangular components	2	
Normal and tangential components	3	
Tutorials		1
Kinetics of Curvilinear Motion		
Equations of motion-rectangular components	1	
Tangential and normal components	2	
Equations of dynamic equilibrium – D'Alembert's principle	3	
Work and Energy	3	
Tutorials		2
UNIT - III		
Moment of Inertia of Material Bodies		
Moment of inertia of a rigid body	1	
Moment of inertia of laminas	3	

Moment of inertia of three dimensional bodies-solid right circular cone	2	
Solid cylinder, sphere & parallelepiped	3	
Tutorials		2
Rotation of a rigid body about a fixed axis Kinematics of rotation	3	
Equation of motion for a rigid body rotating about a fixed axis	1	
Rotation under the action of constant moment inertia	3	
Tutorials		2
UNIT - IV **Kinematics of plane motion** Introduction to plane motion	1	
Concepts of relative velocity	3	
Concepts of instantaneous center	3	
Tutorials		2
Kinetics of plane motion Equations of motion	4	
Dynamic equilibrium of symmetrical rolling bodies	4	
Tutorials		2
UNIT - V **Simple Harmonic Motion** Introduction - velocity and acceleration of a particle moving with SHM	2	
SHM related terms - oscillation of a vertical elastic string or spring	2	
stiffness of the spring	*1*	
Tutorials		3
Mechanical Vibrations Introduction-classification of vibrations	*1*	
Damping and vibration features of vibrating system	*2*	
Springs in series , springs in parallel and equivalent spring constant	*1*	
Free vibration without damping.	*1*	
Tutorials		2
TOTAL	**70**	**20**

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LESSON PLAN
Regulation: R16

Title of the Course	PHYSICS LABORATORY
Course Code	ME 154
Year & semester	I/IV Year B.Tech. - Second Semester

Topics	No. of Lectures
1. Interference fringes – measurement of thickness of a foil using wedge method	1
2. Newton's rings - measurement of radius of curvature of Plano-convex lens	1
3. Lissajous' figures – calibration of an audio oscillator	1
4.Photo cell – characteristic curves and determination of stopping potential	1
5. Diffraction grating - measurement of wavelengths	1
6. Torsional pendulum – determination of Rigidity modulus of a wire	1
7. Photo-Voltaic cell – determination of fill factor	1
8. Series LCR resonance circuit –determination of Q factor	1
9. Sonometer – determination of A.C. frequency	1
10. Laser- determination of wave length using diffraction grating	1
11. Variation of magnetic field along the axis of a circular current carrying coil	1
12. Optical Fiber – Determination of Numerical Aperture and Acceptance Angle	1
	10

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LESSON PLAN
Regulation: R16

Title of the Course	COMMUNICATION SKILLS LAB
Course Code	ME 155
Year & semester	I/IV Year B.Tech. – Second Semester

Topics	No. of Lectures
UNIT I	
Phonetics	
Sounds, Symbols, Stress and Intonation	1
Pronunciation – Mother tongue influence – Indianisms etc	1
UNIT II	
Reading Comprehension	
Strategies	1
Reading skills – Skimming and Scanning	1
Intensive and Extensive reading	1
UNIT III	
Idioms & Phrases	
Idioms of variety	1
UNIT IV	
Interactive classroom activities	
Jam– (Guided & Free) – Extempore –Elocution – Telephonic Skills	2
Articulation and flow of oral presentation – voice modulation – content generation – Key Word Approach (KWA)	2
UNIT V	
Communication Skills	
Greeting and Introducing	1
Making Requests; Agreeing and disagreeing	1
Asking for and giving permissions	1
Offering help; Art of small talk	1
Making a short formal speech; Describing people, places, events & things.	1
	15

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LESSON PLAN
Regulation: R16

Title of the Course	WORKSHOP PRACTICE
Course Code	ME 156
Year & semester	I/IV Year B.Tech. - Second Semester

Topics	No. of Lectures
1. CARPENTRY	
To make the following jobs with hand tools	
a) Lap joint	1
b) Lap Tee joint	1
c) Dove tail joint	1
d) Mortise & Tenon joint	1
e) Cross-Lap joint	1
2. WELDING	
USING ELECTRIC ARC WELDING PROCESS / GAS WELDING. The following joints to be welded.	1
a) Lap joint	1
b) Tee joint	1
c) Edge joint	1
d) Butt joint	1
e) Corner joint	1
3.SHEET METAL OPERATIONS WITH HAND TOOLS	
a) Rectangular Tray	1
b) Triangular Tray	1
c) Pipe Joint	1
d) Funnel	1
e) Rectangular Scoop	1
4.HOUSE WIRING	
a) To connect one lamp with one switch	1
b) To connect two lamps with one switch	1
c) To connect a fluorescent tube	1
d) Stair case wiring	1
e) Go down wiring	1

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LESSON PLAN
Regulation: R16

Title of the Course	COMPLEX ANALYSIS AND NUMERICAL SOLUTIONS
Course Code	ME 201
Year & semester	II/IV Year B.Tech. - First Semester

Topics	No. of Lectures	Tutorials
UNIT - 1		
Complex Functions		
Introduction- Derivative of complex function	1	1
Analytic functions - The necessary and sufficient conditions for the analyticity of the function (without proof)	3	1
Cauchyriemann equations in polar form	2	
Harmonic functions Milne-Thomson method	1	1
Orthogonal system	1	1
UNIT II		
Complex Integration		
Line integrals	3	1
Cauchy's integral theorem, Cauchy's integral formulae	7	1
UNIT III		
Series and Residues		
Taylor's and Laurent's expansions (without proofs)	3	1
Singularities – Poles and Residues	3	
Cauchy's residue theorem (without proof)	3	1
UNIT IV		
Numerical Solutions of Ordinary Differential Equations (First order)		
Solution by Taylor's series	2	1
Picards method	2	1
Euler's method	2	1
Runge-Kutta method of fourth order	2	1
UNIT V		
Numerical Solutions of Partial Differential Equation		
Classification of Partial differential equations of the second order	3	1
Laplace's equation	3	1
Poisson's equation.	3	1
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LESSON PLAN: ME202 (R16) MECHANICS OF MATERIALS-I

	TOPIC	PERIODS	MODE OF DELIVERY
UNIT 1	Introduction, Tension ,compression ,shear Normal Stress and Strain, Shear stress and strain	2	Chalk-board
	Stress- Strain Diagrams, Ductile, Brittle	2	Chalk-board
	Elasticity and Plasticity, Linear Elasticity and Hooke's Law,	2	Chalk-board
	Shear Stress and Strain, Allowable Stresses and Loads.	2	Chalk-board
	Axially Loaded Members: Introduction, Deflections of Axially loaded Members, stepped bars, problems	3	Chalk-board
	Bulk Modulus, Poisson's ratio	1	Chalk-board
UNIT 2	Introduction to Statically Indeterminate Axially Loaded Members	1	Chalk-board
	Statically indeterminate structures Flexibility method	3	Chalk-board
	Statically indeterminate structures Stiffness method	3	Chalk-board
	Thermal Stress and Strain	2	Chalk-board
	Strain energy of axially loaded members subjected to static load	3	Chalk-board
UNIT 3	Introduction, Torsion of Circular Bars	1	Chalk-board
	Pure Shear, Relationship between Modulus of Elasticity(E)and Modulus of Rigidity(G)	2	Chalk-board
	Transmission of power by circular shafts	1	Chalk-board
	Strain Energy in pure Shear and uniform Torsion for Statically determinate Members.	2	Chalk-board
	Types of Beams, Shear Force and Bending Moment	2	Chalk-board
	Relationships between Load, Shear Force and Bending Moment	1	Chalk-board
	Shear Force and Bending Moment Diagrams.	3	Chalk-board
UNIT 4	Introduction, Normal Strains in Beams	2	Chalk-board
	Normal Stresses in Beams, Simple flexural formula	2	Chalk-board
	Normal Stresses in Rectangular Beams, Circular sections, T-Sections, I-Sections, Triangular sections	3	Chalk-board
	Shear stresses in beams, Shear stress formula	2	Chalk-board
	Shear Stresses in Rectangular Beams, Circular sections, T-Sections, I-Sections, Triangular sections	3	Chalk-board
UNIT 5	Analysis of Plane Stress, Principal Stresses and Maximum Shear Stress	3	Chalk-board
	Analysis of Plane strain, Principal strains, Max Shear strains	3	Chalk-board
	Hooke's Law for Plane Stress, Unit Volume change, Strain Energy Density, Mohr's Circle for Plane Stress	3	Chalk-board
	Mohr's Circle for Plane Strain, Problems	3	Chalk-board

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DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R16

Title of the Course	ELECTRICAL TECHNOLOGY
Course Code	ME 203
Year & semester	II/IV Year B.Tech. - First Semester

Topics	No. of Lectures	Tutorials
UNIT I		
DC and AC circuits		
Kirchhoff's laws, simple circuits	1	
Alternating current -waveforms	2	
Peak factor, Form factor, RMS - Average values	2	
Simple R-L-C- series and parallel circuits	1	
Active, reactive and apparent power, Power factor	2	
Poly-phase circuits		
Advantages of poly-phase circuits over 1-phase circuits	1	
Relation between line and phase voltages	2	
Relation between line and phase currents in star/delta balanced circuits	1	
UNIT II		
DC Generators		
Constructional features and Operation of DC generators	1	
E.M.F. Equation	1	
Methods of excitation-Load characteristics of shunt, series, compound generators	2	
Different Power Stages, Losses and efficiency	1	
Condition for maximum efficiency	1	
DC Motors		
Constructional features and Operation of DC motor	1	
Torque Equation	1	
Methods of excitation-characteristics of shunt, series, compound motors	2	
Different Power Stages, Losses and efficiency	1	
Condition for maximum Mechanical power	1	
principle of starters-3 point starter only	1	
UNIT III		
Transformers		
Construction and working principle of operation, types	2	
E.M.F.equation	1	

equivalent circuit - regulation – losses and efficiency	2	
open circuit and short-circuit tests	1	
3-Phase Induction machines		
Constructional features-Principle of operation	1	
concept of rotating magnetic field, torque equation, torque-slip characteristics	2	
Principle of starters	2	
UNIT IV		
1-Phase Induction machines		
Fundamentals of single-phase induction motors and their starting	3	
Synchronous machines		
Principle - constructional features	3	
Types alternators	3	
E.M.F.equation-applications of synchronous motors	3	
UNIT V		
Measuring Instruments		
Principles and operation of moving - coil and moving-iron instruments-Dynamometer-type wattmeter	5	
Utilization		
Principles of resistance and induction heating	4	
principles of electrical traction-speed time characteristics.	3	
	60	

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LESSON PLAN
Regulation: R16

Title of the Course	BASIC THERMODYNAMICS
Course Code	ME 204
Year & semester	II/IV Year B.Tech. - First Semester
Nature of the Course	Core Competence

SL. NO.	TOPIC S TO BE COVERED	NO. PERIODS
1	General discussion, Syllabus dictation, importance of Thermodynamics subject	2
2	Units, dimensions, Mass, Weight, Force, Higher and Lower units prefixes to be adopted discussion	1
3	Problems on Mass, weight and force, density calculations	2
	UNIT I - FUNDAMENTAL CONCEPTS AND DEFINITIONS	
4	Thermodynamic system, control volume, Types of systems- examples , Microscopic and Macroscopic study of matter - differences	1
5	State, change of state, path of change of state, process, cycle, Types of properties intensive, extensive- examples, intrinsic and extrinsic	1
6	Condition for using a certain quantity as a property, problems on it	1
7	Thermodynamic equilibrium, Quasistatic process explanation	1
8	Zeroth law of thermodynamics, explanation, Temperature measurement	1
9	Problems on temperature measurement	1
10	Perfect gases, Boyles and Charles laws	1
11	Avagadros law, Equation of state, characteristic gas equation, relation between Cp and Cv	1
12	Problems on Perfect gases (gas laws)	1
	UNIT I I WORK AND HEAT	
13	Work definition, units, thermodynamic definition, calculation of displacement work	1
14	Work done in various non flow processes	1
15	Different types of work transfer	1
16	Heat, definition, units, heat calculation for different processes	1
17	Point functions, path functions, work and heat are path functions explanation	1
18	Problems on heat and work	3
	UNIT II First law of Thermodynamics for Non flow systems	

19	Joules experiment, First law of TD for a closed system undergoing a cycle and problems on it	1
20	First law of TD for a system for a change in state of system, internal energy . energy is a property of the system proof	1
21	Internal energy and enthalpy and their relation to C_p and C_v	1
22	First law applied to different non flow processes and derivation of law for reversible adiabatic process, PMMI	2
23	Problems on First law of TD for individual processes and for cycles	4
	UNIT III First law of Thermodynamics for Flow systems	
24	Steady flow process, Control volume, Steady flow energy equation derivation	1.5
25	SFEE applied to different devices	1.5
26	Problems on First law of TD for flow systems	3
	UNIT III SECOND LAW OF THERMODYNAMICS	
27	Limitations of First law of TD, Importance of Second law, Cyclic Heat engine, Energy Reservoirs	1
28	Kelvin Planck Statement of II law of Thermodynamics, Refrigerator and Heat pump	1
29	Proof for Equivalence of two statements	1
	UNIT IV Ideal(Reversible cycles)	
30	Reversibility, Irreversibility, Causes of Irreversibility, Conditions for reversibility	1
31	Carnot cycle explanation and derivation for thermal efficiency	1
32	Reversed heat engine, Carnot's theorem -proof	1
33	Corollary of Carnot's theorem, proof	1
34	Absolute thermodynamic temperature scale explanation, Efficiency, COP of refrigerator and heat pump expressions in terms of Temperatures	1
35	Third law of thermodynamics	0.5
36	Problems on II law of thermodynamics	2.5
	UNIT IV - ENTROPY	
37	Two reversible adiabatic processes can't intersect, Clausiu's theorem	1
38	Entropy a property of the system, temperature entropy plot,	1
39	Entropy changes for different non flow processes	1
40	Clasius inequality proof	1
41	Entropy change of an Irreversible process expression, Entropy principle,	1
42	Expressions for entropy change for a perfect gas ,Problem on Clasius enquality.	1
43	Problems on Entropy change	3
	UNIT V –Availability & Irreversibility	
44	High grade and Low grade energies, Available energy, Available energy referred to a cycle	1

45	Decrease in available energy when heat is transferred through finite temperature difference	1
46	Available energy from a finite energy source, Quality of energy, Maximum work in a reversible process	1
47	Reversible work in steady flow process, reversible work in closed system	1
48	Useful work, dead state, Availability	1
49	Useful work, dead state, Availability	1
50	Availability in steady flow process and for non flow process	1
51	Problems on Availability	2
	UNIT V AIR STAND CYCLES	
52	Gas power cycle introduction, Air standard efficiency, Piston cylinder arrangement, mean effective pressure	1
53	Otto cycle, derivation of thermal efficiency and mean effective pressure	1
54	Diesel cycle , derivation of thermal efficiency and mean effective pressure	1
55	Dual combustion cycle, derivation of thermal efficiency and mean effective pressure	1
56	Brayton cycle, derivation for thermal efficiency	1
57	Problems on Otto, Diesel, dual and Brayton cycles	3
58	Comparision between Otto, diesel and dual for two conditions (i) constant compression ratio and same peak pressure and temperature	1
	Total	**75**

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Course Code	:	ME205
Title of the Course	:	Theory of Mechanisms & Machines
Year & semester	:	2nd Year &3rd Semester
Periods per Week	:	Theory-4; Tutorial-1
Regulation	:	R-16

COURSE OBJECTIVES:

1. To provide basic concepts on mechanisms, machines and analyze the velocities of various links in mechanisms.
2. To introduce the instantaneous centre concepts for analysis.
3. Brief study on synthesis and concepts of Type, Number and Dimensional synthesis.
4. To introduce the CAMs and their design regards to synthesis.
5. To introduce various concepts on gears, classification and types.

COURSE OUTCOMES:

After successful completion of the course, the students are able to

a. Students can understand various mechanisms and terminology used in kinematics.
b. Students can analyze the mechanisms and machines regarding velocities and accelerations.
c. Students can understand the concepts of synthesis in respect of CAM systems.
d. Students can understand the Gear terminology and able to analyze the spur gear trains.
e. To understand and analyze the concept of gear trains.

LESSON PLAN & DELIVERY:

TOPICS	NO. OF PERIODS
Unit-1	
Introduction of Mechanisms and machines, Rigid and resistant bodies, Link, Kinematic pair, Degrees of Freedom	2
Classifications of Kinematic pairs.	1
Kinematic-chain, Linkage, Mechanism, and structure.	1
Classification of mechanisms, Equivalent Mechanisms, Four - Link (bar) Mechanism	1
Inversions of Slider - Crank Chain , Double – Slider Chain.	2
VELOCITY ANALYSIS:	
Introduction, Absolute and Relative Motion, Vectors, Addition and subtraction of Vectors.	1
Motion of a Link, Angular Velocity of Links, Velocity of Rubbing.	1
Problems on Four Link Mechanism	2
Problems on Slider - Crank Mechanism.	2
Problems on Crank and Slotted Lever Mechanism.	2
UNIT II	
Introduction of Instantaneous centre, Notation, Number of I - Centres,	1
Kennedy's theorem, Locating I - Centres, Angular velocity by I - Centre Method.	1
Problems on Instantaneous centre	3

ACCELERATION ANALYSIS :	
Problems on Acceleration of Four-Link Mechanism	4
Problems on Acceleration of Slider-Crank Mechanism.	3
Problems on Acceleration of Crank and slotted lever Mechanism. Coriolis acceleration component.	3
UNIT III	
KINEMATIC SYNTHESIS:	
Stages of synthesis-Concepts of type, Number and dimensional synthesis	1
Tasks of dimensional synthesis	1
Concepts of function generation, Rigid body guidance and path generation	1
Freudenstein equation for function generation using three precision points.	2
Problems on Freudenstein equation and Chebyshev's spacing using three precision points.	2
CAMS :	
Introduction, Types of cams.	2
Types of Followers, Definitions	1
Graphical synthesis of cam profile. (Knife Edge, Roller and Flat faced Followers).	5
UNIT IV	
GEARS :	
Introduction, Classification of Gears	1
Gear terminology, Law of Gearing.	1
Velocity of Sliding, Forms of Teeth, Cycloidal Profile Teeth, Involute Profile Teeth.	1
Path of contact, Arc of contact, Number of pairs of Teeth in contact.	2
Interference in Involute Gears, Minimum number of Teeth.	1
Interference between Rack and Pinion, Undercutting, Comparison of Cycloidal and Involute tooth forms.	2
UNIT V	
GEAR TRAINS:	
Introduction of Gear Trains.	1
Classification of Gear Trains-simple Gear Train, Compound Gear Train, Reverted Gear train, Planetary or Epicyclic Gear Train.	2
Analysis of Epicyclic Gear Train, Torques in Epicyclic Trains.	1
Tabular and Algebraic Methods.	3

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FLUID MECHANICS

&

HYDRAULIC MACHINES

Lesson Plan: ME206 (R16)

UNITS	Periods	Total
UNIT I		
Introduction		
Definition of fluid, Properties of a fluid - density, specific	2	
weight, specific gravity,	3	10
viscosity, compressibility,	2	
surface tension,	2	
capillarity, vapor pressure,	1	
Classification of fluids.		
Fluid Statics		
Pressure, variation of pressure in fluid,	2	
measurement of pressure – simple manometers	3	
differential manometers	3	11
pressure head, Pascal's law,	1	
Total pressure and center of pressure on plane surfaces, Buoyancy	2	
and Metacentric height.		
UNIT II		
Fluid Kinematics:		
Velocity and acceleration of fluid particle	3	
Type of fluid flow, Description of flow pattern	2	
Rotation and irrotational flow	3	15
Velocity potential, stream function, flow net	2	
Continuity equation in Cartesian coordinates	1	
Introduction, Euler's equation of motion	1	
Bernoulli's equation	3	

Flow through pipes:		
Laws of fluid friction, major losses	2	
Darcy weisbach equation	1	
Minor losses(sudden expansion and contraction only)	1	7
Hydraulic gradient line	2	
Total energy line, pipes in series and parallel.	1	
UNIT III		
Impulse Momentum Equation:		
Impulse momentum principle equation and application,	2	4
force on pipe bend	2	
Impact of jets:		
Introduction, Force exerted by a fluid jet on stationary moving flat plate and	2	
curved vanes.	1	3
UNIT IV		
Hydraulic Turbines:		
Elements of hydro-electric power plants Heads	1	
Efficiencies of pelton wheel, Francis turbine	1	3
Kaplan turbine	1	
Performance of Turbines:		
Performance under UNIT quantities	2	4
Performance under specific conditions- specific speed, performance characteristic curves.	2	
UNIT-V		
Pumps:		
Working principles of Centrifugal and Reciprocating pumps.	2	
Dimensional Analysis & Model Similitude:		
Introduction, Buckingham's Pi theorem	1	
Types of similarities, Force ratios, Dimensionless numbers	2	7
Model Laws-Reynolds and Froude law, Types of models, scale effect	2	
Total		64

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LESSON PLAN
Regulation: R16

Title of the Course	FM & SM LAB
Course Code	ME 251
Year & semester	II/IV Year B.Tech. - Second Semester

Topics	No. of Lectures
Any Ten Experiments out of the following are to be performed:	
FLUID MECHANICS LAB	1
1. Orifice - Determination of coefficient of discharge	1
2. Venturi meter - Determination of coefficient of discharge	1
3. Pipe friction - Determination of friction factor and size of roughness of a given pipe	1
4. Single - stage centrifugal pump To draw the operating characteristics of the pump and to determine the designed discharge and designed head from it	1
5. Single - acting reciprocating pump To draw the operating characteristic curves at constant speed and determination of efficiency	1
6. Gear pump To draw the operating characteristic curves and determination of overall efficiency	1
7. Pelton turbine To draw the performance characteristic curves and determination of overall efficiency	1
8. Francis / Kaplan turbine To draw the performance characteristic curves and determination of overall efficiency	1
STRENGTH OF MATERIALS LAB	
1. (a) Rockwell Hardness test Determination of Hardness Number for different metal specimens such as mildsteel, cast iron, Brass, Aluminum (b) Brinnell's Hardness Test	1
2. Impact Test a) Charpy and (b) Izod: Determination of impact strength of mild steel and cast iron specimens	1
3. Tension Test on UTM Determination of mechanical properties of mild steel and cast iron specimens	1
4. Tests on helical spring	1

Determination of stiffness of Helical springs	
5. To find the modulus of rigidity by conducting torsion test on solid circular shaft	1
	10

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LESSON PLAN
Regulation: R16

Title of the Course	MACHINE DRAWING AND CAD LAB
Course Code	ME 252
Year & semester	II/IV Year B.Tech. - First Semester

Topics	No. of Lectures
MACHINE DRAWING	
1. **Sectional views** : Introduction, full & half section	1
2. **Screwed fasteners** : Screw thread nomenclature - types & classification of screw threads, Square & Hexagonal headed bolted joints.	2
3. **Keys, Cotters and Pin joints** : Saddle & Sunk Keys, Cotter Joint with sleeve , Knuckle Joint.	3
4. **Assembly Drawings** : Stuffing Box , Screw Jack , Eccentric , Pipe - Vice	3
COMPUTER AIDED DRAFTING (CAD)	
1. **Introduction**: Basic Drawing, Modify, editing & dimensioning commands, layers, AutoCAD - Screen Menus	1
2.Sectional views of castings	2
3. **Assembly Drawings** : (Any Two) a. Pipe vice, b. Lathe Tail Stock ; c. Swivel Bearing ; d. Screw Jack	4
4. **Part Drawings** : (Any Two) a. Single tool post ; b. Petrol Engine Connecting Rod ; c. Angular - plummer block	4

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LESSON PLAN
Regulation: R16

Title of the Course	PROFESSIONAL COMMUNICATION SKILLS LAB
Course Code	ME 253
Year & semester	II/IV Year B.Tech. - First Semester

Topics	No. of Lectures	Tutorials
UNIT I		
Presentation skills		
a. Key presentation skills inspired by Steve Jobs – You Tube		
b. Personality & finishing skills training videos		
How to make Effective Presentations, Methodology, Structure, using Technology and Conclusion		
UNIT II		
Speech writing		
a. Welcoming guests on to the stage		
b. Proposing vote of thanks		
Invite and thank people with professional etiquette		
UNIT III		
Reading skills		
a. News paper reading		
b. Reading and interpretation		
News paper reading – loud reading within the groups		
Reporting the news with one another without the help of the news paper.		
UNIT IV		
Writing Skills		
Report writing a. Feasibility report. b. Project report		
UNIT V		
Career skills		
a. Resume & Cover letter. b. Interview – The purpose & preparation for an interview		
Discover oneself		
Self Introduction-Social background (family, home and town)- interests, Hobbies, likes & dislikes (persons, places, food, music, etc) – Strengths, Weaknesses, Skills, Qualities, Achievements – Opinions (love, life, marriage, politics, India, etc) what is life according to me? A creative narration with factual information is		

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LESSON PLAN
Regulation: R16

Title of the Course	TRANSFORMATION TECHNIQUES & DISTRIBUTIONS
Course Code	ME 207
Year & semester	II/IV Year B.Tech. - Second Semester

Topics	No. of Lectures	Tutorials
UNIT - I		
Fourier Series		
Dirichlet's conditions - General Fourier series	5	1
Half range sine and cosine series - Parseval's formula	5	1
UNIT II		
Fourier Transforms		
Statement of Fourier integral theorem (without proof)	1	
Fourier transform - Fourier Sine and Cosine transforms	4	3
3	4	1
UNIT III		
Laplace Transforms		
Transforms of simple functions – Basic operational properties – Transforms of derivatives and integrals	4	2
Inverse transforms – Convolution theorem (without proof).	4	2
UNIT IV		
Distributions		
Binomial Distribution, Poisson approximation to the Binomial Distribution	4	1
Normal Distribution	2	1
Normal approximation to the Binomial Distribution, properties	1	1
Applications to Industrial problems	2	
UNIT V		
Testing Of Hypothesis		
Large sample tests based on Normal distribution	2	1
Hypothesis concerning one Mean, Hypothesis concerning two means.	2	1
Small sample tests based on t and F-distributions	1	
Hypothesis concerning one Mean, Hypothesis concerning two means	2	
Hypothesis concerning one Variance, Hypothesis concerning two variances	3	
	45	15

Regards

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DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R16

Title of the Course	MECHANICS OF MATERIALS II
Course Code	ME 208
Year & semester	II IV Year B.Tech. - Second Semester

Topics	No. of Lectures	Tutorials
UNIT - I		
Deflections of Beams		
Introduction, Differential Equations of the Deflection Curve	2	
Deflections by Integration of the Bending Moment Equation	2	
Deflections by integration of the Shear Force and Load equations	2	
Deflections by Moment Area Method	2	
Macaulay's Method and Deflections of beams by strain energy method	2	
Deflections by using Castigliano's first theorem	2	
UNIT II		
Columns		
Introduction, Buckling and Stability	1	
Columns with Pinned ends, Columns with other support conditions	2	
Limitations of Euler's Formula	1	
Rankine's Formula	1	
Columns with eccentric Axial Loads, Secant formula	2	
Statically Indeterminate Beams		
Introduction	1	
Fixed and propped cantilever beams - Analysis by the differential equations of the Deflection curve	2	
Moment Area Method	2	
UNIT III		
Continuous Beams		
Introduction, Clapeyron's theorem of three moments	2	
Beamswith constant and varying moments of inertia	2	
Curved Beams		
Stresses in Beams of small and large initial curvature	2	
The WinklerBach theory	2	
Stresses in Crane Hook and C-Clamp with Rectangular, Circular and Trapezoidal cross-sections	4	
UNIT IV		
Thin Pressure Vessels		--

Introduction	1	
Thin cylindrical pressure vessels – hoop and longitudinal stresses, change in dimensions due to internal pressure	2	
Thin Spherical pressure vessels - hoop stresses, change in dimensions due to internal pressure.	3	--
Thick Cylindrical Pressure Vessels		--
Introduction	1	1
Lame's theory – stresses in a thick cylindrical shell	2	
Compound Cylinders – shrinkage stresses, resultant stresses, initial difference in radii at the junction of a compound cylinder	3	
UNIT V		
Shear Centre		
Bending Axis and Shear Centre	2	
Position of Shear Centre, Shear flow	2	
Shear Centre of Channel section, Angle section, T- section and I-section	3	
Centrifugal Stresses		
Introduction	1	
Rotating Ring, Rotating Disc	2	
Rotating Disc of uniform strength	2	
	60	15

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LESSON PLAN
Regulation: R16

Title of the Course	CASTING , WELDING AND METAL WORKING PROCESS
Course Code	ME 209
Year & semester	II/IV Year B.Tech. - Second Semester

Topics	No. of Lectures	Tutorials
UNIT - I		
Metal Casting		
Introduction, advantages of Casting method	1	1
pattern: types, materials and allowances	3	1
Sand moulding procedure	2	1
Moulding materials and equipment Preparation	3	
control and testing of moulding sands, Cores	3	
UNIT- II		
Fettling of castings	2	1
casting defects: causes, remedies and testing	2	
Cupola: Description, operation and zones	2	1
Elements of gating system	2	
Risering design: caine's method, modulus method	4	1
UNIT III		
Special Casting Methods		
Permanent Mould Casting, Die Casting,	4	1
Centrifugal casting, Investment casting	4	
shell moulding, CO2 process and continuous casting	4	
UNIT IV		
WELDING		
Gas and arc welding – Principles of oxy-acetylene welding, oxyacetylene flame cutting, MMAW (Manual metal arc welding), TIG, MIG, submerged arc welding	4	1
Resistance welding principles, Butt welding, Spot welding, Seam welding. Thermit Welding, Electroslag welding, Laser beam welding.	4	1
Ultrasonic welding and Adhesive bonding	2	
Brazing & Soldering, welding defects - causes and remedies	2	1
UNIT- V		

Metal Working Processes		
Introduction, Hot and Cold working of metals	**2**	**1**
Rolling: Types of rolling mills, roll passes	**2**	**1**
Forging: Description and types of forging, defects in forged parts	**2**	**1**
Extrusion: Classification, description and application of extrusion process	**2**	**1**
Tube making, Swaging, Spinning, Coining, Embossing and Wire drawing	**2**	
Explosive forming and electro hydraulic forming.	**2**	**1**
	60	**15**

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ME 210- APPLIED THERMODYNAMICS- R16		
LESSON PLAN		
TOTAL LECTURE HOURS- 60		
UNIT - I		
CHAPTER	**SUB CHAPTERS**	**LECTURE HOURS AND TUTORIALS**
PURE SUBSTANCE	Definition, process of steam generation	2
	P-v, T-s and h-s diagrams.	1
	properties of Wet, Dry Saturated and Superheated steam, Use of Steam Tables, Mollier chart	2
	problems	3
STEAM BOILERS	Function, classification,	1
	working of Benson & La-Mont boilers	2
	Mountings & Accessories	1
	TOTAL	
UNIT II		
VAPOR POWER CYCLES	Simple steam power cycle,Rankine cycle analysis and problem	3
	Effect of pressure and temperature on the Rankine cycle performance	2
	problems	3
METHODS OF IMPROVING PERFORMANCE	Reheat cycle, Regenerative cycle	4
	Total	12
UNIT III		
STEAM NOZZLES	Types of nozzles, isentropic flow through nozzles, Effect of friction, Nozzle efficiency	2
	Critical pressure ratio and maximum discharge	2
	calculation of throat and exit areas using Mollier diagram	1
	problems	2
STEAM CONDENSERS	Jet and Surface condensers	1
	condenser vacuum and vacuum efficiency, Condenser efficiency	1
	Thermodynamic analysis, Air pumps, Capacity of air extraction pump.	1
	problems	2

	Total	12
	UNIT IV	
STEAM TURBINES	Types of steam turbines, Impulse turbines, pressure and velocity compounding,	2
	velocity diagrams, work output, power, blade, efficiency and stage efficiency,	2
	Probloems	2
	Reaction turbines, velocity diagrams, degree of reaction, work output, power, blade efficiency and stage efficiency, Governing of turbines,	3
	Overall efficiency and reheat factor	1
	problems	2
	Total	12
	UNIT V	
REFRIGERATION	Need for Refrigeration, Definitions, Methods of refrigeration,	1
	Working of Refrigerator and Heat pump, problems	2
	Bell-Coleman cycle, Refrigerating effect, problems	2
	Vapour compression refrigeration system, COP, problems	1
	Influence of various parameters on cycle performance, Vapour Absorption cycle,	1
PSYCHROMETRY AND AIR CONDITIONING	Introduction, Psychrometric properties, Psychrometric chart,	1
	Problems Psychrometric processes	2
	Types of Air conditioning systems,	2
	Total	12

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LESSON PLAN & DELIVERY: (Write period wise instruction schedule in detail)

ME-210

SL. NO.	TOPIC S TO BE COVERED	NO. PERIODS
1	General discussion, Syllabus dictation, importance of Thermodynamics subject	2
2	Units, dimensions, Mass, Weight, Force, Higher and Lower units prefixes to be adopted discussion	1
3	Problems on Mass, weight and force, density calculations	2
	UNIT 1 - FUNDAMENTAL CONCEPTS AND DEFINITIONS Total	5
4	Thermodynamic system, control volume, Types of systems- examples , Microscopic and Macroscopic study of matter - differences	1
5	State, change of state, path of change of state, process, cycle, Types of properties Intensive, extensive- examples, intrinsic and extrinsic	1
6	Condition for using a certain quantity as a property, problems on it	1
7	Thermodynamic equilibrium, Quasistatic process explanation	1
8	Zeroth law of thermodynamics, explanation, Temperature measurement	1
9	Problems on temperature measurement	1
10	Perfect gases, Boyles and Charles laws	1
11	Avagadros law, Equation of state, characteristic gas equation, relation between Cp and Cv	1
12	Problems on Perfect gases (gas laws)	1
	UNIT I I WORK AND HEAT Total 14	
13	Work definition, units, thermodynamic definition, calculation of displacement work	1
14	Work done in various non flow processes	1
15	Different types of work transfer	1
16	Heat, definition, units, heat calculation for different processes	1
17	Point functions, path functions, work and heat are path functions explanation	1
18	Problems on heat and work	3
	UNIT II First law of Thermodynamics for Non flow systems Total	22
19	Joules experiment, First law of TD for a closed system undergoing a cycle and problems on it	1
20	First law of TD for a system for a change in state of system, internal energy , energy is a property of the system proof	1
21	Internal energy and enthalpy and their relation to C_p and C_v	1
22	First law applied to different non flow processes and derivation of law for reversible adiabatic process, PMMI	2
23	Problems on First law of TD for individual processes and for cycles	4
	UNIT IIIFirst law of Thermodynamics for Flow systems Total	31
24	Steady flow process, Control volume, Steady flow energy equation derivation	1.5
25	SFEE applied to different devices	1.5
26	Problems on First law of TD for flow systems	3
	UNIT III SECOND LAW OF THERMODYNAMICS Total	37
27	Limitations of First law of TD, Importance of Second law, Cyclic Heat engine, Energy Reservoirs	1
28	Kelvin Planck Statement of II law of Thermodynamics, Refrigerator and Heat pump	1
29	Proof for Equivalence of two statements	1

	UnIT IV Ideal(Reversible cycles) Total	40
30	Reversibility, Irreversibility, Causes of Irreversibility, Conditions for reversibility	1
31	Carnot cycle explanation and derivation for thermal efficiency	1
32	Reversed heat engine, Carnot's theorem -proof	1
33	Corollary of Carnot's theorem, proof	1
34	Absolute thermodynamic temperature scale explanation, Efficiency, COP of refrigerator and heat pump expressions in terms of Temperatures	1
35	Third law of thermodynamics	0.5
36	Problems on II law of thermodynamics	2.5
	UNIT IV- ENTROPY Total	48
37	Two reversible adiabatic processes can't intersect, Clausiu's theorem	1
38	Entropy a property of the system, temperature entropy plot,	1
39	Entropy changes for different non flow processes	1
40	Clasius inequality proof	1
41	Entropy change of an Irreversible process expression, Entropy principle,	1
42	Expressions for entropy change for a perfect gas ,Problem on Clasiusenquality,	1
43	Problems on Entropy change	3
	UNIT V –Availability & Irreversibility Total	57
44	High grade and Low grade energies, Available energy, Available energy referred to a cycle	1
45	Decrease in available energy when heat is transferred through finite temperature difference	1
46	Available energy from a finite energy source, Quality of energy, Maximum work in a reversible process	1
47	Reversible work in steady flow process, reversible work in closed system	1
48	Useful work, dead state, Availability	1
49	Useful work, dead state, Availability	1
50	Availability in steady flow process and for non flow process	1
51	Problems on Availability	2
	UNIT V AIR STAND CYCLES Total 66	
52	Gas power cycle introduction, Air standard efficiency, Piston cylinder arrangement, mean effective pressure	1
53	Otto cycle, derivation of thermal efficiency and mean effective pressure	1
54	Diesel cycle , derivation of thermal efficiency and mean effective pressure	1
55	Dual combustion cycle, derivation of thermal efficiency and mean effective pressure	1
56	Brayton cycle, derivation for thermal efficiency	1
57	Problems on Otto, Diesel, dual and Brayton cycles	3
58	Comparision between Otto, diesel and dual for two conditions (i) constant compression ratio and same peak pressure and temperature	1
	Total	**75**

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LESSON PLAN & DELIVERY: ME-211-Engg Metallurgy

R16 -Regulations

UNITS	Periods
UNIT I	
Metallurgy:	
Classification of materials and properties of materials	2
Testing and evaluation of properties	2
Tensile test, Compression test, Hardness & impact testing	4
Non destructive testing methods	
Dye penetrant test, Ultrasonic test,Radiography,Eddy current testing.	4
UNIT II	
Constitution of Alloys and Phase diagrams	
Necessity of Alloying	
Types of Solid Solutions	
Gibbs Phase Rule Hume-Rothery's Rules, Lever rule, Iso morpheus, Eutectic, Partial eutectic systems, Intermediate phases	6
Iron –carbon system:	2
Transformations in the solid state – allotropy	
Iron-Iron Carbide Phase Diagram	4
UNIT III	
TTT diagrams for eutectoid-hypo and hyper eutectoid steels	6
martensite and bainitic transformation	
Heat Treatment:	1
Introduction and purpose of heat treatment	
Annealing, Normalizing, Hardening, Tempering, Austempering and Martempering,	
Age hardening and Surface Hardening of Steel	5
UNIT IV	
Ferrous And Non Ferrous Materials:	3
Composition, properties and application of ferrous alloys (steels and CI)	3
Nonferrous metals and their alloys.	2
Brief study, copper, aluminum alloys	
Ceramic materials :	2
Crystalline ceramics, glasses, cermets, abrasive materials	2
Plastics: Injection and blow moulding techniques.	
UNIT v	
Powder Metallurgy:	3
Powder metallurgy process, preparation of powders	3
Characteristics of metal powders	2
Mixing, compacting and sintering.	
Applications of Powder Metallurgy.	
Composite Materials:	
Classification based on matrix, classification based on reinforcement,	4
Types of Matrices and Reinforcements. Examples and Applications.	
TOTAL	**60**

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R V R & J C COLLEGE OF ENGINEERING, *(Autonomous)*
DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R16

Title of the Course	BASIC ELECTRONICS AND MICROCONTROLLERS
Course Code	ME 212
Year & semester	II/IV Year B.Tech. - Second Semester

UNIT I	
Basic Circuit Theory Concepts: Mesh analysis & Nodal Analysis of Simple Electric circuits: Circuit theorems: Thevinen & Norton's Theorems.	1
Basic Electronic Devices: PN junction diode: Principle	1
characteristics: Zener diode: Principle characteristics	1
Rectifiers: Definition	1
Half wave rectifier	1
Full wave rectifier; BJT: Principle & operation Input & output characteristics	1
Transistor as a switch	1
Transistor as an amplifier.FET: Principle & operation characteristics of JFET & MOSFET.	1
UNIT II	
Analog Electronics: Operation amplifiers: Definition of op-Amplifiers	1
Block diagram of op -Amp	1
details of op - Amp characteristics	1
Op - Amp Configurations: Inverting configuration	1
Non- Inverting configuration.	1
Op Amplifiers Applications: Summing Amplifier	1
Difference Amplifier	1
Integrator	1
Differentiator	1
Instrumentation amplifier	1
Comparator	1
Schmitt trigger.	1
UNIT III	
Digital Electronics: Number systems: Decimal	1
Binary Octal	1
Hexa - decimal number systems.	1
Boolean Algebra & Logic Gates: Boolean Logic Postulates. Basic logic gates	1
Universal Logic gates	1
Boolean expression simplification using K - Map Method up to 4 variables.	1
Combinational Logic Circuits: Definition	1
Combinational circuit designs Procedure	1
Design of Combinational Circuits: half - Adder	1
Full - adder	1
Half Sub tractor	1
Full Sub tractor	1
Decoder	1
Encoder	1

Multiplexer	
DeMultiplexer.	1
UNIT IV	1
Sequential Logic Circuits: Definition	
Flip - flops: SR JK T D.	1
Race around condition	1
Master - slave J.K.Flip - flop	1
Counters: Asynchronous versus synchronous counters	1
Design of ripple counters shift registers.	1
UNIT V	1
Introduction: Introduction to microcontrollers	
comparing microprocessors and microcontrollers	1
Architecture: Architecture of 8051	1
pin configuration of 8051 microcontroller	1
Input/output pins	1
ports and external memory	1
counters and timers	1
serial data Input / Output and interrupts.	1
	50

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R V R & J C COLLEGE OF ENGINEERING, *(Autonomous)*

DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R16

Title of the Course	BASIC MANUFACTURING PROCESS LAB
Course Code	ME 254
Year & semester	II/IV Year B.Tech. - Second Semester

Topics	No. of SLOTS
PATTERN MAKING : Solid pattern , Split pattern	**2**
MOULDING : Stepped cone pulley, Hand wheel, Bush	**3**
FITTING : Six Standard Exercises	**2**
TURNING: Plain, Step and Taper turning, Right-hand and Left-hand threads, Eccentric turning, Knurling and contour turning	**3**
	10

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LESSON PLAN ME255-(R16) COMPUTER APPLICATIONS IN MECHANICAL ENGINEERING

SNO	TOPIC	DURATION(hours)	MODE OF DELIVERY
1	Introduction To C , Data Types, Header Files, arrays, Loops, Conditional Statements, User Defined Functions...Etc	3	POWER POINT
2	Sample C Programs	3	DESKTOP / PPT
3	R-K Method C-Program	1	POWER POINT
4	Execution of R-K Method for different numerical problems using C-program	3	DESKTOP
5	N-R Method C-Program	1	POWER POINT
6	Execution of N-R Method for different numerical problems using C-program	3	DESKTOP
7	Gauss Elimination Method program	1	POWER POINT
8	Execution of Gauss elimination Method for different numerical problems using C-program	3	DESKTOP
9	Numerical Integration program	1	POWER POINT
10	Execution of Numerical Integration Methods for different numerical problems using C-program	3	DESKTOP
11	2d-Stresses C-Program	1	POWER POINT
12	Execution of 2D-Stresses for different numerical problems using C-program	3	DESKTOP
13	Thick-Thin Cylinders C-Program	1	POWER POINT
14	Execution of Thick-Thin Cylinders program for different numerical problems using C-program	3	DESKTOP
15	Beam Deflections program	1	POWER-POINT
16	Execution of Beam deflections program for different numerical problems using C-program	3	DESKTOP
17	Air Standard cycles Program	1	POWER POINT
18	Execution of Air standard cycles program for different numerical problems using C-program	3	DESKTOP

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LESSON PLAN
Regulation: R16

Title of the Course	BASIC ELECTRICAL AND ELECTRONICS LAB
Course Code	ME 256
Year & semester	II/IV Year B.Tech. - Second Semester

Topics	No. of Lectures
ANY 5 IN ELECTRICAL & 5 IN ELECTRONICS	
Electrical Engineering	
1. Verification of KCL / KVL	1
2. OCC of a DC Shunt Generator	1
3. Load Test on DC Shunt Generator	1
4. Speed Control of DC Shunt Motor	1
5. Swin burn Test	1
6. Speed control of stepper motor using Micro controller 8051	1
7. Temperature control using Micro controller 8051	1
Electronics Engineering	
1. VI characteristics of PN junction diode	1
2. VI characteristics of Zener diode	1
3. Common emitter configurations (BJT)	1
4. Characteristics of JFET	1
5. Logic gates using universal gate (NAND gate)	1
6. Combinational Circuits (half adder, full adder, half subtractor)	1
7. Verification of Flip-Flop (JK & D etc.,)	1
8. Code converters (Gray to Binary & Binary to Gray)	1
	10

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LESSON PLAN
Regulation: R16

Title of the Course	PROFESSIONAL ETHICS AND HUMAN VALUES
Course Code	ME301
Year & semester	III I/IV Year B.Tech. - First Semester

Topics	No. of Lectures	Tutorials
UNIT - I		
Morals, Values and Ethics	1	
Self-Confidence – Character- Valuing Time	2	
Courage - Honesty– Caring	1	
Sharing-Self respect – Respect for Others	2	
Spirituality-Living Peacefully	1	
Integrity- Commitment – Empathy	2	
Work Ethics - Service Learning – Stress management	2	
Civic Virtue –Co-operation	1	
UNIT II		
Scope and aims of Engineering Ethics -Senses of 'Engineering Ethics'	2	
Variety of Moral Issues – Types of Inquiry	2	
Engineering Ethics and Philosophy Moral Dilemmas	2	
Moral Autonomy – Kohlberg's theory – Gilligan's theory	3	
Criteria for a profession-Multiple Motives-Models of Professional Roles	3	
UNIT III		
Moral reasoning and Ethical Theories	1	
Virtue Ethics- Utilitarianism	1	
Duty ethics-Right ethics-Self interest	1	
Customs and Religion -Uses of Ethical Theories	1	
Testing of Ethical Theories	2	
Engineering as experimentation – Similarities to Standard Experiments	2	
Contrasts with Standard Experiments-Engineers as Responsible Experimenters	2	
A Balanced Outlook on Law – Problems with Law in engineering	2	
The Challenger Case Study	1	
UNIT IV		
Safety and Risk	1	

Assessment of safety and risk – Risk benefit analysis and reducing risk	2	--
Testing for safety, safe exit	1	
The Three Mile Island and Chernobyl case studies	2	
Collegiality and loyalty – Respect for authority	2	
Collective bargaining – Confidentiality	1	
Conflicts of interest – Occupational crime	2	
Intellectual property rights (IPR) – Discrimination	1	
UNIT V		
Professional rights	1	
Employee rights-Whistle blowing-discrimination	1	
Multinational corporations – Environmental ethics	1	
Computer ethics – Weapons development	1	
Engineers as managers	1	
Consulting engineers – Engineers as expert witnesses and advisors	2	
Moral leadership – codes of ethics-role and limitations of codes	1	
Sample code of ethics like ASME, ASCE, IEEE, Institution of Engineers (India), Indian Institute of Materials Management, Institution of electronic and telecommunication engineers	2	
	60	15

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Course Code:	ME 302
Title of the Course:	DESIGN OF MACHINE ELEMENTS
Year & semester:	Third Year B.Tech First Semester
Periods per Week:	Lectures-4 and Tutorial-1

COURSE OBJECTIVES:

The following are the objectives of the course:

1. This course is meant to formulate a practical problem and use the engineering tools and engineering sciences to solve it.
2. To illustrate the integration of design principles, materials selection and fundamentals of design concepts.
3. The loading conditions and accompanied stress and strain, forces, moments, torque.
4. To develop ability to analyze, design and/or select machine elements such as screws, fasteners, threaded joints under static conditions
5. Ability to analyze design of riveted and welded joints

LEARNING OUTCOMES:

At the end of the course the students will be able to:

a. This course provides the knowledge to design simple mechanical components subjected to static loads and their failure and concept of factor of safety in design of simple mechanical parts

b.To apply knowledge in designing mechanical components subjected to stress concentration combined static & variable loads by applying Soderberg, Goodman & Gerber's Equations.

c. The student will be able to design power screws like screw jack subjected to various stresses.

d. To design riveted joints, including boiler joint and lozenge joint subjected to internal pressure, axial loads & eccentric loads.

e. Develop and use appropriate analytical models and software for design, modeling, and analysis

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Course Code:	ME 302
Title of the Course:	DESIGN OF MACHINE ELEMENTS
Year & semester:	Third Year B.Tech First Semester
Periods per Week:	Lectures-4 and Tutorial-1

LESSON PLAN & DELIVERY: R-16 Batch

	TOPIC	PERIODS
UNIT 1	Basic Design Procedure, Requirements for Design of Machine Elements & Traditional Methods of Design	2
	Design synthesis, Use of various standards in Design, Manufacturing considerations in Design	2
	Preferred Numbers, their significance & different series of preferred numbers used for components with examples	1
	Common Engineering Materials & their properties, Suitability for Manufacture & various applications	2
	Simple stresses on Mechanical components	2
	Combined stresses on Various Mechanical components	2
	Design of components using various theories of failure & Factor of safety	3
UNIT 2	Stress Concentration, factors affecting Stress Concentration, Reduction of stress concentration	2
	Fluctuating stresses, Fatigue strength, Endurance limit, Notch sensitivity	2
	Reversed stresses, Good man's line, Soderberg line for combined stresses	3
	Modified Good man's line, Gerber's parabola for combined stresses, Impact stresses	3
	Power screws, Types ,Stresses in power screws, Efficiency of power screw	3
	Design of screw jack, Design of Turn Buckle	3
UNIT 3	Types of fasteners, Riveted joints, Terminology associated to Riveted joints	3
	Boiler joint & Lozenge joint	6
	Welded joints & Eccentrically loaded welded joints	5
UNIT 4	Bolted joints, Types , Bolts of uniform strength	3
	Materials used & Manufacture of Bolted joints	1
	Eccentrically Loaded bolted joints in shear	2
	Eccentric load perpendicular to axis of bolt	2
	Eccentric load on circular base	2
	Design of sleeve & socket cotter joint	2
	Design of socket & spigot cotter joint	2
	Design of gib & cotter joint	1
UNIT 5	Introduction to Riveted joints	1
	Design of boiler joints	2
	Some problems on boiler joints	1
	Design of Lozenge Joint	1
	Some problems on Lozenge Joint	1
	Design of joints under eccentric loading	2
	Types of Welded joints	1
	Design of Eccentrically loaded welded joints	2
	Some problems on Eccentrically loaded welded joints	1

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R V R & J C COLLEGE OF ENGINEERING, *(Autonomous)*
DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R16

Title of the Course	METAL CUTTING & MACHINE TOOLS
Course Code	ME 303
Year & semester	III/IV Year B.Tech. - First Semester

Topics	No. of Lectures	Tutorials
UNIT - I		
Machining Processes and Machine Tools		
Introduction	1	1
Primary and Auxiliary Motions in Machine Tools	1	
Parameters defining working motions of a Machine Tool	1	
Lathe		
Constructional details, specifications, classification of lathes	2	1
Lathe accessories - various work holding devices	2	
Lathe Mechanisms: Spindle speed Mechanisms in Belt driven and All Geared Head stock lathe, Apron and Half-nut mechanisms.	3	1
Lathe operations including taper turning and thread cutting and related problems	2	
UNIT II		
Drilling Machines		
Types and specifications, spindle feed mechanism	2	1
Drilling operations, drilling time	2	
Shaping and Planning		
Constructional details, types of shapers	2	1
Types of planers, specifications	2	
Quick Return Mechanism in shapers and planers	2	
Automatic feed mechanisms shapers and planers	2	
UNIT III		
Grinding Machines		
Types of grindingmachines	2	1
constructional details cylindrical, centerless and surface grinding machines	2	1
Tool and cutter grinding machines	2	
Wheel materials, Selection and specification of grinding wheels,	2	
Truing and Dressing of grinding wheels	2	
Surface Finishing Operations: Honing and Lapping operations	2	
UNIT IV		
Milling Machines		

Working Principle, Size and Specification	2	1
Up and Down Milling	2	
Types of milling machines, Description and working of Universal Milling machine	3	1
Milling operations, Milling cutters	2	
Indexing methods and Indexing Head, related problems	3	1
UNIT V		
Theory of Metal Cutting		
Introduction, Basic elements of machining	1	1
Nomenclature of single point cutting tool, Tool Geometry	1	
Mechanics of chip formation, Types of chips	1	1
Determination of shear angle and chip thickness ratio	1	
stress and strain in the chip, velocity relations	1	
Merchant's theory of orthogonal cutting forces, related simple problems	2	1
Tool wear, Tool life and Tool life criteria	1	
Heat Generation and temperature distribution in metal cutting	1	1
cutting fluids- types and required characteristics	1	
Cutting Tool Materials.Requirements of Tool materials and types	2	1
Economics of machining		
	60	15

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ME304 (R16) ICGT LESSON PLAN

SL. NO.	TOPIC S TO BE COVERED	NO. PERIODS
1	General discussion, Review of thermodynamics fundamentals	2
2	Syllabus dictation, course objectives discussion	1
	UNIT 1 - IC Engines Total	**3**
3	Heat engines, I.C and E.C engines relative merits & demerits, engine components, nomenclature	1
4	I.C. Engines general classification and by cylinder arrangement	1
5	Working principles of 4 stroke S.I and C.I engines	1
6	Working principles of 2 stroke S.I and C.I engines	1
7	Theoretical and Actual indicator diagrams of SI & CI engines, Valve timing diagrams of 4 stroke SI engines Theoretical and actual	1
8	VTD of CI engines and valve settings importance, PTD of two stroke engines	1
9	Differences between SI and CI engines, 4 stoke and 2 stroke engines and applications	2
	FUEL SUPPLY SYSTEMS –SI ENGINES Total 11	
10	Induction system, A/F Ratio, Stoichiometric A/F ratio, rich mixture, lean mixture, Calculation of chemically correct A/F ratio, mixture requirements at different conditions	1
11	Carburetion, Functions of carburetor, Simple float type carburetor working	1
12	Drawbacks of Carburetor, Fuel injection system importance, Types	1
13	Electronic fuel injection system, MPFI	1
FUEL SUPPLY SYSTEMS –CI ENGINES Total		**15**
14	Fuel supply system components for CI engine, Fuel supply system requirements	1
15	Fuel injection system types	1
16	Bosch fuel pump working	1
17	Electronic injection system, CRDI	1
	UNIT II COMBUSTION PROCESES - SI ENGINES Total	**19**
18	Combustion definition, requirements, Normal combustion, Flame velocity, factors affecting flame speed, Pressure Vs Crank angle diagram	1
19	Abnormal combustion- Pre-ignition, Detonation factors affecting detonation	2
20	SI engine fuels , required qualities and Octane rating of fuels	1
	COMBUSTION PROCESES - CI ENGINES Total 23	
21	Normal combustion and ignition delay	1
22	Combustion knock in CI engines, factors affecting ignition delay	1
23	CI engine fuels , required qualities and Cetane rating of fuels	1
	TESTING OF I.C. ENGINESTotal 26	
24	Energy flow through I.C.Engine diagram, important performance parameters discussion, Indicator diagram and evaluation of indicated power	1
25	Basic principle of Dynamometer, Evaluation of Brake power	1
26	Different types of dynamometers	1
27	Fuel consumption and air consumption estimation, A/F ratio	1
28	Mechanical, Brake thermal, Indicated thermal, volumetric efficiencies, SFC calculation	1
29	Heat balance calculations, Exhaust gas calorimeter importance, heat balance sheet	2
30	Problems on I.C.Engines	3
	UNIT III PERFORMANCE OF IC ENGINES	
31	Variables affecting engine performance of SI, CI engines and methods to improve the performance,	2
32	Performance curves	1
	RECIPROCATING COMPRESSORS Total 39	
32	Compressors importance, uses of compressed air, classification of reciprocating	1

	compressors, working of single stage reciprocating compressor	
33	Derivation of work required for isothermal, polytropic and adiabatic compression processes with out clearance volume	1
34	Effect of clearance volume, isothermal and volumetric efficiencies definitions	1
35	Derivation of volumetric efficiency for two conditions (i) when suction and free air conditions are same and (ii) when they are different	1
36	Problems on single stage compression	2
37	Multistage compression importance, condition for optimum pressure ratio and work done for two stage compressor and extension to multistage compression	2
38	Problems on multistage compression	3
	UNIT IV ROTARY COMPRESSORS **Total 50**	
39	Introduction, classification, working of Roots blower	1
40	Working of Vanes blower, Derivation for work done	1
41	Problem on Roots and Vane blower	1
42	Static and total head values, difference between adiabatic and isentropic processes, isentropic efficiency	1
43	Centrifugal compressor, components, working , velocity vector diagrams, derivation of work done	2
44	Slip, Slip factor, Pressure coefficient, Pre whirl concepts	1
45	Axial flow compressor, working , velocity triangles	1
46	Degree of reaction, derivation to show blades are symmetrical for 50% DR, polytropic efficiency	1
47	Surging, Choking and Stalling concepts	1
48	Centrifugal Vs Axial flow compressors, Reciprocating Vs Rotary compressors	1
49	Problems on Centrifugal and Axial flow compressors	2
	UNIT V GAS TURBINES, JET AND ROCKET PROPULSION **Total 64**	
50	Gas turbine merits and demerits, classification- Closed and open cycle gas turbines, Constant pressure and constant volume gas turbines	1
51	Closed cycle gas turbine analysis, derivation of thermal efficiency, work ratio	1
52	Compressor and turbine efficiencies, analysis with efficiencies taken into account	1
53	Problems on simple gas turbines	1
54	Methods of improving performance, Intercooling, Reheating and Regneration condition for optimum pressure ratio in intercooling and reheating, effectiveness definition	2
55	Problems on gas turbines with regeneration, intercooling and reheating	2
	JET & ROCKET PROPULSION **Total 72**	
56	Basic principle of jet air crafts, Types, working of Turbo jet, Turbo prop	1
57	Working of ramjet, pulse jet	1
58	Definitions & Derivation for Thrust, Thrust power, Propulsive power, propulsive efficiency, Thermal efficiency	1
59	Problems of jet air crafts	2
60	Principle of Rocket propulsion, classification	1
61	Solid and Liquid propellant rockets, Pressure feed and pump feed systems, restricted burning and unrestricted burning rockets	1
62	Derivation of Thrust, Propulsive power , propulsive efficiency, problem on rocket	1
		Total 80

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Mt-305

ME-311(Operations Research) [8-16] 12 R-16

1. LESSON PLAN & DELIVERY:

UNIT- I

LINEAR PROGRAMMING

TOPIC	NO.OF PERIODS
Introduction: The origin., Develpoment of Operations Research, scope	1
Mathematical formulation of the problem	1
graphical method	1
Exercises on graphical method	1
Simplex method,	1
artificial basis technique	1
Degeneracy,	1
alternative optima,	1
unbounded solution,	1
Infeasible solution.	1
The essence of duality theory.	1
Primal dual relationship.	1
The role of duality in sensitive analysis.	1
Exercises on duality theory	1
Dual Simplex method	1
UNIT-II **TRANSPORTATION PROBLEM**	
Introduction to the problem	1
formulation of a transportation problem	1
Basic feasible solution by north-west corner method	1
Vogel's approximation method,	1
Least cost method.	1
Finding optimal solution by MODI method	1
degeneracy,	1
unbalanced transportation matrix	1
Maximization in transportation model.	1
A streamlined simplex method for the transportation Problem .	1
UNIT-III **ASSIGNMENT PROBLEM**	
One-to-one assignment problem,	1
optimal solution,	1
Unbalanced assignment matrix.	1
Flight scheduling problems,	1
Traveling salesman problem.	1

DYNAMIC PROGRAMMMING	
Introduction, Characteristics of D.P. model,	2
The recursive equation approach	2
Solution of an L.P. by D.P.	2
UNIT-IV	
QUEING THEORY	
Queuing systems and their characteristics.	1
Analysis of Markovian chains	1
Transition diagram,	1
M/M/1 : FCFS/ ∞ / ∞ queuing model	2
M/M/1 : FCFS/ ∞ / N queuing model	2
THEORY OF GAMES	
Introduction, Rectangular two person zero person, given matrix	2
solution of rectangular games in terms of mixed strategies , solution of 2x2	2
concept of dominance to reduce the nx2 games	1
games without saddle points	1
graphical method for 2xn and	1

UNIT V

SIMULATION	
Definition and applications.	1
Mantel Carlo simulation.	3
Random numbers and random number generation	2
Mixed congruential method, additive congruential method and multiplicative congruential method.	1
Application problems in queuing and inventory.	2
DECISIONTHEORY	
Introduction, decision under certainty	2
Decision under risk- expected value criterion	1
expected value combined with variance criterion	1
decision under uncertainty	1

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LESSON PLAN
Regulation: R16

Title of the Course	DYNAMICS OF MACHINES & VIBRATION
Course Code	ME 306
Year & semester	III/IV Year B.Tech. - Fifth Semester
Nature of the Course	Core Competence

Topics	No. of Lectures	Tutorials
UNIT - I		
DYNAMIC FORCE ANALYSIS		
Introduction, D'Alembert's Principle, Equivalent Offset Inertia Force	1	--
Dynamic Analysis of Slider - Crank mechanism, Velocity and Acceleration of piston,	1	1
Angular velocity and Angular Acceleration of Connecting Rod, Piston Effort (Effective Driving Force), Crank Effort.	1	
Turning Moment on Crankshaft, Inertia of connecting Rod.	1	1
GOVERNORS		
Introduction, Types of Governors	1	--
Watt Governors& problems	1	
Porter Governor& problems	1	--
Hartnell Governor& problems	1	1
Sensitiveness of a Governor, Hunting, Isochronism, Stability, Effort of a Governor, Power of a Governor, Controlling Force.	1	--
UNIT - II		
BALANCING		
Introduction, Static balancing & Dynamic balancing	1	--
Balancing of Several Masses in a single plane	1	1
Balancing of Several Masses in Different planes		1
Balancing of Reciprocating Mass, primary& Secondary Balancing	1	1
Balancing of In-line Engines	1	--
Balancing of V - Engines.	1	--
GYROSCOPES		
Angular Velocity, Angular Acceleration, Gyroscopic Torque	1	--
Gyroscopic Effect on Naval Ships during pitching & rolling motion problems	1	--
Stability of a Two-Wheel vehicle.	1	1

UNIT - III		
FUNDAMENTALS OF VIBRATIONS		
Introduction, Definitions, Simple Harmonic motions	1	--
Addition of two simple Harmonic motion of the same frequency,	1	1
UNDAMPED FREE VIBRATIONS OF SINGLE DOF SYSTEM		
Introduction, Derivations of differential equations	1	1
solution of differential equation	2	1
Torsional vibrations, Equivalent stiffness of spring combinations	1	
Energy method.	2	1
UNIT – IV		
DAMPED FREE VIBRATIONS OF SINGLE DOF SYSTEM		
Introduction, Different types of damping	1	--
Free vibrations with viscous damping	1	1
Logarithmic Decrement	1	1
Viscous dampers, Coulomb damping, Structural damping, Interfacial damping.	1	--
FORCED VIBRATIONS OF A SINGLE DOF SYSTEM		
Introduction,Forced vibrations with constant Harmonic excitation	1	--
Forced vibration with rotating and reciprocating unbalance	2	1
forced vibrations due to excitation of the support	2	--
UNIT-V		
Critical speed of a light shaft having a single disc without damping, a light shaft having a single disc with damping.	2	1
Vibration isolation and Transmissibility,	2	1
Vibration measuring Instruments	1	--
TWO DOF SYSTEMS		
Introduction, principal modes of vibration, Problems	2	1
Un damped dynamic vibration absorber	2	
	60	15

Signature of The staff

Signature of The H.O.D

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R.V.R. & J.C. COLLEGE OF ENGINEERING (A), GUNTUR-522 019

MECHANICAL DEPARTMENT

LESSON PLAN

ME -351- MACHINESHOP PRACTICE Lab

S.No	Experiment Name	periods
1.	Lathe-1(Drilling, boring and Internal taper turning)	2
2.	Lathe-2(Boring and internal thread cutting)	2
3.	Lathe-3(Two start thread cutting)	2
4.	Planing (Keyway on a rectangular block)	2
5.	Milling (Gear cutting)	2
6.	Vertical milling	2
7.	Shaping job-1(stepped surface)	2
8.	Shaping job-2(Angular surface)	2
9.	Grinding (surface grinding on rectangular block)	2
10.	Slotting (Splines)	2

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ME [illegible] MACHINESHOP PRACTICE Lab

COURSE OBJECTIVES:

1. Students will be able to understand the basic machining Process and operation of the machine and its controls.

2. Students will be able to understand the speeds & feed mechanism of different types of machine tools. 3. To provide the knowledge regarding primary & auxiliary motions of machine tools.

4. To provide the basic knowledge regarding the tool geometry and its significance in machinery operations.

5. To provide the basic knowledge w.r.t single point & multi point cutting tools.

COURSE OUTCOMES:

a. Students can themselves operate on the machine and produce the given components comfortably.

b. Students should be well aware about the range of speeds, feed and depth of cut while operating various mechanisms.

c. Students distinguish various machine tool operations.

d. Students learn chip formation process, chip removal processes.

e. Students identify the difference between roughing and finishing operations and machining conditions related to these operations.

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R V R & J C COLLEGE OF ENGINEERING, *(Autonomous)*

DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN

Regulation: R16

Title of the Course	FUELS & IC ENGINES LAB
Course Code	ME 352
Year & semester	III/IV Year B.Tech. - First Semester

Topics	No. of Lectures
1. Viscosity Measurement using Redwood viscometer No. I or No. II	1
2. Viscosity Measurement using Saybolt viscometer	1
3. Calorific value of gas using Junker's gas calorimeter	1
4. Measurement of flash point using Pensky Martin's and Abel's apparatus	1
5. Measurement of flash and fire points using Cleveland's apparatus	1
6. Valve timing and port timing diagrams	1
7. Air compressor - To determine Volumetric and Isothermal efficiencies	1
8. Blower test Rig. - To determine Overall efficiency	1
9. Single cylinder Diesel engine - Load test	1
10. Twin cylinder Diesel engine - Load test and Heat Balance test	1
11. Multi cylinder Petrol engine - Load Test, and Morse test	1
12. Single cylinder Diesel engine - variable compression ratio test	1
	10

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DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R16

Title of the Course	MODELING LAB
Course Code	ME 353
Year & semester	III/IV Year B.Tech. - First Semester

Topics	No. of Lectures	Tutorials
List of Modules to be Covered		
SKETCHER		
PART		
MODELLING		
WIREFRAME & SURFACE MODELING		
ASSEMBLY		
MODELLING		
DRAFTING with examples of Assembly drawings		

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LESSON PLAN
Regulation: R16

Title of the Course	MANUFACTURING ENGINEERING
Course Code	ME 307
Year & semester	III/IV Year B.Tech. - Second Semester

Topics	No. of Lectures	Tutorials
UNIT - I		
Jigs & Fixtures		
Introduction, design considerations in jigs & fixtures	2	
The principle of six point location, locating pins	3	
Clamping and clamping devices	2	
A few examples of drilling jigs like box type, template jig, indexing jig	3	
Fixtures - Lathe, milling	2	
UNIT II		
Gear Manufacturing		
Introduction to various gear manufacturing methods	2	
Gear shaping, gear hobbing	2	
Bevel gear generation – principles and methods	2	
Gear finishing methods	1	
Thread Manufacturing Processes		
Introduction to thread manufacturing techniques	1	
Thread chasing on turret lathe, die the threading and tapping	2	
Thread rolling, thread milling, and thread grinding	2	
UNIT III		
Unconventional Machining Processes		
Introduction, principles of operation	2	
Equipment and applications of AJM, USM, WJM, EDM, ECM, CHM, EBM, LBM and PAM.	10	
UNIT IV		
Press Working Tools		
Major components of a press	1	
shear action in die cutting operation	1	
Blanking and Punching operations	1	
clearance and shear as applied to punching / blanking operations	1	
centre of pressure and its calculation	1	
scrap strip layout for blanking, simple related problems	1	

Types of dies - compound die, combination die, progressive die. Drawing die	2	
Calculation of blank size, number of draws, percentage reduction	2	--
Radius on punch and die, total drawing force	1	1
Bending die: Bending methods, spring back, bending allowance, bending force	2	
UNIT V		
Computer Aided Inspection		
Types of CMM (Coordinate Measuring Machines), CMM construction	1	
CMM operation and programming, CMM software	2	
Flexible inspection systems, CMM applications and benefits	2	
Machine vision		
Principle and introduction to stages in machine vision	1	
Image acquisition and digitization	2	
Image processing and analysis	2	
Interpretation, machine vision applications	2	
	60	15

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30/1/2017

LESSON PLAN & DELIVERY

	TOPIC	PERIODS
UNIT I	Design of solid and hollow shafts in bending and torsion	2
	Design of shafts under axial loads	1
	Design of shafts under combined axial, bending and torsion loads	2
	Introduction, classification and various applications of keys.	1
	Design of square and flat keys	2
	Introduction, classification and applications of various couplings	1
	Design of Rigid couplings	2
	Design of Flexible couplings	1
UNIT 2	Introduction, Lubrication, types and properties of Lubricants	1
	Bearings, types of bearings, materials used for bearings, applications	1
	Journal bearing design	1
	Problems on Journal bearing design	2
	Design of ball bearings for static load	1
	Design of ball bearings for dynamic and equivalent radial loads	2
	Design of Roller bearings for static load	1
	Design of Roller bearings for dynamic and equivalent radial loads	1
	Selection of ball and roller bearings	2
UNIT 3	Introduction, classification, construction and applications of belt drives	1
	Geometric relationships for flat and V-belt drives	2
	Condition for Max power in Flat and V-belt drives	2
	Selection of V-belts and Design procedure	2

	Selection of pulleys	1
	Introduction, Advantages and Applications of Chain drives	1
	Design of roller chains	2
	Selection of roller chains	1
UNIT 4	Introduction, classification of Gears, Terminology of spur Gears	2
	Gear tooth failures and force analysis for spur Gears	1
	Design of spur Gears using Lewis beam strength equation, Lubrication	1
	Spur Gear Design Problems	2
	Terminology of Helical Gears, Virtual no of teeth, Tooth proportions	2
	Force analysis of Helical Gears, Beam strength using Lewis Equation	1
	Design of Helical Gears under static, dynamic and wear loads	1
	Helical Gear Design Problems	2
UNIT 5	Introduction, Classification of Bevel Gears	1
	Terminology and force analysis of Bevel gears	1
	Beam strength of bevel gears using Lewis Equation, Wear strength of bevel gears	1
	Bevel Gear Design Problems	3
	Types, Terminology and force analysis of worm and Worm gears	1
	Strength rating of worm gears	1
	Wear rating of worm gears, Thermal Rating	1
	Design Problems	3

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ME 309- HEAT TRANSFER- R16		
LESSON PLAN		
TOTAL LECTURE HOURS- 60		
UNIT - I		
CHAPTER	**SUB CHAPTERS**	**LECTURE HOURS AND TUTORIALS**
Introduction:	Basic Modes of heat transfer- Conduction, Convection and Radiation definitions, their mechanisms and their governing laws	2
Steady state Heat Conduction	General conduction equation in Cartesian and Cylindrical coordinates- Initial and Boundary conditions.	1
One-Dimensional Steady State Heat Conduction	Heat flow through plane wall and cylinder with constant thermal conductivity,	2
	Heat flow through composite slab and Cylinders	3
	Thermal resistance, Electrical analogy,	1
	Uniform critical insulation thickness	2
	Heat generation in slabs	1
	TOTAL	12
UNIT II		
Extended Surfaces	Types, Applications, Fin materials.	1
	Heat transfer from fins with uniform cross section, Fin efficiency and Effectiveness.	4
	Problems	3
Transient Heat Conduction:	(One dimensional only) - Lumped heat capacity systems–plane wall, cylinder and sphere	2
	Problems	2
	TOTAL	12
UNIT III		
Forced Convection: External Flows:	Introduction, Principles of convection Hydrodynamic and thermal boundary layers and their thicknesses, concept of turbulence.	2
	Correlations for heat transfer in Laminar and Turbulent flows over a flat-plate. Prolems	2

	Relation between fluid friction and heat transfer in laminar flows - Reynolds-Colburn Analogy, problems.	2
	Heat Transfer in Horizontal Pipe Flow, problems.	2
Forced Convection: Internal Flows	Division of Internal Flow through Concepts of Hydrodynamic and Thermal Entry Lengths	1
	Use of Empirical Relations for Convective Heat Transfer in Horizontal Pipe Flow, problems	2
Total		12
UNIT IV		
Natural Convection:	Mechanism of natural convection, Velocity and Temperature profiles over a vertical heated plate,	1
	Correlations for vertical plates, horizontal plates, Problems	2
	Vertical and horizontal cylinders – Problems.	2
Heat Exchangers:	Classification, types of heat exchangers, Flow arrangement, Temperature distribution	2
	Overall heat transfer coefficient, Fouling factor,	1
	LMTD and NTU methods of Heat exchanger analysis, .	2
	Correction for LMTD for use with multipass and cross flow Heat Exchangers, Effectiveness	2
Total		12
UNIT V		
Radiation:	Basic Concepts and definitions, Absorptivity, Reflectivity, Transmissivity	1
	Concept of Black body, Intensity of radiation and Solid angle, Lambers Cosine law,	2

	Laws of Radiation- Planck's distribution law, Wein's displacement law, Stefan Boltzmann's law,	2
	Radiant Heat Transfer: Radiative heat exchange between Black surfaces	2
	Radiation shape factor, Radiation heat exchange between Gray bodies –Two small gray bodies, two infinite parallel surfaces, concentric cylinders/spheres , Small body enclosed and Large enclosure- (Only Problems with formulae derivations not required) Electrical Analogy, problems	3
	Radiation shields. Problems	2
ToTal		12

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R.V.R. & J.C. College of Engineering (Autonomous),
IV/IV Year B.Tech. - Second Semester
ME - ~~414~~ 310 FINITE ELEMENT ANALYSIS

LESSON PLAN & DELIVERY:

LESSON PLAN

UNITS	PERIODS
UNIT I	
Introduction:	
Objectives and Methods of Engineering Analysis	1
FDM Vs FEM ,Rayleigh – Ritz Method	2
Weighted Residual Methods	1
Introduction to Finite Element Method ,FEM Advantages ,	1
Disadvantages , FEM Applications	1
Stresses and Equilibrium	1
Strain Displacement relations	1
Stress - Strain relations for Plane stress and Plane Strain	1
FEM Procedure	2
	1
UNIT II	
One Dimensional Elements:	
Finite Element Modeling,	1
coordinates and shape functions,	1
Potential Energy approach - Assembly of Global stiffness matrix and load vector.	1
Finite element equations, Treatment of boundary conditions	1
Temperature Effects, Problems related to simple Axially loaded members	3
Analysis of Trusses:	
Element stiffness matrix, Stress Calculations	2
Problems limited to truss with three members only.	3

UNIT III	
Analysis of Beams:	
Derivation of Element stiffness matrix for two node,	2
two degrees of freedom per node, Beam element	1
Simple Problems.	3
Analysis of Frames:	
Element matrices	2
assembling of global stiffness matrix	1
solution for displacements, reaction, stresses.	3
UNIT IV	
Two Dimensional Elements:	
Finite element modelling of two dimensional stress analysis with constant strain triangles (CST)	2
Problems	3
treatment of boundary conditions	1
Finite element modelling of Axisymmetric solids subjected to Axisymmetric loading with triangular elements.	3
Problems	3
UNIT V	
Concepts of Iso parametric, Super parametric and Sub parametric Elements	1
Stiffness and Force Matrices for Two dimensional four noded Quadrilateral element	2
numerical Integration by using Gaussian Quadrature.	2
Dynamic Analysis:	
Formulation of finite element model	1
element matrices for one dimensional element	1
evaluation of Eigen values and Eigen vectors for a stepped bar by Characteristic Polynomial Technique	2
Problems	2
TOTAL	**60**

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Department of Mechanical Engineering

R (16)

Lesson Plan

Subject Name	**NanoTechnology**
Code	**ME311/■Â**
Year &Sem	**III Year II Sem**
Academic Year	**2018-2019**
Name of Faculty	**Dr.N.Govind**

	No.of periods
UNIT-I	
Introduction to Nanotechnology :History of Nano Technology Definition of Nanotechnology.	2
Nanoscience and Nano Technology. Feynman predictions on Nano Technology	2
Moore's law. Nano Technology applications in various fields	2
Nano Structures: Classification of Nanostructures- Zero dimensional-Nanoparticles.	2
One Dimensional Nanowires. Two dimensional Nano structures-Thin films.	2
Thin films,Examples	2
UNIT-II	
Top-Down Nanofabrication: Definiton: Top-Down fabrication methology-Deposition (or) Growing-Physical Vapour deposition methods.	2
Chemical Vapour deposition methods.	1
Lithography-Photo Lithography.	1
Soft lithography-Nano imprinting.	1
Etching-Physical and Chemical Etching.	1
Material modification –Methods.	1
Bottom-up Fabrication Methodology: Definition. Building block Fabrication	1
Physical fabrication approaches.	1
Chemical Vapour growth (VLS Mechanism).	1
Nano wires preparation, control of size and applications.	2
UNIT-III	
Characterization of Nano Structures: Electron microscopy- SEM	1
TEM	1
Scanning Probe Microscopy-STM.	2
AFM.	1
X-rays.	1
Self Assembly and Self Organization-Chemical Self assembly (SAMs).	1

Physical self assembly-examples.	2
Quantum dots applications.	1
Longmuir-Blodgett films.	1
layer-by-layer growth	1
UNIT-IV	
Special Nanomaterials: Fullerenes, Carbon Nanotubes (CNTs), Study of Structure of CNTs	2
Various methods of Synthesis of CNTs.	2
Applications of CNTs- Electronic, Optical and Mechanical properties, Advantages.	2
Nano Composites: Introduction to Nano materials and Nano composites.	2
Synthesis	2
Applications	2
UNIT-V	
MEMS and NEMS: Micro electromechanical systems-MEMs	2
Nano electromechanical systems-NEMs	2
Preparation and applications.	2
Mechanics at Nano Scale: Enhancement of mechanical properties with decreasing size.	2
Nanomachines	2
Nano Fluidics	2
Total number of instruction hours	60

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ME – 312/C REFRIGERATION & AIR CONDITIONING (R-16)

LESSON PLAN & DELIVERY:

Unit	TOPICS TO BE COVERED	Period
UNIT-I	Introduction	1
	Necessity and applications	2
	Unit of refrigeration and C.O.P, mechanical refrigeration	3
	Reversed Carnot cycle of refrigeration	4
	Bell Coleman cycle and Brayton cycle, open and dense air system	5,6
	Actual refrigeration system, problems	7,8
	Refrigeration needs of aircrafts, adoption of air refrigeration, justification	9,10
	Types of aircraft system	11,12
UNIT-II	Refrigerants-desirable properties	1,2
	Commonly used refrigerants, nomenclature.	3
	Alternative refrigerants	4
	Principle and working of a vapour compression refrigeration system.	5,6
	Simple vapour compression refrigeration cycle, use of p-h charts	7,8
	Problems on simple VCR system	9,10
	Effect of superheating and effect of sub cooling	11
	Problems	12
UNIT-III	Compressors-general classification.	1,2
	Comparison, advantages and disadvantages	3
	Condensers-classification, working.	4
	Evaporators-classification, working.	5
	Expansion devices-types, working.	6

	Introduction to the vapour absorption system	7
	Working of a vapour absorption system	8
	Calculation of COP, problems	9
	Advantages and disadvantages of vapour absorption system over VCR system, working of Li-Br,H_2O system	10
	problems	11
	Principle of three fluid absorption system and salient features	12
UNIT-IV	Steam jet refrigeration system working,application,merits and demerits	1,2
	Principle and operation of thermoelectric refrigerator	3
	Working of a Vortex or Hirsch tube	4
	Psychrometric properties, relation	5,6
	Psychrometric chart, problems	7,8
	Psychrometric processes—Sensible heat and cooling, Cooling and Dehumidification,SHF,BPF	9,10
	Psychrometric processes—Chemical dehumidification, Heating and humidification, Adiabatic mixing of two air streams	11
	Problems	12
UNIT-V	Need for ventilation, infiltration	1
	S-load characterization, need for ventilation, infiltration	2
	Concepts of RSHF,ASHF,ESHF &ADP,problems	3,4
	Concept of human comfort and effective temperature	5
	Comfort air conditioning, industrial air-conditioning requirements	6
	Air conditioning load calculations	7,8
	Introduction, components of Air conditioning system	9
	Classification of Air conditioning systems.	10
	Central and Unitary, Summer, Winter and Year round systems.	11,12

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R V R & J C COLLEGE OF ENGINEERING, *(Autonomous)*
DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R16

Title of the Course	ANALYSIS LAB
Course Code	ME 354
Year & semester	III/IV Year B.Tech. - Second Semester

Topics	No. of Lectures
1. STATIC ANALYSIS: Truss and Frame Structures	
i 2-D truss	1
ii 3-D truss	1
iii Beam analysis	1
2.STATIC ANALYSIS: Two Dimensional Problems	
i 2-D structure with various loadings ii 2-D structures with different materials iii Plate with hole	3
3. DYNAMIC ANALYSIS: Modal And Transient Analyses	
i Modal analysis of Solid Structure (Work Table) ii Transient Response (spring-mass system)	2
4. NON-STRUCTURAL PROBLEMS	
i Steady State heat transfer ii Transient heat transfer iii Fluid Analysis	2
	10

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DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R16

Title of the Course	HEAT TRANSFER LAB
Course Code	ME 355
Year & semester	III/IV Year B.Tech. – Second Semester

Topics	No. of Lectures
1. Refrigeration Test Rig	1
2. Air Conditioning Test Rig	1
3. Heat Exchanger - Parallel Flow	1
4. Heat Exchanger - Counter Flow	1
5. Emissivity Apparatus	1
6. Pin fin - Natural Convection & Forced Convection	1
7. Natural Convection from vertical Cylinder	1
8. Stefan - Boltzmann's Apparatus	1
9. Axial conduction in metal rod	1
10. Lagged Pipe apparatus	1
11. Composite slab	1
12. Automobile chassis - Steering and transmission systems	1
	10

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Course Code	:	***ME401(R-16)***
Title of the Course	:	*ENGINEERING METROLOGY*
Year & semester	:	*Fourth Year First Semester*
Periods per Week	:	*4*
Nature of the Course	:	*Core Competence*
Name of Instructor	:	*Dr. K. Praveen Kumar, G. Kishore Chowdari, Dr.Reddy Sreenivasulu,*
Designation	:	*Associate Professor, Assistant Professor, Assistant Professor*
E-mail	:	*kpraveen717@gmail.com, rslu1431@gmail.com, gkchowdari@gmail.com*

LESSON PLAN

TOPIC	Lecture hours
UNIT-1	
Introduction to Engineering Metrology	1
Elements of engineering measurements	1
Linear and angular measurements	2
standards of length	1
End and line standards.	1
Precision measurement, bore gauges, straight edges	2
slip gauges,	1
angle gauges	1
sine bar	1
spirit levels	1
UNIT - II	
Limits, Fits and Gauges: Limits, fits, tolerance and allowance	2
theory of limits and fits and their selection	1
hole bass and shaft basis system	1
Indian standard system of limits and fits	1
simple problems on limits and fits	2
Inter changeability, selective assembly, limit gauges	1
Taylor's principle of limit gauging	1
Procedure to design of plug gauges, ring gauges	2
Tolerance Limits of a process	1
UNIT – III	
Comparators:	2
Mechanical comparators, Reed comparator	
Sigma comparator	1
electrical and electronic comparators	1
solex pneumatic gauge	1
projectors, tool makers microscope	1

Metrology of Screw Threads And Gears : Measurement of various elements of threads (major)	1
Measurement of various elements of threads (minor) and	1
Measurement of various elements of threads (effective diameter)	1
thread micrometer, measurement of pitch	1
gear inspection	1
measurement of tooth thickness, gear tooth caliper	1
UNIT-IV	
Control Charts : Introduction	1
X and R charts	2
Introduction to Attributes charts	1
P-chart , C-Chart , U Chart	2
Measurement Of Surface Finish: Introduction	1
Surface texture, roughness, waviness	1
Indian standard terminology	1
Methods of measuring surface finish	2
Taylor Hobson Talysurf	1
UNIT-V	
Interferometry:	1
Introduction to auto collimator principle and interferometry	2
NPL flatness interferometry- description and working principle	2
gauge length interferometer- description and working principle	1
Static & Dynamic Alignment Tests : Introduction	2
Alignment tests on Lathe	2
Alignment tests on Drilling Machine	2
Alignment tests on Milling Machine	
TOTAL	60

Signature of Staff Member

Signature of HoD

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MECHANICAL DEPARTMENT

LESSON PLAN

ME -402(R16)-Advanced Machine Design

TOPICS	NO. OF PERIODS
Unit-I	
Springs: Introduction to springs and spring Materials	1
Types of springs	1
Helical springs under axial load	1
Problems	2
Fatigue loading and problems	2
Design of composite springs	2
Torsion springs and problems	1
Spiral springs and problems	1
Design of Leaf springs	1
Problems on Leaf springs.	2
UNIT II	
BRAKES: Introduction to brakes classification of brakes	1
Design and analysis of block brakes and problems	1
Design of bank brakes and problems	1
Block and band brakes and problems	1
Internal shoe brakes, external shoe brakes, pivoted shoe brakes and problems	1
Temperature rise, Friction materials	1
Clutches: Introduction and classification of clutch	1
Design of simple and multiple disc clutches and problems	2
Cone clutches and problems	2
Centrifugal clutches and problems	2
UNIT III	
Flywheel: Introduction to flywheel, construction.	1
Torque analysis	1
Coefficient of Fluctuation of speed, energy and its equations	1
Solid disk and rimmed flywheel, mass moment and inertia	1
Stresses in rimmed flywheel	2
Design of flywheel and problems	2
Design of cylinder and cylinder liners, Materials	2
Problems	2
UNIT IV	
I.C. Engine components Design: Introduction, piston materials, piston rings, Connecting rod and crank shaft	1
Design of trunk type piston and Piston pins	2
Problems	2
Connection rod materials and design of Connecting rod	2
Problems	2
Design of Crank shaft with side crank shaft	2
Problems	2
UNIT – V	
Optimization of single variable and multi variables and problems	2
Interval halving method and problems	1
Golden section method and problems	1
Reliability and life expectances: Introduction, Method of achieving Reliability	2
Series, Parallel and series and parallel reliability	1
Analysis and problems	1
System design: Human aspects of design	2
Standardization	1
Practical tips for problems encountered in design with examples	1

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COURSE FILE (R16)

Course Code	:	*ME405*
Title of the Course	:	*Operations Management*
Year & semester	:	*Final Year, Second Semester*

TOPIC	NO.OF PERIODS
UNIT- I	
Forecasting	
Introduction, Forecasting variables	1
Forecasting procedure	1
Methods of forecasting: moving average, simple exponential smoothing,	2
Least squares	1
Linear regression, correlation coefficient, problems	2
Plant location and Facilities layout	
Necessary factors governing plant location	1
Principles of plant layout	1
Types of layouts	2
Introduction to line balancing	1
UNIT-II	
Production systems	
Introduction, Continuous and intermittent production	2
Mass and flow production	1
Batch production, job order production,	1
Continuous and intermittent production difference	1
Production functions	1
Sequencing problem	
Introduction, Processing n jobs through 2 machines	2
Processing n jobs through 3 machines	2
Processing 2 jobs through m machines	2
UNIT-III	
Aggregate planning and scheduling	
Introduction, Long range, intermediate range and short range plans	2
The aggregate planning problem	2
Aggregate planning methods, mathematical planning models	2
Theoretical planning models (LDR)	1

Heuristic and computer search models	1
Master scheduling : Master scheduling formation	2
Inputs and outputs of master scheduling	1
Master scheduling methods	1
UNIT III	
Materials Management and MRP	
Materials requirement planning (MRP) : Importance of MRP and CRP	1
MRP system inputs and outputs	1
Bill of materials	1
MRP logic	1
Economic order quantity (EOQ) models	
Functions of materials management.	1
Purpose of inventories, types of inventories, relevant costs in inventory control	1
Deterministic continuous review models: Basic EOQ	1
Economic production quantity model	2
Basic EOQ model with shortages	1
Quantity discounts	1
Re-order point, buffer stock, reserve stock and safety stock	1
ABC and VED analysis	2
UNIT V	
Project Planning through networks	
Arrow (Network) diagram representation, rules for constructing an arrow diagram,	2
CPM	1
Determination critical path, Determination of floats,	1
PERT	1
Determination critical path	1
Probability considerations in project	1
Introduction to crashing	1
Supply Chain Management	
Introduction, need for supply chain management	1
Elements of supply chain management	1
Logistics, E-commerce	2
Steps in creating an effective supply chain	1
Supplier management.	1
	60

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ME-406(A) R16

LESSON PLAN :: MECHATRONICS

Name of the Topic	Lecture Hours
UNIT-I	
Introduction to Mechatronics	2
Sensors & Transducers :: Introduction	1
Performance Terminology	1
Classification of Sensors	3
Selection of Sensors	1
Signal Conditioning: Introduction, Data Acquisition	1
Quantizing Theory	1
Analog to Digital Conversion	1
Digital to Analog Conversion	1
UNIT-II	
Data Presentation Systems: Data presentation elements	3
magnetic displays	2
data acquisition systems	2
systems measurement	1
Testing and calibration.	1
Actuation Systems Pneumatic actuation systems hydraulic actuation systems stepper motors	3
UNIT-III	
System Models and Block diagram representation	
Modeling of one and two degrees of freedom mechanical systems	2
Electrical systems	2
Fluid systems	2
CLOSED LOOP CONTROLLERS :	
Continuous and discrete processes	1
control modes, two step	1
proportional , derivative	2
Integral, PID controllers.	2
UNIT-IV	
Dynamic response of systems and block diagram representation	
Zero order systems	1
First order systems	2
Second order systems.	3
Transfer function	2
Systems in series	1
Systems with feedback loops	1
frequency response	2
UNIT-V	
PLC : Introduction	1
Basic structure	1
I/P, O/P processing	1
Programming, ladder diagrams	2

Timers, internal relays and counters	1
Data handling	1
Analogue input and output selection of PLC.	1
DESIGN:	
Designing mechatronics systems	2
Possible design solutions	1
Case studies of mechatronics systems – pick and place robot.	1
TOTAL NO. OF CLASSES	60

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LESSON PLAN
Regulation: R16

Title of the Course	SIMULATION LAB
Course Code	ME 452
Year & semester	IV/IV Year B.Tech. - First Semester

Topics	No. of Lectures	Tutorials
Any 6 Experiments from programing and any 4 from Simulink using MATLAB		
Programing Exercises	**1**	
1. Introduction to matlab, fundamentals of programing	**1**	
2. Using gauss elimination to solve equations	**1**	
3. Newton Raphson method to estimate the root of given equation	**1**	
4. Implementation of RK method for ordinary differential Equations	**1**	
5. Plot the displacement, velocity and accelerationsvs angle for a slider crank mechanism	**1**	
6. Computing Forces on a Truss using method of joints	**1**	
7. Free-vibration response of a damped single-degree of freedom system	**1**	
8. Free-vibration response of a two-degree of freedom system	**1**	
9. Forced-vibration response of a damped single-degree of freedom system	**1**	
Simulation Exercises		
10. Spring mass system using simulink	**1**	
11. Build a Simulink model of a bouncing ball.	**1**	
12. Simulating a fourbar mechanism	**1**	
13. Hydraulic Circuit with Single-Acting Cylinder	**1**	
14. Flyball Governor	**1**	
15. Automotive Suspension	**1**	
	10	

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LESSON PLAN
Regulation: R16

Title of the Course	DESIGN AND METROLOGY LAB
Course Code	ME 453
Year & semester	IV/IV Year B.Tech. - First Semester

Topics	No. of Lectures	Tutorials
Any Ten Experiments should be performed		
1. Angle and taper measurement by Bevel Protractor & Sine Bar	1	
2. Internal and External taper measurement using Ball & Rollers	1	
3. Measuring effective dia. of thread using 2 wire, 3 wire method	1	
4. Measuring gear tooth thickness using gear tooth vernier	1	
5. Measuring internal dia. using bore dial gauge	1	
6. Measurement of Circularity , Cylindricity, Flatness and straightness using CMM	1	
7. Alignment test on Lathe , Drilling , Milling machines	1	
8. Measuring external diameters using Micrometer & Plot X & R Charts	1	
9. Measurement of surface finish using surf tester	1	
10. Measuring different parameters of a thread / gear using tooth profile projector	1	
11. Vibration measurements	1	
12. Gyroscope	1	
13. Balancing	1	
14. Whirling of shafts	1	
15. Governor	1	
16. CAM Analysis	1	
17. Photo elastic Bench	1	
18. Wear & Friction measurement	1	
19. Measurement of cutting forces using lathe tool dynamometer	1	
20. Measurement of cutting forces using drill tool dynamometer	1	
	10	

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LESSON PLAN
Regulation: R16

Title of the Course	Industrial Engineering and Management
Course Code	ME 407
Year & semester	IV/IV Year B.Tech. - Second Semester

UNIT – I	**Periods**
PRODUCTIVITY	
Definition, Methods to measure productivity and problems	1
Importance of productivity for national development	2
Measures to improve productivity	2
WORK STUDY	
Introduction	
Management techniques to reduce work content and ineffective time	1
Application of work study techniques in our day to day life activities.	2
METHOD STUDY	
Procedure	
Tools for recording information-charts and diagrams	2
Therbligs, Principles of motion economy, SIMO chart, Cyclegraph and Chronocyclegraph	2
UNIT – II	
WORK MEASUREMENT	
Objectives and techniques	1
Time study ,	1
Rating systems	1
Standard time ,allowances and related problems	2
WORK SAMPLING	
Introduction and procedure for conducting work sampling	2
Activity Sampling, Confidence Levels,	1
Use of random number tables for conducting work sampling	2
Calculation of number of observations and related problems	2
UNIT – III	
GENERAL MANAGEMENT	
Definition of Management	
Contribution of Taylor, Gilberth, Fayol	1
Principles of Scientific management	1
Management Functions	1
PERSONNEL MANAGEMENT	2
Definition	
Functions of Personnel Manager	1
Job analysis, Job design, Job Evaluation	2
Merit rating	1
Wages and Incentive Plans	1

Factories act – Related to health, working hours, environment and working conditions, safety, employee welfare	2
UNIT – IV	
MARKETING MANAGEMENT	
Concept of selling ,marketing and their differences	1
Functions, Market research	1
Sales promotion and advertising	1
Break-even analysis	1
Types of distribution channels, Product life cycle	1
FINANCIAL MANAGEMENT	
functions of finance, simple and compound interest	1
Depreciation introduction	1
Methods of depreciation and problems	1
Accounting principles, procedure- double entry system- journal- ledger.	2
Trial balance- cash book-preparation of trading, profit and loss account-balance sheet.	3
UNIT-5	
Elements of cost, Direct cost, indirect cost, Fixed cost, Variable cost, semi-variable cost	1
Prime cost, Manufacturing cost, Overheads,	1
Allocation of overheads,	1
Determination of various costs, problems.	3
Objectives and functions of estimating the cost.	1
Cost of machining operations such as tuning, drilling, boring, milling	4
cost of welding and casting.	
	60

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DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R16

Title of the Course	AUTOMATION AND CAM
Course Code	ME 408
Year & semester	IV IV Year B.Tech. - Second Semester

TOPIC	Lecture hours
UNIT-I	
Industrial Robotics	**1**
Introduction	
Robot anatomy, joints and links, common robot and configurations	**2**
Joint drive systems	**2**
Robot control systems	**1**
End effectors	**2**
Sensors in robotics	**2**
Applications of robots - material handling, processing, assembly and inspection	**2**
UNIT - II	
Automation	**1**
Introduction, Automation in production systems	
Automated manufacturing systems	**1**
Computerized manufacturing support systems,	**1**
Reasons for automating, merits and demerits	**1**

Automation principles and strategies.	1
Manufacturing industries and products	1
Manufacturing operations processing and assembly operations other factory operations	2
Computer Aided Process Planning: Introduction	1
Retrieval CAPP system, generative CAPP systems, benefits of CAPP.	2
Introduction to Computer Integrated Manufacturing.	1
UNIT – III	
Numerical Control	1
Introduction	
Basic components of an NC system	1
Classifications of NC systems	1
Nomenclature of NC machine axes	1
Interpolation methods	1
Features of CNC, the machine control unit for CNC, CNC software,	2
Direct numerical control, distributed numerical control	1
Applications of NC	1
Advantages and disadvantages of NC	1
Adaptive control machining	2
UNIT-IV	
NC Part Programming	1

NC coding systems	
Manual part programming- introduction	1
Simple examples on drilling, milling and turning operations,	2
Computer assisted part programming-Introduction	2
Part programming with APT language	2
Simple examples in drilling and milling operations	2
UNIT-V	
Group Technology & Cellular Manufacturing:	1
Introduction	
Part families, parts classification and coding	1
Features of parts classification of coding system, OPITZ, MICLASS	1
Product Flow Analysis	1
Composite part concept	1
Machine cell design	1
Applications	1
Flexible Manufacturing Systems: Introduction	1
Types of FMS, components,	1
FMS layout configurations	1
Computer control system, human resources	1
Applications and benefits	1
TOTAL	**60**

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Department of Mechanical Engineering

Lesson Plan for ME 409 (R) (R16)

Subject Name	Computer Aided Design
Code	ME 409 (R)
Year & Sem	IV Year II Sem

UNITS	Periods	Total
UNIT I		
INTRODUCTION:		
Application areas of computer graphics	2	8
Fundamentals of CAD, Design process	1	
Applications of computer for design	1	
Benefits of CAD, CAD work station	1	
Graphic terminal, CAD software, CAD database and structure	2	
Input devices	1	
Display Devices:		
	2	4
Video display devices, CRT	1	
Raster scan display, Raster scan systems	1	
Random Scan Display, Random scan systems		
UNIT II		
OUTPUT PRIMITIVES:		
Points and lines, line drawing algorithms	1	7
DDA algorithm	1	
Bresenham's line algorithm	2	
Circle generation algorithm	1	
Mid point circle algorithm	2	
GEOMETRIC MODELING:		
2D,3D wire frame models, Entities and their definitions	2	
Concept of Parametric and nonparametric representation of curve	2	5
Curve fitting techniques	1	

UNITS	PERIODS	TOTAL
UNIT III		
Representation of synthetic curves		
Definitions of cubic splines,	2	
spline representation, Hermite curve,	2	6
Bezier curve and B-spline curve.	2	
Surface Modeling:		
Surface modeling and entities	2	
Algebraic and geometric form	1	6
Parametric space of surface, Blending functions	2	
Surface of revolution	1	
UNIT IV		
Solid Modeling:		
Solid models, Solid entities	2	6
Solid representation, Sweep representation	1	
Constructive solid geometry	1	
Boundary representation	1	
Solid modeling based applications	1	
Rapid Prototyping		6
Rapid prototyping-overview,	1	
RP techniques- Stereolithography, selective laser sintering,	2	
3-D printing, Fused Deposition Modelling,	2	
Laminated object manufacturing.	1	
UNIT V		
Geometric Transformations:		
Transformations principles, Translation, Scaling, Rotation	2	6
reflection and shear	1	
Matrix Representations and Homogeneous Coordinates	1	
Composite transformations, transformations between coordinates	2	
Windows and Clipping:		
The viewing pipe-line, viewing coordinate for reference frame	2	
window to view-port co-ordinate transformations	1	6
CohenSutherland line clipping	1	
Sutherland Hodgeman polygon clipping algorithm	2	
TOTAL	60	60

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Course Code	ME 410/A
Regulation	R16
Title of the Course	ROBOTIC ENGINEERING
Year & semester	ME 410/A (IV YEAR – Second Semester)

LESSON PLAN

TOPICS	No.of classes
UNIT_I	
Introduction to Robotics	2
major component so a robot,	2
robotic like devices,	1
classification of robots – Classification by coordinate system	3
by control method	2
Specifications of robots	1
fixed versus flexible automation,	1
economic analysis	1
Overview of robot application.	1
Robot Control Archietecture	1
UNIT-II	
Robot end Effectors: Introduction	1
Requirements of Endeffectors	1
end effectors	2
interfacing	1
types of end effectors,	3
grippers and tools,	4
considerations in the selection	1
design of remote centered devices.	2
UNIT-III	
Robotic sensory devices : Objective	1
Non-optical position sensors – potentiometers	1
synchros	1
inductosyn	1
optical position sensors – opto interrupters	2
optical encoders (absolute & incremental)	1
Proximity sensors : Contact type , non contact type – reflected light scanning laser sensors.	2
UNIT-IV	
Touch sensors – proximity rod & photo detector sensors,	2
slip sensors – Forced oscillation slip sensor, interrupted type slip sensors	2
Fiber optic scanning sensors and Belgrade hand slip sensors	1
Transformations and Kinematics : Objectives	1
homogenous coordinates	3
basic transformation operations	3
UNIT- V	
forward solution – Denavit Hartenberg procedure	2

Simple problems involving planar manipulators	3
inverse or backward solution	2
problems involved, techniques	2
	60

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LESSON PLAN
Regulation: R16

Title of the Course	CAM LAB
Course Code	ME 454
Year & semester	IV/IV Year B.Tech. - FIRST Semester

Topics	No. of SLOTS
Manual Part Programming examples in plain turning, step turning	2
taper turning, contour turning	2
thread cutting, drilling, boring, taper boring, counter boring	2
parting off with and without using Canned Cycles and sub programs on CNC Lathe	2
Manual Part Programming examples in drilling,	2
pocket milling and profile milling with and without using Canned Cycles and sub programs on CNC Milling Machine.	2
	12

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LESSON PLAN
Regulation: R18

Title of the Course	Mathematics-I
Course Code	ME 111
Year & semester	I/IV Year B.Tech. - First Semester

Topics	No. of Lectures	No. of Tutorials
UNIT-I		
Evolutes and Involutes	2	
Evaluation of improper integrals: Integrals without infinite limits of integration	2	1
Beta function	2	
Gamma function	2	
Relation between beta and gamma functions (without proof)	2	1
Applications of definite integrals to evaluate surface areas and volumes of revolutions.	2	1
UNIT-II		
Rolle's theorem (without proof)	1	
Lagrange's mean value theorem(without proof)	1	
Taylor's and Maclaurin series	2	1
Sequences	2	
Series of positive terms	2	1
Convergence tests: Comparisiontest(limit form) D'Alembert's ratio test	2	1
Raabe's test for convergence.	2	
UNIT-III		
Fourier series: Half range sine and cosine series	1	
Parseval's formula.	1	
Multivariable Calculus: Limit	1	1
continuity and partial derivatives	1	
total derivative	1	
Maxima minima and saddle points of two variables	1	1
Method of Lagrange multipliers.	1	
Scalar and vector point functions	1	
Gradient	1	
directional derivative divergence and curl	1	1

del applied twice to point and product of point functions (without proofs)	1	1
UNIT-IV		
Rank of a matrix	1	
Normal form	1	
Inverse by Gauss Jordan method	1	1
System of linear equations: non homogeneous	1	
Homogeneous systems	1	
Rank-nullity theorem (without proof)	1	
Eigenvalues and eigenvectors	1	
Cayley-Hamilton Theorem	2	1
Diagonalization of matrices	1	
reduction of quadratic form to canonical form.	2	
	48	**12**

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LESSON PLAN
Regulation: R18

Title of the Course	CONCEPTS IN CHEMISTRY
Course Code	ME 112
Year & semester	I/IV Year B.Tech. - First Semester

UNIT-I:		
Molecular structure Intermolecular forces and Energy systems		
Crystal field theory-salient features	1	
energy level diagrams-tetrahedral and octahedral complexes	1	1
crystal field stabilization energies and magnetic properties.	1	
Ionic dipolar Vander Waal's interaction and Hydrogen bonding	1	1
critical phenomena-Andrew's isotherms of CO_2	1	
derivation of critical constants from Vander Waal's equation.	1	1
Electrode potential	1	
electrochemical series	1	1
Nernst equation and its applications. Batteries-Primary (Dry cell) and secondary (Lead acid)	1	
Lithium battery (Li-MnO_2)- advantages	1	
Fuel cell (H_2-O_2 cell).	1	
UNIT-II:		
Water Chemistry and Corrosion		
Water Chemistry-WHO standards	1	
Municipal water treatment-Removal of suspended impurities-Sedimentation	1	
Co-agulation and Filtration-Disinfection of water by chlorine	1	
Break point chlorination	1	
Dechlorination	1	
Purification by ion-exchange method and reverse osmosis.	1	
Corrosion-Introduction	1	
Electrochemical theory of corrosion	1	
galvanic corrosion	1	
differential aeration corrosion	1	1
Factors-temperature	1	
pH	1	
overvoltage. Cathodic protection by sacrificial anodic method and impressed current method. Electroplating (Cu)	1	
Electrolessplating (Ni).	1	

UNIT-III:		
Organic reactions and Polymers		
Types of organic reactions-Substitution (SN_1 and SN_2)	1	
Elimination (E_1 and E_2)	1	
Addition-Markownikoff's rule and anti-Markownikoff's rule	1	
Cyclisation (Diel's Alder reaction)	1	
Synthesis of aspirin.	1	
Polymers-Functionality	1	
Degree of Polymerization	1	
Tacticity-Addition and condensation polymerization	1	
Relationship between Structure and Properties of polymers (Strength	1	
Crystallinity Elasticity Plastic Deformation	1	
Glass transition temperature (T_g))	1	
Factors affecting T_g.	1	
Conducting polymers: Introduction	1	
General applications	1	
Mechanism of conduction in polyacetylene.	1	
UNIT-IV:		
Spectroscopic techniques and its applications		
Beer-Lambert's law	1	
colorimetric determination of Fe(III)	1	
UV-VIS spectroscopy – electronic transitions	1	1
shifts-blue and red	1	
Block diagram - brief introduction of components	1	
Applications – purity and differentiation of conjugated and non-conjugated dienes.	1	1
IR Spectroscopy–condition to be IR active	1	
vibrational modes of–AB_2	1	
Block diagram-brief introduction of components	1	1
IR spectrum of CO_2 and H_2O molecules	1	1
General applications. Fluorescence and its applications in medicine.	1	
	50	10

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LESSON PLAN
Regulation: R18

Title of the Course	ENGLISH FOR COMMUNICATION SKILLS
Course Code	ME 113
Year & semester	I/IV Year B.Tech. - First Semester
Nature of the Course	Core Competence

Topics	No. of Lectures	Tutorials
UNIT - I		
Vocabulary Building		
- Root words from foreign languages and their use in English.	5	--
- Acquaintance with prefixes and suffixes from foreign languages in English to form derivatives	4	
- Synonyms, antonyms, and standard abbreviations.	3	
- One word substitutes.	3	
UNIT II		--
Writing Skills		
- Proposal writing	4	--
- Letter-writing	4	
Techniques for writing precisely (precis writing)	4	--
E-mail writing	3	
UNIT III		-
Identifying Common Errors in Writing		

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(K. Sudhakar)

- Subject-verb agreement	3	
- Noun-pronoun agreement	3	
Articles	2	--
- Prepositions	2	--
- Tenses	3	--
- Redundancies	2	--
UNIT IV		
Nature and Style of Sensible Writing		
- Description & Narration (Paragraph Writing).	4	--
- Essay Writing (Expository Essay).	3	--
- Note-Making and Note-Taking.	3	
- Methods of preparing notes	5	--
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LESSON PLAN
Regulation: R18

Title of the Course	CHEMISTRYLAB
Course Code	ME 151
Year & semester	I/IV Year B.Tech. - First Semester

Topics	No. of Slots
Estimation of Mohr's salt using $KMnO_4$	1
Estimation of Mohr's salt using $K_2Cr_2O_7$	1
Determination of chloride ion content of water	1
Determination of Hardness of water using EDTA method	1
Determination of Fe(II) strength using $K_2Cr_2O_7$potentiometrically	1
Determination on strength of NaOH using HCl conductometrically	1
Determination of surface tension	1
Determination of Viscosity	1
Determination of Saponification / acid value of oil	1
Preparation of p-bromo acetanilide	1
Preparation of Phenol Formaldehyde resin	1
Determination of partition co-efficient of I_2 in water	1
Determination of R_f value using TLC	1
Verification of Freundlich isotherm using adsorption of acetic acid on activated charcoal	1
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LESSON PLAN
Regulation: R18

Title of the Course	English Language and Communication Skills Lab
Course Code	ME 152
Year & semester	I/IV Year B.Tech. - First Semester

Topics	No. of Slots
Listening Comprehension	1
Pronunciation	2
Intonation	2
Stress and Rhythm	2
Common Everyday Situations: Conversations and Dialogues	2
Interviews	2
Formal Presentations	2
Reading Comprehension	1
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LESSON PLAN
Regulation: R18

Title of the Course	**WORKSHOP / MANUFACTURING PRACTICES (THEORY & LAB)**
Course Code	ME 153
Year & semester	I/IV Year B.Tech. - First Semester

Manufacturing Methods:	
Introduction to various types of manufacturing methods –casting - forming - various machining operations such as turning, milling, shaping, drilling, slotting etc.., - various joining methods such as welding, brazing, soldering etc.,- Advanced manufacturing methods	3
CNC machining and Additive manufacturing	1
Fitting operations and power tools (power hack saw, table mounted circular saw, wood turning lathe, bench grinder, concrete mixer, concrete vibrator etc.,)	1
Basic principles involved in electrical circuits and electronic PCB circuits	1
Carpentry	1
Welding(arc welding & gas welding)	1
Metal casting	1
Plastic moulding, glass cutting	1
	10

Machine Shop	slots
Practice of machining operations on Lathe, Milling, Shapping, Drilling and Slotting Machines.	3
-Plain, step turning	1
-Plain, groove and thread cutting	1
Fitting Shop	
-Inclined fit	1
-Half round fit	1
Moulding and Casting	
-Hand wheel	1
-Stepped cone pulley	1
Practice on electrical wiring and Electronic circuit boards	
- One bulb controlled by one switch &two bulbs in series controlled by one switch	1
- Measurement of resistance, voltage and current with the help of a multimeter&soldering an electronic PCB circuit	1
Welding shop(both arc &gas welding)	

Square hub plate	1
Leg plate	1
Carpentry	
Flat leg cross plate	1
T leg plate	1
Tin Smithy	
Rectangular leg	1
Funnel	1
Plastic moulding and glass cutting	
Practice on glass cutting	1

LESSON PLAN
Regulation: R18

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Title of the Course	MATHEMATICS -2
Course Code	ME 121
Year & semester	I/IV Year B.Tech. - Second Semester
Nature of the Course	Core Competence

Topics	No. of Lectures	Tutorials
UNIT - I		
Differentials equations of first order-Linear equations	2	
Bernoulli's equation,	2	--
exact equations	1	1
equationsreducible to exact equations.	2	1
Differentials equations of higher order	2	1
Second order linear differential equations with constant coefficients	2	
Method of variation of parameters	2	1
Cauchy's homogeneous linear equation and Legendre'slinear equation.	2	--
UNIT II		
Multiple Integrals	2	1
Double integrals (Cartesian and polar)	2	1
Change of order of integration	2	--
Change ofvariables Cartesian to polar coordinates.	2	1
Area by double integrals	2	--
Triple integrals (Cartesian), Volume by triple integrals.	2	1
UNIT III		--
Integration of vectors -		--
Line integrals	1	1
surface integrals,	2	--
Green's theorem in the plane (without proof),	1	1
Stoke's theorem (without proof),	1	1
Volume integrals	1	--
Gauss divergence theorem (without proof)	1	
Complex variables - Differentiation,	1	
Cauchy Riemann equations (Cartesian and polar-without proof) analytic functions.	2	
UNIT IV		--

Harmonic functions, finding harmonic conjugate - Milne Thomson method	4	2
Complex integrations - Cauchy Integral Theorem (without proof), Cauchy Integral Formula (without proof)	4	2
	40	13

Physics

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LESSON PLAN
Regulation: R18

Title of the Course	ENGINEERING PHYSICS
Course Code	ME 122
Year & semester	I/IV Year B.Tech. - Second Semester

Topics	No. of Lectures	Tutorials
UNIT - I		
Simple harmonic motion, damped and forced simple harmonic oscillator:	2	
Mechanical and electrical simple harmonic oscillators	1	--
complex number notation and phasorrepresentation of simple harmonic motion,	2	
damped harmonic oscillator - heavy,	1	
critical and lightdamping,	1	
energy decay in a damped harmonic oscillator,	1	--
quality factor	1	
forced mechanical and electricaloscillators	1	--
electrical impedance.	1	
mechanical impedance.	1	--
UNIT - II		
Non-dispersive transversed ands longitudinal wavess in one dimension	1	
Transverse wave on a string	1	--
the wave equation on a string,	1	
Harmonic waves	1	
reflection andtransmission of waves at a boundary,	2	
impedance matching standing waves	1	--
their Eigen frequencies,	1	--
introduction to dispersion :	1	
longitudinal waves and the wave equation for them	1	--
acoustics waves and speed of sound	1	--
standingsound waves.	1	

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UNIT - III		
The propagation of light :	1	
Fermat's principle of stationary time and its applications	1	--
e.g. in explaining mirage effec	1	--
laws ofreflection and refraction	1	--
Light as an electromagnetic wave	1	
Brewster's angle	1	
total internalreflection	1	--
Wave optics	1	
:Interference introduction	1	--
Stoke`s principle,	1	
interference in thin films by reflectedlight(cosine law),theory of air wedge	1	
Newton's rings, Michelson interferometer and its applications.	1	--
UNIT – IV		
lasers	1	
Einstein's theory of matter radiation interaction and A and B coefficients;	1	--
; amplification of light bypopulation inversion	1	
different types of lasers: gas laser (He-Ne), solid-state lasers	1	--
Properties of laser beams: mono-chromaticity, coherence, directionality and brightness	2	
applications of lasers in science,	1	
engineering and medicine	1	--
Diffraction	1	
Farunhofer diffraction from a single slit, the Rayleigh criterion for limit of resolution and its application tovision;	2	--
; Diffraction gratings and their resolving power	1	
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LESSON PLAN
Regulation: R18

Title of the Course	PROGRAMMING FOR PROBLEM SOLVING
Course Code	ME 123
Year & semester	I IV Year B.Tech. – SECOND Semester
Nature of the Course	Core Competence

Topics	No. of Lectures	Tutorials
UNIT - I		
Introduction to Programming	2	--
: Introduction to components of a computer system	2	1
, where a program is stored and executed	2	1
, operating system,	2	1
compilers etc		
Idea of Algorithm	1	--
: Steps to solve logical and numerical problems	1	1
Representation of Algorithm: Flowchart / Pseudocode with examples,from algorithms to programs;	2	--
ource code, variables (with data types) variables and memory locations	1	1
, Syntax and Logical Errors in compilation	2	--
object and executablecode, Arithmetic expressions and precedence.		
UNIT - II		
Conditional Branching and Loops :	1	--
: Writing and evaluation of conditionals	1	1
consequent branching	4	1
Iteration and loops.		--
Arrays	1	--
: Arrays (1-D, 2-D), Character arrays and Strings Basic Algorithms	2	--
:Searching, Basic Sorting	2	1
Algorithms (Bubble, Insertion and Selection), Finding roots of equations.		

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UNIT - III		
Function		
: Functions (including using built in libraries), Parameter passing in functions	1	--
call by value, Passing arrays to functions : idea of call by reference	1	--
Recursion		
: Recursion,	1	--
a different way of solving problems.	2	1
. Example programs, such as Finding	2	1
Factorial, Fibonacci series.	6	--
UNIT – IV		
File handling Pointers		
Structures,	2	--
Defining structures and Array of Structures	4	--
Idea of pointers,	2	1
Defining pointers	2	1
, Use of Pointers in self referential structures.	1	--
File handling :		
: Defining and opening a file, closing a file,	2	--
e, input/output operations on files using filehandling functions, random access to files.	2	
	60	15

Ch. Srinivasa Rao

CH. SRINIVASA RAO

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LESSON PLAN
Regulation: R18

Title of the Course	BASIC ELECTRICAL ENGINEERING
Course Code	ME 124
Year & semester	I/IV Year B.Tech. - SECOND Semester
Nature of the Course	Core Competence

Topics	No. of Lectures	Tutorials
UNIT - I		
Batteries		
Lead-acid,	2	--
Nickel-Cadmium batteries (Operation only).	2	1
, Nickel-iron	2	1
. Elementary calculationsfor energy consumption.	2	1
DC Circuits :		
: Electrical circuit elements (R, L and C),	1	--
voltage and current sources,	1	1
Kirchoff current andvoltage laws,	2	--
, analysis of simple circuits with dc excitation	1	1
. Superposition, Thevenin and NortonTheorems	2	--
UNIT - II		
AC Circuits		
Representation of sinusoidal waveforms,	1	--
peak and rms values	1	1
, phasor representation,	2	1
real power, reactive power, apparent power,	2	1
, power factor.	2	--
. Analysis of single-phase ac circuits consistingof R, L, C, RL, RC	2	--
C, RLC combinations (series and parallel),	1	--
Three phase balanced circuits,	2	--
voltage andcurrent relations in star and delta connections.	2	1

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UNIT - III		
Transformers :		
: Magnetic materialS		
BH characteristics,	1	--
working principle of single phase transformer	1	--
ideal and practical transformer	1	--
equivalent circuit form O.C and S.C tests	2	1
. Losses in transformers,	2	1
regulation and efficiency	1	--
Auto-transformer -	1	--
Working principle,	2	1
comparison with two windingtransformer	2	1
UNIT – IV	2	--
Electrical Machines		
: Construction, working principle of DC generator and motor (Elementary treatment		
. torque-speed characteristic of separately excited dc motor.	2	--
Generation of rotating magnetic fields	2	1
Construction	2	--
working of a three-phase induction motor	2	1
Significance of torque-slip characteristic.	2	1
Loss components and efficiency	1	--
y. Construction and working of synchronous generators.	2	--
	2	
	60	15

Y. mallikharjunarao
30/1/2020

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LESSON PLAN
Regulation: R18

Title of the Course	Physics Lab
Course Code	ME 161
Year & semester	I/IV Year B.Tech. - First Semester

A minimum of 10(Ten) experiments have to be performed and recorded by the candidate to attain eligibility for Semester End Practical Examination:

Topics	No. of Slots
Some basic measuring instruments: Screw gauge, Vernier Callipers, Spherometer, Travelling Microscope etc., & General instructions.	1
To determine the acceleration due to gravity and radius of gyration using compound pendulum.	1
To determine the rigidity modulus of the given wire material using Torsional pendulum	1
To determine the young modulus of the given material by non uniform bending.	1
To study the characteristic curves of a given Photocell and determine the Planck's constant.	1
To determine the radius of curvature of a given Plano-convex lens by Newton's Rings experiment.	1
To calculate the frequency & amplitude of sinusoidal waves and calibration of a given audio oscillator – Lissajous' Figures.	1
To determine the magnetic field along the axis of circular current carrying coil.	1
To measure the a.c. supply frequency using A.C. sonometer.	1
To determine the quality factor of a given series resonance LCR circuit.	1
To determine Fill factor of a given photovoltaic cell.	1
To determine the wavelengths of spectral lines of mercury light using diffraction grating.	1
To determine the wavelength of laser using diffraction grating.	1
To find the dispersive power and resolving power of a grating.	1
To determine the magnetic field in Helmoltz coil.	1
To determine the refractive index of the material of a prism.	1
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LESSON PLAN
Regulation: R18

Title of the Course	Programming for Problem Solving Lab
Course Code	ME 162
Year & semester	I/IV Year B.Tech. - First Semester

[The laboratory should be preceded or followed by a tutorial to explain the approach or algorithm to be implemented for the problem given.]

Topics	No. of Slots
Tutorial 1: Problem solving using computers:	
Lab1: Familiarization with programming environment	1
Tutorial 2: Variable types and type conversions:	
Lab 2: Simple computational problems using arithmetic expressions	1
Tutorial 3: Branching and logical expressions:	
Lab 3: Problems involving if-then-else structures	1
Tutorial 4: Loops, while and for loops:	
Lab 4: Iterative problems e.g., sum of series	1
Tutorial 5: 1D Arrays: searching, sorting:	
Lab 5: 1D Array manipulation	1
Tutorial 6: 2D arrays and Strings	
Lab 6: Matrix problems, String operations	1
Tutorial 7: Functions, call by value:	
Lab 7: Simple functions	1
Tutorial 8 &9: Numerical methods (Root finding, numerical differentiation, numerical integration):	
Lab 8 and 9: Programming for solving Numerical methods problems	1
Tutorial 10: Recursion, structure of recursive calls	
Lab 10: Recursive functions	1
Tutorial 11: Pointers, structures and dynamic memory allocation	
Lab 11: Pointers and structures	1
Tutorial 12: File handling:	
Lab 12: File operations	1
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LESSON PLAN
Regulation: R18

Title of the Course	ENGINEERING GRAPHICS & DESIGN Lab
Course Code	ME 163
Year & semester	I/IV Year B.Tech. - First Semester

Topic	Slots
General: Principles of Engineering Graphics and their significance usage of drawing instruments lettering.	1
Conic sections: Construction of Ellipse Parabola , Hyperbola and Rectangular Hyperbola. (General method only)	1
Curves: Cycloid , Epicycloid , Hypocycloid and Involute; and **Scales**	1
Method of Projections: Principles of projection - First angle and third angle projection of points, Projection of straight lines inclined to both planes. Traces of lines.	1
Projections of planes: Projections of planes inclined to both the planes projections on auxiliary planes.	1
Projections of Regular Solids: Projections of solids (Prism Pyramid Cylinder and Cone) with varying positions.	1
Sections of Solids: Sections of Prisms Pyramids, cylinders and Cones. True shapes of sections. (Limited to the cutting plane perpendicular to one of the principal plane).	1
Development of surfaces: Development of surfaces of Right Regular Solids - Prism	1
Pyramid Cylinder and Cone; Draw the sectional orthographic views of geometrical solids objects from industry and dwellings (foundation to slab only)	
Isometric Projections: Principles of Isometric projection-Isometric Scale Isometric Views Conventions; Isometric Views of lines Planes Simple and compound Solids	1
Orthographic Projections: Conversion of pictorial views into Orthographic views and Vice-versa. (Treatment is limited to simple castings).	1
Perspective Projections: Introduction to Perspective Projection	1
Over view of Computer Aided drafting (AutoCAD) :	
Introduction starting and customizing AutoCAD screen	2
usage of different menus toolbars(drawing editing dimension text object properties..etc) tabs (Object v grid polar ortho otrack..etc) and command prompt. Setting units limits	3
layers and viewports (Isometric Top Front back..etc). 2D drawings of various mechanical and structural components	3
electrical and electronic circuits. Orthographic and Isometric views of mechanical castings and simple structures.	1
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DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R18

Title of the Course	Basic Electrical Engineering Laboratory
Course Code	ME 164
Year & semester	I/IV Year B.Tech. - First Semester

Familiarisation of Electrical Installations and Electrical Testing Equipment: Miniature circuit breakers (MCBs), Moulded Case Circuit Breakers (MCCBs), Earth-leakage circuit breakers (ELCBs), Fuses, Types of Wires, Wire Gauges, continuity test, megger, Cables and Earthing	1
Basic safety precautions Introduction and use of measuring instruments – voltmeter, ammeter, wattmeter, multi-meter, oscilloscope, measurement of basic parameters	1
Verification of KVL& KCL	1
Verification of Thevenin's Theorem	1
Verification of Superposition Theorem	1
Verification of Maximum power transfer theorem	1
Verification of reciprocity theorem	1
Verification of Norton's Theorem	1
Measurement of active power in single phase circuit by using single wattmeter	1
Series resonance characteristics	1
Parallel resonance characteristics	1
Parameters of choke coil	1
To study R-L series circuits (AC)	1
To study R-C series circuits (AC)	1
To study R-L-C series circuits (AC)	1
To study R-L-C parallel circuits (AC)	1
	1
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DEPARTMENT OF MECHANICAL ENGINEERING
ME211- ENGINEERING MECHANICS
B.Tech.[Second Year] Semester II

LESSON PLAN

Name of the Topic	*Lecture Hours*	*Tutorial Hours*
UNIT – I (CO1)		
Basic Concepts & Force systems in a plane:		
Principles of statics	2	
Composition and resolution of forces	1	
Equilibrium of concurrent forces in a plane - method of projections	1	1
Method of moments	1	
Couple, equilibrium of parallel forces in a plane	1	
Resultant and equillibrum of general case of forces in a plane	1	
Plane trusses-method of joints	2	1
Friction:		
Concept of friction, Laws of friction	1	
Simple contact friction, related problems	1	1
Wedge friction and related problems	1	
UNIT – II (CO2)		
Force systems in a space (Using vector notation):		
Position vector, unit vector, force vector	1	
Resultant and equilibrium of concurrent forces in space	2	1
Moment of a force about a point	1	
Moment of a force about an axis	1	
Centroid and Centre of Gravity:		
Centroids of simple shapes from first principles	3	1

Name of the Topic	Lecture Hours	Tutorial Hours
Centroids of composite plane figures	2	1
Centre of gravity of three dimensional bodies (Right circular cone and Hemi sphere)	2	
UNIT – III (CO3)		
Virtual Work:		
Introduction, principle of virtual work	1	
Equilibrium of Ideal systems	2	1
Moment of Inertia:		
Area moment of inertia - Definition, Moment of inertia of plane sections from first principles	3	1
Theorems of moment of inertia	1	
Moment of inertia of standard sections and composite sections	3	1
Mass moment inertia of circular plate, Cylinder	1	
Mass moment inertia of Cone and Sphere	1	
UNIT – IV (CO4)		
Kinematics:		
Rectilinear translation	2	1
Curvilinear translation	1	
Rotation about fixed axis	1	1
General Plane motion of rigid bodies.	1	
Kinetics:		
Rectilinear translation	2	1
Work and energy, Impulse momentum,	1	
Collision of elastic bodies-direct central impact	1	
Curvilinear translation	1	
Rotation about fixed axis	1	
General plane motion of rigid bodies	1	
Total	48	12

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LESSON PLAN
Regulation: R18

Title of the Course	LIFE SCIENCES FOR ENGINEERS
Course Code	ME 212
Year & semester	Semester III [Second Year]

Topics	No. of Lectures	Tutorials
UNIT - I		
LIVING ORGANISMS		
Comparison of biological organisms with manmade systems	3	
Classification of living organisms, Cellular basis of life	4	
Differences between prokaryotes and eukaryotes	4	
Classification on the basis of carbon and energy sources, molecular taxonomy	4	
UNIT - II		
PROTEINS AND ENZYMES		
Water, Biomolecules	2	
Carbohydrates, proteins and lipids	2	
Structure and functions of proteins and nucleic acids	3	
Hemoglobin, antibodies	3	
ENZYMES		
Basic Structure and Classification of Enzymes	2	
Enzymes in Fermentation and industrial applications	3	

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UNIT – III		
CELL PHYSIOLOGY		
Bioenergetics	**4**	
RESPIRATION		
Glycolysis and TCA cycle	**2**	
Electron transport chain and oxidative phosphorylation.	**3**	
Mechanism of photosynthesis and Neurons	**3**	
Synaptic and neuromuscular junctions	**3**	
UNIT – IV		
GENES AND GENETIC MATERIAL (DNA AND RNA)		
Mendels animal cloning, biosensors, biochips laws, gene mapping	**2**	
Mitosis and Meiosis	**2**	
Single gene disorders in humans, Genetic code	**2**	
DNA replication, Transcription, Translation Recombinant	**3**	
DNA TECHNOLOGY		
Recombinant vaccines, transgenic microbes	**3**	
Animal cloning, biosensors, biochips	**3**	
	60	

R V R & J C COLLEGE OF ENGINEERING, *(Autonomous)*

DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R18

Title of the Course	MANUFACTURING PROCESSES
Course Code	ME 213
Year & semester	II/IV Year B.Tech. - First Semester

Topic	No .of periods
UNIT I	
Conventional Manufacturing processes: Casting and moulding: Introduction to Casting	2
Terminology Pattern-types materials and allowances	1
moulding sand properties.Metal casting processes:	1
Sand casting	1
Investment Casting	1
Centrifugal and Die Casting with related equipment	1
Elements of gating	1
system for castings	1
Riser design- caine's method	1
modulus method-Problems. Casting defects and Remedies.	2
UNIT II	
Introduction to bulk and sheet metal forming Fundamentals of hot and cold working processes	2
Plastic deformation and yield criteria;	1
Rolling-types of roll mills and passes	2
load estimation for rolling	1
Forging extrusion and sheet forming (shearing Punching bending).	2
UNIT III	
Joining/fastening processes:	1
Welding: Gas welding	1
TIG and MIG welding	1
submerged arc welding and	1
resistance welding process-Simple problems. Solid-liquid state joining processes: Brazing soldering and adhesive bonding	1
Additive manufacturing: Introduction to Rapid prototyping-types-Selective Laser	1
Sintering (SLS) Stereo lithography (SLA)	1
Laminated Object Manufacturing (LOM)	1
Fused Deposition	1

Modelling (FDM) and Applications.	1
UNIT IV	
Abrasive Jet Machining	1
Water Jet Machining	1
Abrasive Water Jet Machining	1
Ultrasonic Machining	1
principles and process parameters Electrical Discharge Machining	1
principle and processes parameters	1
MRR surface finish tool wear	1
Dielectric wire EDM; Electro-chemical machining (ECM)	1
etchant & maskant	1
MRR and surface finish. Laser Beam Machining (LBM)	1
Plasma Arc Machining (PAM) and Electron Beam Machining	1
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F OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R18

Title of the Course	**BASIC THERMODYNAMICS**
Course Code	ME 214
Year & semester	Semester III [Second Year]

Topics	No. of Lectures	Tutorials
UNIT - I		
FUNDAMENTALS:		
System & Control volume; Property, State & Process; Exact & Inexact differentials.	3	--
Temperature, Definition of thermodynamic equilibrium and Zeroth law; Temperature scales; Various Thermometers-Temperature measurement work&heat.	3	1
Thermodynamic definition of work; examples; Displacement work; Path dependence of displacement work and illustrations for simple processes; electrical, gravitational, spring and shaft work.	3	1
Definition of heat; examples of heat/work interaction in systems.	3	1
UNIT – II		
FIRST LAW OF THERMODYNAMICS FOR NON FLOW PROCESSES:		
First law applied to a cycle and to a process, Concept of total energy E; Demonstration that E is a property.	2	--
Various modes of energy, Internal energy and Enthalpy	1	1
FIRST LAW FOR FLOW PROCESSES:		
Derivation of general energy equation for a control volume.	2	1
Steady state steady flow processes including throttling.	2	1
Examples of steady flow devices.	2	--
I law applications for system and control volume.	2	1

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UNIT – III		
SECOND LAW OF THERMODYNAMICS		
Definitions of direct and reverse heat engines; Definitions of thermal efficiency and COP.	2	1
Kelvin-Planck and Clausius statements; Definition of reversible process.	2	1
Internal and external irreversibility; Carnot cycle; Absolute temperature scale.	2	--
ENTROPY:,;		
Clausius inequality; Definition of entropy S ; Demonstration that entropy S is a property; Evaluation of S for solids, liquids.	3	--
Ideal gases and ideal gas mixtures undergoing various processes.	2	1
Determination of entropy change for different non flow processes- Principle of increase of entropy; Illustration of processes in T-s coordinates.	3	--
UNIT – IV		
AIR STANDARD CYCLES:		
Otto, Diesel and Dual cycles.	2	--
Analysis for thermal efficiency and mean effective pressure	2	1
comparison between Otto, Diesel and Dual cycles.	2	--
AVAILABILITY AND IRREVERSIBILITY:		
Available and Unavailable energies.	2	--
Irreversibility and Availability.	3	--
Availability function for systems and Control volumes, Lost work.	2	1
	45	15

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F OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R18

Title of the Course	**THEORY OF MECHANISMS & MACHINES**
Course Code	ME 215
Year & semester	Semester III [Second Year]

Topics	No. of Lectures	Tutorials
UNIT – I		
Introduction :		
Mechanisms and machines, Rigid and resistant bodies, Link, Kinematic pair, Degrees of Freedom, Classifications of Kinematic pairs.	2	--
kinematic-chain, Linkage, Mechanism, and structure, Classification of mechanisms, Equivalent Mechanisms.	2	1
Four-Link (bar) Mechanism, Inversions of Slider-Crank Chain, Double - Slider Chain.	2	--
Straight Line Mechanisms:		
Hart Mechanism, Scott Russel Mechanism, Grass Hoper mechansim. Velocity Analysis.	1	1
Introduction, Absolute and Relative Motion, Addition and subtraction of Vectors, Motion of a Link, Four Link Mechanism.	2	1
Angular Velocity of Links, Velocity of Rubbing, Slider-Crank Mechanism, Crank and Slotted Lever Mechanism.	3	--
UNIT – II		
Instantaneous centre:		
Notation, Number of I - Centers, Arnold Kennedy's theorem.	2	--
Locating I centres, Angular velocity by I - Centre Method.	1	1
Acceleration Analysis:		
Acceleration, Four-Link Mechanism, Angular acceleration of Links.	3	1
Acceleration of Intermediate and offset points, slider- Crank Mechanism.	2	1

Coriolis component acceleration, Crank and slotted lever Mechanism.	2	1
UNIT – III		
Kinematic Synthesis:		
Stages of synthesis-Concepts of type, Number and dimensional synthesis - Tasks of dimensional synthesis.	1	1
Concepts of function generation, Rigid body guidance and path generation.	1	1
Freudenstein's equation for function generation using three precision points.	2	--
Cams:		
Introduction, Types of cams.	3	--
Types of Followers, Definitions.	2	1
Graphical synthesis of cam profile. (Knife Edge, Roller and Flat faced Followers).	3	--
UNIT – IV		
Gears:		
Introduction, Classification gear terminology, Law of Gearing, Velocity of Sliding, Forms of Teeth.	2	--
Cycloidal Profile Teeth, Involute Profile Teeth, Path of contact, Arc of contact, Number of pairs of Teeth in contact, Interference in Involute Gears,	2	1
Minimum number of Teeth, Interference between Rack and Pinion, Undercutting, Comparison of Cycloidal and Involute tooth forms.	2	--
Gear Trains:		
Introduction, simple Gear Train, Compound Gear Train,	2	--
Reverted Gear train, Planetary or Epicyclic Gear Train	3	--
Analysis of Epicyclic Gear Train, Torques in Epicyclic Trains: Tabular Methods.	2	1
	45	15

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LESSON PLAN

Regulations: R19

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Topics	No. of Lectures	Tutorials
1. Sectional views: Introduction, full & half section	[illegible]	
2. Threaded fasteners: Screw thread nomenclature, types & classification of screw threads, Square & Hexagonal headed bolted joints	[illegible]	
3. Keys, Cotters and Pin joints: Saddle & Sunk keys, Cotter joint with sleeve, Knuckle joint	[illegible]	
4. Assembly Drawings: Stuffing box, Screw jack, Eccentric, Pipe vice	6	
	[illegible]	

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English

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LESSON PLAN
Regulation: R18

Title of the Course	COMMUNICATIVE ENGLISH LAB
Course Code	ME 252
Year & semester	II/IV Year B.Tech. - Third Semester

Topics	No. of Lectures
UNIT I	
Basics of Presentations Ice breaking session Student Presentation-I	3
Learning about Presentations > - Presentation structure > - Managing nerves in a presentation > - Mini Presentations > - Feedback on presentations	4
UNIT II	
Professional and Personal Grooming Functional English	2
Non Verbal Communication Stage Manners	2
Undersatnding and preparing a Presentation Team presentations	3
UNIT III	
Speech Nuances Pronunciation	2
MTI-Mother Tongue Influence Stress in English Tempo of Speech	2
Indianisms and Often Made Mistakes	2
Idioms& Phrasal verbs	1
UNIT IV	
Free Talk	1
DilemmaQuestions	1
Paraphrasing an article or a video in student's own words(Team task)	2
Impromptu speeches	1
Introducing TED TALKS	1
Movie based Learning-Karate Kid Movie-Understanding Life Skills	1
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(K. Sudhakar)

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LESSON PLAN
Regulation: R18

Title of the Course	BASIC ELECTRONICS LAB
Course Code	ME 253
Year & semester	II/IV Year B.Tech. - Third Semester

Topics	No. of Lectures
ANY OF 10 EXPERIMENTS	
1. Characteristics of Silicon and Germanium Diodes	1
2. Characteristics of Zener diode	1
3. Half-Wave Rectifiers	1
4. Full-Wave Rectifiers	1
5. Characteristics of CE configurations	1
6. Characteristics of JFET	1
7. Realization of Gates using Discrete components	1
8. Realization of Gates using Universal building block(NAND only)	1
9. Design of combinational logic circuit like Half-adder,half-subtractor	1
10. Design of code converters	1
11. Conversion of Flip-Flops	1
12. Applications of op-amp,(Adder,Subtractor) using IC 741	1
13. Applications of integrator and differentiator using IC 741	1
14. Astable multivibrator using IC 555	1
	10

Y. Mallikarjunarao
30/1/2020

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LESSON PLAN MD/MT 511 THEORY OF ELASTICITY AND PLASTICITY

UNIT NO	TOPIC	Lecture hours	Tutorials
UNIT 1	Introduction to Theory of Elasticity	1	
	State of stress at a point, stress components in rectangular coordinates	2	
	Principal stresses and planes	2	
	Problems	1	1
	Deviatoric and hydrostatic stress components, Stress invariants.	1	
	Theories of failure and problems	2	1
	Differential Equations of Equilibrium.	1	
UNIT2	State of strain at a point and strain in rectangular coordinates	1	
	Normal and shear strain components, deformations	2	
	Problems on strains and deformations	2	2
	Principal strains, strain invariants and deviators	1	
	Problems on principal strains	1	2
	St Venant's Principle	1	
UNIT3	Plane stress and Plane strain	2	
	Equations of equilibrium in 2d rectangular coordinates	1	
	Compatibility equations in 2d rectangular coordinates	1	
	Boundary conditions, Airy's Polynomial stress function in 2d rectangular coordinates	2	
	Stress distribution in simple beam problems by Airy's stress function	4	2
UNIT4	Equations of equilibrium in 2d polar coordinates	1	
	Compatibility equations in 2d polar coordinates	1	
	Boundary conditions, Airy's stress function in 2d polar coordinates	1	
	Stress problems on axisymmetric members using Airy's function	2	2
	Introduction to Torsion in circular and non circular members	1	
	General equation of torsion, boundary conditions , equilibrium equations and compatibility conditions for any arbitrary section	2	
	Torsion in circular, elliptical and triangular sections.	1	1
UNIT5	Introduction to plasticity	1	
	Structure of metals	1	
	Plastic deformation, flow stress and flow strain in metals	2	1
	Engineering stress, true stress, engineering strain, true	2	

MD 512–MACHINERY VIBRATION AND CONTROL

I Year M.Tech. (Machine Design) :: First Semester

Lectures / Tutorials: 4 Periods / week — Sessional Marks: 40

Semester End Exam. : 3 hrs. — Semester End Exam. Marks: 60

Name of Faculty: Dr K. Ravindra, Professor, HOD, ME

LESSON PLAN

S.No	Topic	No of Hours
	Unit-I	
	Introduction Of Syllabus, Course Objectives	1
	Introduction, Definitions, vector Method Of Representing Harmonic Motions	1
	Addition Of Two Simple Harmonic Motion Of The Same Frequency	2
	Introduction Of Undamped Free Vibration Of Single Degree Of Freedom Systems.	1
	Derivations Of Differential Equations	1
	Solution Of Differential Equation.	1
	Problems on Undamped Free Vibration Of SDOF systems	1
	Torsional Vibrations	2
	Equivalent Stiffness Of Spring Combinations	2
	Energy Method	3
	Unit-II	
	Introduction Of Damped Free Vibrations Of Single Degree Of Freedom Systems	1
	Different Types Of Damping- Damped Free Vibrations Of Single Degree Of Freedom Systems	1
	Free Vibrations With Viscous Damping-	3
	Logarithmic Decrement	1
	Viscous Dampers Of Single Degree Of Freedom Systems	1
	Coulomb Damping	2
	Introduction Of Forced Vibrations Of Single Degree Of Freedom Systems	1
	Forced Vibration With Rotating And Reciprocating Unbalance	2
	Forced Vibrations Due To Excitation Of The Support	1
	Isolation Introduction	1
	Transmissibility	1
	Problems on forced vibration	2
	Unit-III	
	Introduction Of Two Degrees Of Freedom Systems	1
	Introduction Of Principal Modes Of Vibration , Double pendulum, torsional systems with damping	1
	Natural Frequencies Of Tightly Stretched String	2
	Frequencies Of A Tightly Stretched String.	1

	Two Masses For Two Degrees Of Freedom Systems	2
	Double Pendulum, Torsional System	1
	Systems With Damping, Undamped Forced Vibration With Harmonic Excitation	2
	Equation Of Motion For Multi Degree Of Freedom Systems	1
	Influence Coefficient, natural Frequencies And Mode Shapes Eigen Values And Eigen Vectors	2
	Unit-IV	
	Rayleighs methods, problems	2
	Introduction Of Speeds Of Shafts, critical speed of shaft having multiple discs	
	Critical Speed Of Alight Shaft Having A Single Disc With Damping , Critical Speeds Of Light Shaft Having A Single Disc With Damping, dunkleys Methods	3
	Unit-V	
	Vibration nomograph and vibration criteria, reduction of vibration, Balancing of rotating machines, introduction of damping	2
	Transducers, Vibration pickups Frequency Measuring Instruments	2
	Vibration Exciters & Signal Analysis	2
	Siesmic Instrument Construction And Working Principle	1
	Machine Condition Monitoring And Diagnosis	2
	TOTAL	60

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MD 513–MECHANISMS AND ROBOT KINEMATICS

I Year M.Tech. (Machine Design) :: First Semester

Lectures / Tutorials: 4 Periods / week — Sessional Marks: 40

Semester End Exam. : 3 hrs. — Semester End Exam. Marks: 60

Name of Faculty: Dr K. Srinivas, Professor, HOD, ME

LESSON PLAN

S.No	Topic	No of Hours
	Unit-I	
	Mobility analysis – Degree of freedom (DOF)	2
	Mixed mobility, total, partial and fractional DOF.	2
	Closed and open chain systems	2
	structural analysis	3
	Synthesis of mechanisms.	3
	Unit-II	
	Alternative design solutions	2
	coding, evaluation and selection of optimum mechanism	2
	Type synthesis	2
	Number synthesis	2
	Design of mechanisms.	3
	Unit-III	
	Indexes of merit	1
	Graphical, algebraic and optimization techniques	3
	Matrix methods of design and analysis	2
	Design of function, path and motion generators	3
	Structural and mechanical error	1
	Unit-IV	
	Manipulators Classification	2
	Actuation Systems	2
	Transmission systems	2
	Robot drive Systems	2
	Coordinate transformation	3
	DH notations	2
	Unit-V	
	Link frame assignment algorithm	2
	Forward solution Simple problems involving 2 DOF manipulators.	3
	Forward solution Simple problems involving 3 DOF manipulators.	2
	Inverse or backward solution - Closed form solution	2
	Problems involved 2 and 3 DOF manipulators.	3
	TOTAL	60

K. Srinivas

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MD576 :: MECHANICS OF COMPOSITE MATERIALS

LESSON PLAN

Name of the topic	Lecture hours	Tutorial hours
UNIT I		
Introduction to Composite Materials: Definition, Classification	1	
Polymer matrix composites, Metal matrix composites	2	
Ceramic matrix composites, carbon-carbon composites	2	
Reinforcements and Matrix materials: Types of matrix materials and reinforcements	2	
Characteristics & selection	1	
Fiber reinforced composites, Particulate composites	2	
Prepegs and sandwich construction	2	
UNIT II		
Manufacturing: Introduction, Lay-up and curing	2	
Open and closed mould processing	2	
Hand lay-up techniques	2	
Bag moulding, Filament winding	2	
Pultrusion, Thermoforming	1	
Injection moulding	1	
An overview of metal matrix composite processing and ceramic matrix composite processing	2	
UNIT III		
Macro Mechanics of a Lamina: Introduction	1	
Hooke's law for different types of materials, Number of elastic constants	2	
Derivation of nine independent constants for orthotropic material	2	1
Two - dimensional relationship of compliance and stiffness matrix	1	2
Hooke's law for two-dimensional angle lamina, engineering constants.	2	1
UNIT IV		
Micro Mechanical Analysis of a Lamina: Introduction, Evaluation of the four elastic moduli	2	1
Rule of mixture, Numerical problems.	2	1
Strength Failure Theories of an Angle Lamina: Maximum stress theory, Maximum strain theory	1	
Tsai-Hill theory	1	1
Tsai-Wu tensor theory	2	1

Name of the topic	Lecture hours	Tutorial hours
UNIT V		
Macro Mechanical Analysis of Laminate: Introduction, Lamination code	2	
Stress-strain relations for a laminate	2	1
In-Plane and Flexural modulus of a laminate	2	1
Application Developments: Aircrafts, missiles	1	
Space hardware, automobile	1	
Electrical and Electronics, Marine	1	
Recreational and sports equipment-future potential of composites	1	
TOTAL	**50**	**10**

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RVR&JC College of Engineering (A)

Department of Mechanical Engineering

Lesson Plan for MD 588

Subject Name	Geometric Modelling
Code	MD 588
Year & Sem	I Year I Sem
Academic Year	2019-2020
Name of Faculty	Dr.S.Radhika

UNITS	Periods	Total
UNIT I		
INTRODUCTION TO CAD:		
Introduction to CAD	2	15
conventional and computer aided design processes	2	
CAD input devices	2	
CAD output devices	3	
CAD Software	2	
Data exchange formats	2	
CAD applications.	2	
UNIT II		
2D Transformations of Geometry:		
2D Translation, 2D Scaling	1	5
2D Reflection, 2D Rotation	2	
Homogeneous representation of transformation	1	
Concatenation of transformations.	1	
3D Transformations of geometry and Projections:		
3D Translation, 3D Scaling	1	10
3D Reflection, 3D Rotation	1	
Homogeneous representation of transformation	1	
Concatenation of transformations	1	
Perspective, Isometric projections	2	
Orthographic projections	2	
Inverse transformations.	2	

UNITS	Periods	Total
UNIT III		
Design of Curves:		
Analytic Curves	1	
Synthetic curves	1	
Hermite cubic spline	1	15
Bezier Curve	2	
B-spline curve	2	
Curve manipulations-Evaluating points on curves	1	
Curve Trimming	1	
Blending	1	
Segmentation and intersection	2	
Bernstein polynomials	1	
NURBS.	2	
UNIT IV		
Design of Surfaces:		
Surface analysis and representation	2	
Analytical surfaces- Plane, Ruled	2	
Surfaces of revolution and Tabulated cylinder	2	
Synthetic surfaces- Hermite bi-cubic surface	2	15
Bezier surfaces	1	
B-spline surfaces	2	
Coons surface	2	
Blending surface and Offset surface	2	
Surface manipulation.		
UNIT V		
Design of Solids:		
Solid entities	3	
Boolean operations	2	15
B-rep of Solid Modelling	4	
CSG approach of solid modelling	3	
Advanced modelling methods.	3	
TOTAL	60	60

31/11/2020

Signature of Staff member

Signature of HoD

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LESSON PLAN
Regulation: R17

Title of the Course	COMPUTER AIDED DESIGN LAB
Course Code	MD 551
Year & semester	I Year M.Tech. (Machine Design) :: First Semester

Topics	No. of Slots
Sketcher	4
Part Drawings	4
Creation of working drawings of components and preparation of assembly models of screw jack, leaf jig, plumber block, lathe chuck, machine-vice, box type drilling jig assembly etc. by using the following techniques: - Generation of surfaces of revolution - Generation of surfaces of extrusion - Generation of surfaces by skinning operation -Generation of solid models using constructive solid geometry, method shading and rendering.	8
Generation of Ferguson's cubic surface patches, Generation of Bezier UNISURF surface patches, Generation of Coon's patches.	4
Practice on Design Calculations using Software	4
	24

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DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R17

Title of the Course	MACHINE DYNAMICS and SIMULATION LAB
Course Code	MD 552
Year & semester	I Year M.Tech. (Machine Design) :: First Semester

Topic	Slots
Introduction	1
Determination of damped natural frequency of vibration of the vibrating system with	1
different viscous oils	1
Determination of steady state amplitude of a forced vibratory system	1
Determine the MI of connecting rod by bi-filar suspension pendulum method	1
Determination of the magnitude of gyroscopic couple angular velocity of precession and representation of vectors.	1
SIMULATION:	
Solving problems involving numerical differentiation and integrations.	1
Solving Truss and Beam Problems using MATLAB.	1
Position Analysis of Slider-Crank (R-RRT) Mechanism and determination of point on a link.	1
Simulation of spring mass damper System using MATLAB.	1
Frequency Response Analysis (Draw the Phase Margin and Gain Margin Bode Plots) of given system using MATLAB.	1
	10

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LESSON PLAN
Regulation: R17

Title of the Course	FINITE ELEMENT METHODS
Course Code	MD 521
Year & semester	I Year M.Tech. (Machine Design) :: SecondSemester

Topic	No. of Periods
UNIT – I	
Introduction to finite element Method: Introduction to FEM	1
basic concepts and historical back ground	1
Advantages disadvantages and applications of FEM	1
general description and comparison of FEM with other methods	1
Formulation Techniques: Methodology	
Engineering problems and governing differential equations	1
potential energy method	1
Raleigh Ritz method	1
Galerkin and weighted residual methods	1
Essential and natural boundary conditions.	1
Discretization of the domain: Basic element shapes	1
discretization process	1
node numbering scheme.	1
Interpolation function	1
FEM procedure.	1
UNIT-II	
Coordinate system: Global local natural coordinate system	1
Shape functions: Polynomial shape functions Derivation of shape functions	1
Natural co-ordinate and coordinate transformation	1
Linear and quadratic elements. Convergence and compatibility requirement of shape functions.	1
Structural analysis of Bar: Element matrices assembling of global stiffness matrix	1
Problems on bar element	1
UNIT-III	1
Trusses: Element matrices assembling of global stiffness matrix	1
Problems	1

Beams: Element matrices, assembling of global stiffness matrix, solution for displacements, reaction, stresses.	1
Problems	1
UNIT – IV	1
Two dimensional problems:	1
CST and LST	1
Quadrilateral element and Shape functions for six and eight nodded elements	1
Axisymmetric formulations Element matrices boundary conditions.	1
Finite element modelling of axisymmetric solids subjected to Axisymmetric loading with Triangular elements.	1
Finite Element Formulations for triangular and quadrilateral Plate elements.	1
Three dimensional problems: Tetrahedron element – Jacobian matrix – Stiffness matrix.	1
Concepts of Iso parametric super parametric and Sub parametric Elements.	1
UNIT-V	
Heat transfer problems: Formulation	1
and solution procedure	1
1D – Straight uniform fin analysis	1
Tapered fin analysis	1
Analysis of uniform fin using Quadratic element	1
2-D Conduction and convection	2
examples: - two-dimensional fin. Finite element formulation of flat curved cylindrical and conical Shell elements.	1
Dynamic considerations: Dynamic equations – consistent mass matrix – Eigen Values	1
Eigen vector natural frequencies – mode shapes – modal analysis.	2
	45

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MD522:: OPTIMIZATION TECHNIQUES

LESSON PLAN

Name of the topic	Lecture hours	Tutorial hours
UNIT I		
General Characteristics of mechanical elements	1	
Adequate and optimum design, formulation of objective function	1	
Design constraints -Classification of optimization problems and applications.	1	
Single variable and multivariable optimization	2	
Techniques of unconstrained minimization	1	
Golden Section, Fibonocci method	1	2
Gradient search methods – Quadratic Interpolation method	1	2
UNIT II		
Multi – variable optimization with equality and inequality constraints	1	
Direct methods - Indirect methods using penalty functions	2	3
Lagrange multipliers; Kuhn-Tucker conditions	2	3
Merits and demerits of classical optimization techniques	1	
UNIT III		
Introduction to Simulation, Types of Simulation	1	
Random numbers and random number generation: Mixed congruential method, additive congruential method and multiplicative congruential method.	2	2
Simulation Processes, Monte-Carlo Technique, Application problems	2	5
UNIT IV		
Genetic Algorithms: Differences and similarities between conventional and evolutionary algorithms, working principle, reproduction, crossover, mutation, termination criteria, different reproduction and crossover operator	2	2
Simulated Annealing : Introduction ,Procedure, Algorithm , Features of the Method	2	1
Introduction to Neural networks: Basic concept of Neural Networks, Characteristics of Neural Networks, Model of an Artificial Neuron,	4	1

Neural Network Architectures – Single layer feed forward network, Multi layer feed forward network		
Name of the topic	Lecture hours	Tutorial hours
UNIT V		
Review of Linear programming using simplex approach	1	1
Integer programming: Introduction – formulation – Gomory cutting plane algorithm Branch and Bound method	1	4
Design application - Structural applications - Design of simple truss members. Design of simple axial, transverse loaded members for minimum cost and /or weight	2	3
TOTAL	**31**	**29**

Dr. C.Srinivas
Assoc.Prof in ME

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Course Code : **MD523 (R-17)**	
Title of the Course : **Advanced Materials for Design**	
Year & semester : **M.Tech I year, Second Semester**	
Name of Instructor : **Dr. N.GOVIND**	
Designation : **Associate Professor**	
E-mail : **govind.nandipati@gmail.com**	

Lesson Plan	**No.of periods**
UNIT-I	
Selection of Engineering Materials: Introduction, The families of engineering materials and material properties.	2
The selection strategy Attribute limits and material indices	2
The selection procedure, Computer-aided selection, The structural index.	2
Materials for Engineering Design: Non Metallic materials- Polymer matrix materials-constituents	2
Processing & Properties. Present and future applications.	2
Ceramics-processing, Properties and applications.	2
UNIT-II	
Metallic materials: Dual phase steels, micro alloyed steels, ,	2
high strength low alloy steels, maraging steels	1
Metal matrix composites,	1
processing, properties	1
applications.	1
Piezo Electric materials: Introduction, Piezo electric Properties.	1
actuation of structural components by piezo electric crystals	1
actuator-structure interaction	1
axial motion of rods	1
bending of beams.	2
UNIT-III	
Shape Memory Alloys: Introduction,	2
Experimental phenomenology	2
Influence of stress on characteristic temperatures,	2
Design considerations	2
vibration control through shape memory alloys.	2
Applications of shape memory alloys.	2
UNIT-IV	
Introduction to Nanotechnology, History of Nano Technology, Biomimetic Definition- Nanotechnology and Nano Science.	1
Feynman predictions on NanoTechnology,	1

Moore's law, Nano Technology applications in various fields.	1
Nano Structures: Classification of Nanostructures- Zero dimensional-Nanoparticle One Dimensional-Nanowires, Two dimensional Nano structures-Thin films.	2
Top-Down Nano fabrication: Definiton, Top-Down fabrication methology-Deposition (or) Growth-Physical Vapour deposition methods, Chemical Vapour deposition methods	2
Lithography-Photo Lithography, Soft lithography-Nano imprinting,Applications	1
Etching-Physical and Chemical etching. Material modification –Ion implantation	1
Bottom-up Fabrication: Definition, Bottom-up Fabrication methodology: Building block Fabrication- Physical fabrication approaches, Chemical Vapour growth (VLS Mechanism)-Nano wires	2
Self Assembly and Self Organization-Chemical Self assembly (SAMs),	1
Physical self assembly -examples	
UNIT-V	
Carbon Nanotubes (CNTs), Study of Structure of CNTs	1
Various methods of synthesis of CNTs	2
Properties and applications.	2
MEMS and NEMS: Introduction to Micro electromechanical systems-MEMs	1
Nano electromechanical systems-NEMs-applications	1
Characterization of Nano Structures: Electron microscopy	1
SEM	1
TEM	1
Scanning Probe Microscopy--STM,	1
AFM	1
Total no.of instruction hours	60

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MD/ME 571- Design of Experiments
Lesson Plan & Delivery

Unit – I	No.of Hours
Introduction	
Strategy of experimentation	1
Some typical applications of experimental design	1
Basic principles of DOE	1
Guidelines for designing experiments	1
A brief history of statistical design, Using statistical design in experimentation.	1
Simple comparative experiments	
Introduction	1
Basic statistical concepts, Sampling and sampling Distribution	2
Inferences about the Differences in means, randomized designs	2
Inferences about the Differences in means, Paired comparison Designs	1
Inferences about the Variances of Normal Distributions	1
Unit – II	
Randomized Block Designs	
Randomized complete block design	3
Latin square design	1
Balanced incomplete block design.	1
Introduction To Factorial Design	
Basic definition and principles, Advantages of factorials	1
The two factor factorial design	2
General factorial design	2
Fitting response curves and surfaces	1
Blocking in a factorial design.	1
Unit – III	
Fitting Regression Models	
Introduction, Linear regression models	2
Estimate of parameters in linear regression models	3
Hypothesis testing in multiple regression	2
Confidence intervals in multiple regression	1
Prediction of new response observations	1
Regression model diagnostics	2
Testing for lack of fit.	1
Unit – IV	
Response surface methods	
Introduction	2
Method of steepest ascent	4
Analysis of second-order response surface	2
Experimental designs for fitting response surfaces.	4

Unit – V	No.of Hours
Taguchi Method Of Design Of Experiments	
Concept design, Parameter design, Tolerance design	2
Quality loss function	2
Signal-to- Noise ratio	1
Orthogonal array experiments, Quality characteristics	3
Selection and testing of noise factors, Selection of control factors	2
Parameter optimization experiment	1
Parameter design case study	1

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MD 573 – MECHATRONICS SYSTEM DESIGN

LESSON PLAN

UNIT-I:	Allotment of Hours
Introduction	1
Integrated Design issues in Mechatronics	2
Mechatronics Design process	1
Mechatronics Key Elements	1
Applications in Mechatronics	2
Modelling and simulation of physical systems: Electrical systems	2
Mechanical systems translational & rotational systems	2
Fluid systems.	1
UNIT-II:	
Sensors and Transducers: Introduction	1
sensor for motion and position measurement	1
force, torque and tactile sensors	1
vibration – Acceleration sensors, sensor for flow measurement	2
temperature sensing devices	1
Signal Conditioning and Real Time Interfacing: Introduction	1
Signal conditioning process	1
Elements of a Data Acquisition, Transducers and Signal conditioning	1
Data Conversion Process: Analog to Digital Conversion	2
A to D Converters	1
UNIT-III	
Actuating Devices: Classification, comparison and applications	2
DC Motors, Stepper motors	2
Fluid power Actuation	2
Fluid power design elements: Input devices, Modulation Devices	2
Output Devices	2
Graphical representation of hydraulic and pneumatic elements	1
Equipment's of actuation elements	1
UNIT-IV	
System Control – Logic Methods	1
Number Systems in Mechatronics	1
Binary Logic: Boolean algebra	1
Karnaugh Map Minimization: 2 variables	1
3 variables	1
4 variables: simplifying SOP, POS	2
PLC: Architecture	1
Input/ Output Processing	1
Ladder programing	2
Timers, Counters and IR's	2
UNIT-V	
Design of fluid power circuits: Introduction, Applications	2
Cascade Circuit	1

Furnace door control	1
Package lifting device	1
Cylinder sequencing	2
Oscillating cylinder	1
CASE STUDIES: Pick and place robot	1
Car park barriers	1
Car engine management	1
Sequential Controller, Automatic camera	2
TOTAL NO. OF CLASSES HANDLED	60

(K.LAKSHMI CHAITANYA)

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R V R & J C COLLEGE OF ENGINEERING, *(Autonomous)*
DEPARTMENT OF MECHANICAL ENGINEERING.

LESSON PLAN
Regulation: R17

Title of the Course	ANALYSIS LAB
Course Code	MD 561
Year & semester	I/II Year M.Tech. - Second Semester

Topics	No. of Lectures
1. STATIC ANALYSIS: Truss and Frame Structures	
i 2-D truss	1
ii 3-D truss	1
iii Beam analysis	1
2.STATIC ANALYSIS: Two Dimensional Problems	
i 2-D structure with various loadings ii 2-D structures with different materials iii Plate with hole	3
3. DYNAMIC ANALYSIS: Modal And Transient Analyses	
i Modal analysis of Solid Structure (Work Table) ii Transient Response (spring-mass system)	2
4. NON-STRUCTURAL PROBLEMS	
i Steady State heat transfer ii Transient heat transfer iii Fluid Analysis iv Introduction to workbench	4
	12

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