TENTATIVE LESSON PLAN: R201201

Course Title: MATHEMATICS - II		
Section : CIVIL	Date : 10-05-2021	Page No : 01 of 02
Revision No : 00	Prepared By : K.BASAVARAJU	Approved By : HOD

Tools: Black board, PPT'S, MS Teams

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-1: SOLVING SYSTEM OF LINEAR EQUATIONS, EIGEN VALUES AND EIGEN VECTORS **CO1: solve system of linear algebraic equations using Gauss elimination, Gauss Jordan, Gauss Seidel (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
1	Introduction to matrices.	From: 10-05-2021 To: 29-05-2021	Lecture interspersed with discussions
2	Rank of matrix- definition, properties		
3	Problems on rank by Echelon form		
4	Rank by normal form		
5	PAQ form problems		
6	Homogeneous system AX=0		
7	Non Homogeneous system AX=B		
8	Problems on rank method		
9	Gauss Elimination method		
10	Eigen values – definition		
11	Properties of Eigen values		
12	Properties of Eigen values		
13	Problems on finding eigen values, vectors		
14	Problems on finding eigen values, vectors		
UNIT – II:, CALEY-HAMILTON THEOREM, QUADRATIC FORMS **CO2: Develop the use of matrix algebra techniques that is needed by engineers for practical applications (L6)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
15	Caley Hamilton theorem, verification, problems		

16	Finding inverse and power of a matrix by caley Hamilton theorem	From: 31-05-2021 To: 12-06-2021	Lecture interspersed with discussions
17	Diagonalization – problems		
18	Quadratic forms – definition, examples		
19	Matrix form of a quadratic form		
20	Canonical form of a quadratic form		
21	Methods of reducing a QF in to canonical form		
22	Orthogonal reduction method		
23	Congruent operations method		
24	Lagrange's method		
25	Problems on finding nature of a QF		
UNIT-III : UNIT – III: ITERATIVE METHODS: **CO3: Avaluate approximating the roots of polynomial and transcendental equations by different algorithms (L5)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
26	Introduction	From: 14-06-2021 To: 19-06-2021 & From: 28-06-2021 To: 07-07-2021	Lecture interspersed with discussions
27	Method – 1: Bisection method		
28	Problems		
30	Method – 2: Regula falsi method		
31	Problems		
33	Method – 3: Iteration method		
34	Problems		
35	Method – 4: Newton Raphson method		
36	Problems		
37	Newton Raphson method simultaneous equations		
38	Gauss Jacobi Method		
39	Gauss Seidal Method		
40	problems		
UNIT – IV: INTERPOLATION **CO4: Apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
41	Introduction: Forward and Backward Differences		

42	Newton's Forward interpolation formula	From: 08-07-2021 To: 24-07-2021	Lecture interspersed with discussions
43	Problems		
44	Newton's Backward interpolation formula		
45	Problems		
46	Gauss Forward interpolation formula – Problems		
47	Problems		
48	Gauss Backward interpolation formula – Problems		
49	Problems		
50	Lagranges interpolation formula – Problems		
51	Problems		
52	Operators		
UNIT – V: NUMERICAL INTEGRATION AND SOLUTION OF ORDINARY DIFFERENTIAL EQUATION **CO5: Apply different algorithms for approximating the solutions of ordinary differential equations to its analytical computations (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
53	Trapezoidal rule	From: 26-07-2021. To: 07-08-2021	Lecture interspersed with discussions
54	Simpson's 1/3 rule		
55	Problems		
56	Simpson's 3/8 rule		
57	Taylor's series method		
58	Problems		
59	Picard's method of successive approximation		
60	Euler's method		
61	Euler's modified method		
62	Problems		
63	Runge kutta method		
64	Problems		

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Tentative Lesson Plan: R201202

Course Title: ENGINEERING CHEMISTRY		
Section : CIVIL	Date:11-5-2021	Page No : 3
Revision No :	Prepared By: B.SOWJANYA	Approved By : HOD

Tools:

No. of Periods	TOPIC	Date	Mode of Delivery

S.NO	TOPIC		
	UNIT –I HIGH POLYMERS AND PLASTICS		
	CO1: Importance of usage of plastics in household appliances and composites(FRP) in aerospace and automotive industries.		
1.	Polymerisation:- Introduction	From: 11-5-21 To:25-5-21	Lecture Interspersed With Discussions
2.	Mechanism of polymerization		
3.	Stereo regular polymers		
4.	Methods of polymerization(emulsion and suspension)		
5.	Physical and mechanical properties		
6.	Advantages and limitations of plastics		
7.	Thermoplastics and Thermosetting plastics		
8.	Compounding of plastics		
9.	Fabrication (4/5 techniques) of plastics		
10.	Preparation, properties and applications of PE,PVC		
11	Bakelite Teflon and polycarbonates		
12	Elastomers :- Natural rubber- compounding		
13	Vulcanization – Synthetic rubbers : Buna S, Buna N,		
14	Thiokol ,polyurethanes -Applications of elastomers		
15	Composite materials & Fiber reinforced plastics		
16	Biodegradable polymers – Conducting polymers.		
	UNIT-II **ELECTROCHEMICAL CELLS AND CORROSION** **CO2:** Outline the basics for the construction of electrochemicalcells, batteries and fuelcells. Understand the mechanism of corrosion and how it can be prevented.		
17	Galvanic cells - Reversible and irreversible cells	From: 26-5-21 To:15-6-21	Lecture Interspersed With Discussions
18	Single electrode potential – Electro chemical series and uses		
19	Standard electrodes (Hydrogen and Calomel electrodes)		
20	Concentration Cells -Batteries: Dry Cell - Ni-Cd cells		
21	Ni-Metal hydride cells - Li cells - Zinc – air cells. Fuel Cells		
22	**Corrosion** :- Definition – Theories of Corrosion		
23	Formation of galvanic cells by different metals		
24	concentration cells, differential aeration ,waterline corrosion		
25	Passivity of metals – Pitting corrosion - Galvanic series		
26	Factors which influence the rate of corrosion		

26	Factors which influence the rate of corrosion		
27	Protection from corrosion – Design and material selection		
28	Cathodic protection - Metallic (cathodic & anodic) coatings		
29	(Galvanizing, Tinning, Electroplating, Electroless plating)		
UNIT-III: CHEMISTRY OF MATERIALS **CO3: Express** the increase in demand as wide variety of advanced materials are introduced; which have excellent engineering properties. **Classify and discuss** the materials used in major industries like steel industry, metallurgical industries and construction industries and electrical equipment manufacturing industries. Lubrication is also **summarized.**		From: 16--6-21 To: 20-6-21	
30	Part- A: Nano materials:-		Lecture
30	Introduction-sol-gel method-characterization by BET, SEM		Interspersed
31	and TEM methodsapplications of graphene-carbon nanotubes	From: 28-6-21	With
32	and fullerenes:Types, preparation and applications Thermal	To: 7-7-21	Discussions
33	analysis techniques: Instrumentation and applications of		
34	thermogravimetric analysis (TGA), differential thermal		
35	analysis (DTA), differential scanning calorimetry (DSC).		
36	Part-B: Refractories: - Definition, classification, properties),		Lecture
37	refractoriness, refractoriness under load, porosity		Interspersed
38	(and thermal spalling), failure of refractories. Lubricants: -		With
39	Definition, mechanism of lubricants and properties (definition		Discussions
UNIT IV: FUEL TECHNOLOGY **CO4: Relate** the need of fuels as a source of energy to any industry, particularly industries like thermal power stations, steel industry, fertilizer industry etc., and hence introduced.			
40	Fuels – Introduction – Classification –	From: 08-7-21	
41	Calorific value - HCV and LCV – Dulong's formula		
42	Bomb calorimeter – Numerical problems	To: 26-7-21	Lecture
43	Coal - Proximate and ultimate analysis – Significance		Interspersed
44	Liquid fuels – Petroleum- Refining		With
45	Cracking- Synthetic petrol		Discussions
46	Petrol ,Diesel knocking - Octane and Cetane ratings		
47	Anti-knock agents – Power alcohol – Bio-diesel		
48	Gaseous fuels – Natural gas, LPG and CNG		
49	Combustion – Calculation of air for the combustion of a fuel		

50	Flue gas analysis , Orsat apparatus problems on combustion		
51	**Explosives**:- Rocket fuels		
UNIT V: WATER TECHNOLOGY **CO5: Explain** the importance and usage of water as basic material in almost all the industries; **interpret** drawbacks of steam boilers and also how portable water is supplied for drinking purposes.		From: 28-7-21 To: 07-8-21	
52	Determination of hardness by complexometric method		
53	Boiler troubles (priming and foaming, scale formation, boiler corrosion		Lecture
54	caustic embrittlement)-internal treatments-softening of hard water		Interspersed
55	zeolite processs and related sums, ion exchange process		With
56	Treatment of industrial waste water Portable water and its specifications-steps involved in purification of water-		Discussions
57	chlorination, break point chlorination-reverse osmosis and electro dialysis		

"**Engineering Chemistry**" by, Dr. Bharathi kumara Yallamanchili, VGS.

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TENTATIVELESSON PLAN : R201203
ENGINEERING MECHANICS

Course Title: ENGINEERING MECHANICS		Course code: R201203
Section : Sec I	Date : 10/05/2021	Page No : 01 to 03
Revision No : 00	Prepared By: R. KIRAN KUMAR	Approved By : HOD
Tools: MS TEAMS, GOOGLE MEET, PPT'S		

S.NO	TOPIC	Date	Mode of Delivery
UNIT-IINTRODUCTION TO ENGG. MECHANICS, SYSTEMS OF FORCES **CO1: Become familiar with a basic concepts of force and friction , direction and its application.** **TB: "ENGINEERING MECHANICS", S.S BHAVIKATTI, 1st Edition, New age publications, 2012.**			
1	**UNIT – 1** Introduction	From: 10/05/2021 To: 29/05/2021	Lecture interspersed with discussions Online teaching
2	Basic terminologies, Laws of mechanics, Laws of mechanics, Laws of mechanics		
3	Systems of Forces		
4	Resultant of Forces, Parallelogram law		
5	Parallelogram law problems		
6	Resolution method- concurrent forces, Problems		
7	Problems		
8	Problems		
9	Problems		
10	Moment of force, couple		
11	Moment of force, couple, Varignon's theorem		
12	Resolution of force to a force and couple		
13	Parallel forces and problems		
14	Problems		
15	Resultant of concurrent system in space		
16	Resultant of concurrent system in space-problems		
17	Friction introduction, coefficient of friction,		
18	coulomb's laws of dry friction, cone of friction, angle of friction		
19	Problems		
UNIT-II EQUILIBRIUM OF SYSTEMS OF FORCES **CO2: Gain knowledge about free body diagrams. Solution to problems using graphical methods and law of triangle of forces.** **TB:"ENGINEERING MECHANICS", S.S BHAVIKATTI, 1st Edition, New age publications, 2012.**			
20	Equilibrium of system of forces	From: 31/05/2021 To: 12/06/2021	Lecture interspersed with discussions
21	Equilibrium of system of forces problems		
22	Problems		
23	Problems- In space		
24	Problems – Beams		

moment of inertia and polar moment of inertia including transfer methods and their applications **TB:"ENGINEERING MECHANICS", S.S BHAVIKATTI, 1st Edition, New age publications, 2012.**			
21	**UNIT – 3** Centroids of simple figures	**From:** 14/06/2021 **To:** 15/07/2021	Lecture interspersed with discussions Online Teaching
22	Problems		
23	Problems		
24	Centroids of Composite Figures		
25	Problems		
26	Problems		
27	Pappus theorem – theorem 1 Pappus theorem – theorem 2		
28	Centre of gravity of simple body, right circular cone		
29	Area Moment of Inertia Definition, Polar Moment of Inertia, Transfer Theorems		
30	Moments of Inertia of Composite Figures-problems		
31	Mass moment of inertia of basic bodies – rod, rectangular plate, circular plate		
32	Mass moment of inertia of basic bodies –, solid cone, solid sphere		
UNIT-IV RECTILINEAR AND CURVILINEAR MOTION OF A PARTICLE **CO4:Become familiar with motion in straight line and in curvilinear paths, its velocity and acceleration computation and methods of representing plane motion. TB:"ENGINEERING MECHANICS", S.S BHAVIKATTI, 1st Edition, New age publications, 2012.**			
33	**UNIT – 4** Kinematics and Kinetics, Introductions	**From:** 16/07/2021 **To:** 31/07/2021	Lecture interspersed with discussions Online Teaching
34	Work Energy method		
35	applications to particle motion		
36	problems		
37	Impulse momentum method		
38	problems		
39	problems		
UNIT-V RIGID BODY MOTION **CO5:Become familiar with rigid motion kinematics and kinetics.** **TB:"ENGINEERING MECHANICS", S.S BHAVIKATTI, 1st Edition, New age publications, 2012.**			
40	**UNIT – 5** Kinetics - Analysis of body in translation, rotation	**From:** 02/08/2021 **To:** 14/08/2021	Lecture interspersed with discussions Online Teaching
41	Rotation about fixed axis		
42	Analysis in plane motion		
43	problems		
44	problems		
45	Principle of work energy, Impulse-momentum		
46	problems		
47	Revision		
48	Revision		

49	Kinetics - Analysis of body in translation, rotation		
50	Rotation about fixed axis		
51	Analysis in plane motion		
52	problems		
53	problems		
54	Principle of work energy, Impulse-momentum		
55	problems		

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TENTATIVE LESSON PLAN: R201204

Course Title: PROGRAMMING FOR PROBLEM SOLVING USING C		
Section : CIVIL	**Date : 10-05-2021**	**Page No :** 01 of 03
Revision No : 00	**Prepared By: Hameeda Khatoon**	**Approved By : HOD**

Tools: MS Teams, PPT

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I: Introduction to Computers **CO1: To learn about the computer systems, computing environments, developing of a computer program and Structure of a C Program.** **TB: Programming for Problem Solving, Behrouz A. Forouzan, Richard F.Gilberg, CENGAGE**			
1	Introduction to Computers	From: 11/05/2021 To: 26/05/2021	Online Class with MS Teams
2	Creating and Running Programs		
3	Computer Numbering System		
4	Storing Integers		
5	Storing Real Numbers		
6	Introduction to the C language		
7	Background C programs		
8	Identifiers, Types, Constants I/O		
9	Programming Examples		
10	Scope, Storage Classes and Type qualifier		
11	Structure of a C program: Expressions precedence and associativity		
12	Side Effects		
13	Evaluating Expressions		
14	Type Conversion statements		
15	Simple Programs		
16	Command Line Arguments		
17	Tutorial Class		

UNIT-II: Operators, selection and control statements **CO2: To gain knowledge of the operators, selection, control statements and repetition in C** **TB: Programming for Problem Solving, Behrouz A. Forouzan, Richard F.Gilberg, CENGAGE**			
18	Bitwise Operators: Exact Size Integers	From: 27/05/2021 To: 14/6/2021	Online Class with MS Teams
19	Logical bitwise operators		
20	Shift Operators		
21	Selection and Making decisions: Logical Data and Operators		
22	Two way Selection		
23	Multiway Selection, More standard functions		
24	Repitition: Concept of loop, Pretest and Post test loops, Initialization and updating		
25	Event and counter controlled Loops		
26	Loops in C, Other statements related to Looping		
27	Looping applications, Programming Examples.		
28	Tutorial Class		
UNIT-III: Arrays, Strings, Enumerated, Structure and Union **CO3: To learn about the design concepts of arrays, strings, enumerated structure and union types** **TB: Programming for Problem Solving, Behrouz A. Forouzan, Richard F.Gilberg, CENGAGE**			
29	Arrays: Concepts using Arrays in C	From: 15/06/2021 To: 30/06/2021	Online Class with MS Teams
30	Array applications		
31	Two dimensional arrays, Multi dimensional Arrays		
32	Strings: String concepts, C string		
33	String I/O Functions		
34	Arrays of String, String Manipulation Functions		
35	String Programming Examples		
36	Enumerated, Structure, and Union: The Type Definition (Type def), Enumerated Types		

37	Structures		
38	Unions		
39	Programming Examples		
40	Tutorial Class		
UNIT-IV: Pointers and Processor Commands **CO4: To assimilate about pointers, dynamic memory allocation and know the significance of pre-processor.** **TB: Programming for Problem Solving, Behrouz A. Forouzan, Richard F.Gilberg, CENGAGE**			
41	Pointers: Introduction pointers to pointers	From: 01/07/2021 To: 22/07/2021	Online Class with MS Teams
42	Compatability, Lvalue and Rvalue		
43	Pointer Applications: Arrays and Pointers		
44	Pointer arithmetic and Arrays		
45	Memory Allocation Function		
46	Array of pointers		
47	Program Applications		
48	Processor Commands		
49	Tutorial Class		
UNIT-V: Functions and files **CO5: To assimilate about File I/O and significance of functions.** **TB: Programming for Problem Solving, Behrouz A. Forouzan, Richard F.Gilberg, CENGAGE**			
50	Functions: Designing	From: 23/07/2021 To: 14/08/2021	Online Class with MS Teams
51	Structured Programs		
52	Function in C		
53	User Defined Functions		
54	Inter Function Communication		
55	Standard Functions		
56	Passing Array to Functions		
57	Passing Pointer to Functions		

58	Recursion		
59	Text i/O Files:		
60	Streams		
61	Standard Library input/ Output Functions		
62	Formatting I/O functions		
63	Character I/O functions		
64	Binary I/O: text versus Binary Streams		
65	Standard Library		
66	Functions for files		

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TENTATIVE LESSON PLAN: R201205

Course Title: BUILDING MATERIALS & CONCRETE TECHNOLOGY		
Section : Sec A	**Date : 10-05-2021**	**Page No :** 1 of 3
Revision No : 00	**Prepared By** :A.ANOOP KUMAR	**Approved By : HOD**

Tools: Black board, PPTs

S. No	Unit / Topic	Date	Mode of delivery
	UNIT 1: stones, brick, tiles, wood , paints **Co 1: To know various engineering properties of building construction materials and Suggest their suitability** **Tb:Building Materials by S.K.Duggal, new age international publications,**		Lecture interspersed with discussions
1	Introduction to stones,brick,tiles,wood & paints	11-05-2021	
2	Stones: classification of stones	12-05-2021	
3	Propertie of stones in structural requirement	13-05-2021	
4	Bricks: composition of good brick earth	15-05-2021	
5	Various methods of manufacturing of bricks	18-05-2021	
6	Tiles: characteristic of good tile	19-05-2021	
7	Manufacturing of tiles	19-05-2021	
8	Types of tiles	20-05-2021	
9	Wood: structure- properties	20-05-2021	
10	Seasoning of timber- classification of various type of woods used in buildings	21-05-2021	
11	Defects in timber	22-05-2021	
12	Paints: white washing and distempering	25-05-2021	
13	Constituent of paints	26-5-2021	
14	Types of paint- painting of new and old wood- varnish	27-05-2021	
15	Tutorial-1	**27-05-2021**	
	UNIT 2: aggregates, cement and admixture		

	Co2: Identify the functional role of ingredients of concrete and apply this knowledge to concrete mix design **Tb: Concrete technology by M.S Shetty**		
16	Aggregate classification	28-05-2021	
17	Bond,strength and mechanical properties of aggregates	29-05-2021	
18	Physical properties of aggregates, bulking of sand	01-06-2021	
19	Deleterious substance in aggregates, soundness of aggregate	02-06-2021	
20	Alkali-aggregate reaction- thermal properties	03-06-2021	
21	Sieve analysis- fineness modulus	04-06-2021	Lecture interspersed with discussions
22	Grading curves- grading of fine & coarse aggregates as per relevant is codes,maximum aggregate size	05-06-2021	
23	Portland cement: chemical composition, hydration, structure of hydrated cement	08-06-2021	
24	Setting of cement, fineness of cement	09-06-2021	
25	Tests for physical properties- different grades of cements	10-06-2021	
26	Supplementary cementitious materials: flyash, ggbs, silica fume,rice husk ash,calcinated ash	11-06-2021	
27	Admixtures: mineral and chemical admixtures	12-06-2021	
	UNIT 3: Fresh concrete **Co3:** Acquire and apply fundamental knowledge in the fresh and hardened properties of concrete. **Tb: Concrete technology by M.S Shetty**		
28	Manufacture of concrete	15-06-2021	
29	Mixing and vibration of concrete	16-06-2021	
30	Workability- segregation and bleeding	17-06-2021	
31	Factor affecting workability	18-06-2021	
32	Measurement of workability by different tets	19-06-2021	
33	Effect of time and temperature on workability	29-06-2021	
34	Quality of mixing water	30-06-2021	
35	Ready mix concrete, shortcrete	01-07-2021	
36	Tutorial-3	2-07-2021	

	UNIT 4: Hardened concrete **Co4: :** Acquire and apply fundamental knowledge in the fresh and hardened properties of concrete **Tb: Concrete technology by M.S Shetty**		Lecture interspersed with discussions
37	Water/cement ratio-abram's law	02-07-2021	
38	Gel space ratio	03-07-2021	
39	Nature of strength of concrete- maturity concept	06-07-2021	
40	Strength in tension and compression	07-07-2021	
41	Properties of hardened concrete (elasticity, creep shrinkage,poisso's ratio, water absorption, permeability, etc)	08-07-2021	
42	Properties of hardened concrete (elasticity, creep shrinkage,poisso's ratio, water absorption, permeability, etc)	09-07-2021	
43	Relation between compression and tenile strength, curing	10-07-2021	
44	Tutorial-4	13-07-2021	
	UNIT 5: Testing of hardened concrete **Co5:** Acquire and apply fundamental knowledge in the fresh and hardened properties of concrete **Tb: Concrete technology by M.S Shetty**		Lecture interspersed with discussions
45	Factor affecting properties of hardened concrete	14-07-2021	
46	Compression tests	15-07-2021	
47	Tension tests	16-07-2021	
48	Flexure tests	17-07-2021	
49	Non-destructive testing methods	20-07-2021	
50	Non-destructive testing methods	22-07-2021	
51	Codal provision for NDT	23-07-2021	
52	Rebound hammer and upv method	24-07-2021	
53	Rebound hammer and upv method	27-07-2021	
54	Tutorial-5	28-07-2021	

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HOD/Date 01/7/21

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TENTATIVE LESSON PLAN: R201206

Course Title: MATHEMATICS - III			
Section : EEE	**Date : 10-05-2021**	**Page No :** 01 of 03	
Revision No : 00	**Prepared By: K.BASAVARAJU**	**Approved By : HOD**	
Tools: Black board, PPT'S,MS Teams			
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
UNIT – I: VECTOR CALCULUS **CO1: To interpretthephysical meaningofdifferentoperatorssuchasgradient,curlanddivergence, to estimatetheworkdoneagainstafield, circulationandfluxusingvectorcalculus** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
1	**Vector Differentiation:**Introduction	From: 10/5/2021 to 29/5/2021	Lecture interspersed with discussions
2	Properties of vectors and scalars		
3	Derivative of vector – definition		
4	Vector differential operator		
5	Gradient of a vector		
6	Divergence of a vector		
7	Curl of a vector		
8	Properties of gradient		
9	Vector identities		
10	Vector identities		
11	Problems on application of gradient		
12	Problems on divergence and curl		
13	**Vector Integration**: Introduction		
14	Problems on line integral		
15	Problems on line integral		
16	Problems on surface integrals		
17	Problems on volume integrals		
18	Problems on Greens theorem		
19	Problems on Green theorem		
20	Problems on Gauss divergence theorem		
21	Problems on stokes theorem		
UNIT – II: LAPLACE TRANSFORMS **CO2: To applytheLaplacetransformfor solvingdifferentialequations** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
22	Laplace Transforms: Definitions, Existence	From 1/6/2021 To 15/6/2021	Lecture interspersed with discussions
23	Laplace Transform of standard functions		
24	Linearity property; Shifting properties Change of scale property		
25	Laplace Transforms of derivatives; Integrals		
26	$L(t^n f(t))$		
27	Laplace Transforms of division by t		
28	Evaluation of integrals		
29	Laplace Transforms of periodic functions; unit step functions; Unit impulse functions		
30	**Inverse Laplace Transforms:**		

	Finding L^{-1} using partial fractions		
31	Properties of inverse transform		
32	Convolution theorem		
33	Solutions of Difference Equations		
UNIT – III: FOURIER SERIES AND FOURIER TRANSFORMS **CO3:TO findorcomputetheFourierseriesofperiodicsignals ,abletoapply integral expressionsfor theforwardsandinverseFouriertransformtoarangeofnon-periodicwaveforms** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
34	Introduction	From 16/6/2021 To .3/6/2021	Lecture interspersed with discussions
35	Periodic functions		
36	Fourier series of periodic function		
37	Dirchlets conditions		
38	Even and odd functions		
39	Change of interval		
40	Half range sine and cosine series		
41	Fourier transforms		
42	Fourier integral theorem		
43	Fourier sine and cosine integrals		
44	Sine and cosine transforms		
45	Properties		
46	Inverse transforms		
47	Finite Fourier transforms		
UNIT – IV: PDE OF FIRST ORDER **CO4:To identifysolutionmethodsforpartialdifferentialequationsthatmodelphysicalprocesses** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
48	Introduction	From 5/7/2021 To 24/7/2021	Lecture interspersed with discussions
49	Formation of PDE by eliminating arbitrary constants		
50	Formation of PDE by eliminating arbitrary functions		
51	Solutions of PDE		
52	Method of grouping		
53	Method of multipliers		
54	Nonlinear PDE $f(p,q)=0$		
55	Nonlinear PDE $f(p,q,z)=0$		
56	Nonlinear PDE $f(p,x)=g(q,y)$		
57	Clairaut's equation		
58	PDE reducible to standard form		
59	$f(px^m, qy^n)=0$		
60	$f(pz^m, qz^m)=0$		
UNIT – V: SECOND ORDER PARTIAL DIFFERENTIAL EQUATIONS AND APPLICATIONS **CO5: To identifysolutionmethodsforpartialdifferentialequationsthatmodelphysicalprocesses** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
61	Introduction; Homogeneous Linear P.D.E with constant coefficients; finding CF Finding PI: RHS term of the type $e^{(ax+by)}$	From 26/7/2021	Lecture interspersed
62	$\sin(ax+by)$; $\cos(ax+by)$		

63	$x^m y^n$	To 14/8/2021	with discussions
64	Method of separation of variables		
65	Solution of one dimensional wave equation		
66	Heat equation		
67	Two dimensional Laplace equation		

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TENTATIVE LESSON PLAN: R201207

Course Title: Applied Physics			
Section :EEE	Date : 10.05.2021	Page No : 00	
Revision No :00	Prepared By : B.NAGA JYOTHIRMAI	Approved By : HOD	
Tools:			

No. of Periods	TOPIC	DATE	Mode of Delivery
UNIT-I	**Wave Optics** **CO1:** Analyze the differences between interference and diffraction with applications. And illustrate the resolving power of various optical instruments.	From: 10/05/2021 To: 03/06/2021	Lecture interspersed with discussions
1	**INTERFERENCE:** Introduction		
2	Principle of Superposition		
3	Coherent Sources-Types		
4	Interference- Types		
5	Interference in Thin Films		
6	Colours in Thin Film		
7	Newton's Rings		
8	Applications of Interference		
9	Problems		
10	**Diffraction:** Introduction		
11	Fresnel and Fraunhoffer Diffraction		Lecture interspersed with discussions
12	Fraunhoffer diffraction at single slit		
13	Fraunhoffer diffraction at single slit		
14	Fraunhoffer diffraction at Double Slit		
15	Fraunhoffer diffraction at N-Slits		
16	Grating Equation		
17	Dispersive Power of Grating		
18	Resolving Power of Grating		
19	Problems		
20	**Polarization :** Introduction		
21	Types of Polarization		
22	Polarization by Reflection, Refraction		
23	Polarization by Duoble Refraction		Lecture interspersed with discussions
24	Nicol Prism		
25	Quarter Wave & Half Wave Plates and Problems		
UNIT- II	**Lasers and Fiber Optics** **CO2:** Explain various types of emission of radiation. Identify the role of laser in engineering applications. Identify the applications of optical fibers in medical, communication and other fields. Apply the fiber optic concepts in various fields.		
26	**Lasers :** Introduction		
27	Characteristics of Laser		
28	Spontaneous and Stimulated emission		
29	Einstein's Coefficients		
30	Population Inversion, Lasing action		
31	Pumping Mechanism-Pumping method		

30	Population Inversion, Lasing action	To: 15-06-2021	Lecture interspersed with discussions
31	Pumping Mechanism-Pumping method		
32	Ruby Laser		
33	Helium Neon Laser		
34	Applications of Lasers		
35	**Fiber Optics:** Introduction		
36	Principle of Optical Fiber		
37	Acceptance angle and Numerical Aperture		
38	Classifications optical fibers based on refractive index profile and modes		
39	Propagation of electromagnetic wave through optical fibers, applications		
40	Problems		
UNIT -III	**Quantum Mechanics, Free Electron Theory and Band theory** **CO3:** Describe the dual nature of matter. Identify the role of Schrodinger's time independent wave equation in studying particle in one-dimensional infinite potential well. Identify the role of classical and quantum free electron theory in the study of electrical conductivity.	From: 17-06-2021 To 06-07-2021	Lecture interspersed with discussions
41	**Quantum Mechanics:** Introduction		
42	Dual Nature of Matter		
43	Heisenberg's Uncertainty Principle, Significance and properties of wave function		
44	Schrodinger Time Independent Equation		
45	Schrodinger Time Dependent Equation		
46	Particle in a Box		
47	Problems		
48	**Free Electron Theory:** Introduction		
49	Classical free electron theory- merits and demerits		
50	Quantum free electron theory- merits and demerits		
51	Equation for electrical conductivity based on quantum free electron theory		
52	Fermi-Dirac distribution, Fermi energy.		
53	Density of states (3D)		
54	Problems		
55	**Band theory of Solids :**Introduction		
56	Bloch's Theorem, Kronig - Penney model		
57	E vs K diagram - v vs K diagram		
58	Effective Mass of Electron, Concept of Hole		
59	Energy Bands in Crystalline Solids Classification		
UNIT-IV	**Dielectric and Magnetic Materials** **CO4:** Explain the concept of dielectric constant and polarization in dielectric materials. Explain the applications of dielectric and magnetic materials . Apply the concept of magnetism to magnetic devices.	From 08-07-2021	Lecture interspersed
60	**Dielectric Materials:** Introduction, Dielectric polarization		
61	Types of polarizations- Electronic polarisation		
62	Ionic polarisation, Orientation polarizations		
63	Lorentz internal field		
64	Clausius-Mossotti equation, Piezoelectricity.		

65	**Magnetic Materials:** Introduction	To 24-07-2021	with discussions
66	Magnetic dipole moment , Magnetization, Magnetic susceptibility and permeability		
67	Origin of permanent magnetic moment		
68	Classification of magnetic materials: Dia, para, Ferro, antiferro and Ferri magnetic materials		
69	Domain concept for Ferromagnetism, Domainwalls		
70	Hysteresis soft and hard magnetic materials		
71	Eddy currents, Engineering applications and Problems		
UNIT – V	**Semiconductors and Superconductors** **CO5:** Explain the properties of charge carriers in semiconductors . Identify the type of semiconductor using Hall effect . Identify applications of semiconductors in electronic devices. Explain Meissner's effect, BCS theory & Josephson effect in superconductors.	From 26-07-2021	
72	**Semiconductors:** Introduction, Intrinsic semiconductors	To 07-08-2021	Lecture interspersed with discussions
73	Density of charge carriers ,Electrical conductivity, Fermi level		
74	Extrinsic semiconductors , density of charge carriers, Dependence of Fermi energy on carrier concentration and temperature		
75	Drift and diffusion currents – Einstein's equation		
76	Hall effect, Hall coefficient, Applications of Hall effect		
77	**Superconductors**: Introduction – Properties of superconductors		
78	Meissner effect , Type I and Type II superconductors		
70	BCS theory , Josephson effects (AC and DC)		
80	SQUID's – High Tc superconductors , Applications of superconductors		

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TENTATIVE LESSON PLAN: R20\209

Course Title: ELECTRICAL CIRCUIT ANALYSIS-I		
Section :	**Date: 10-05-2021**	**Page No: 1 of 3**
Revision No:	**Prepared by : Mr. K.SATYANARAYANA**	**Approved by :HOD**

Tools : Black board, PPTs

No.of periods	Topics	Date	Mode of Delivery
UNIT –I INTRODUCTION TO ELECTRICAL CIRCUITS **CO1: Various Electrical networks in presence of active and passive elements** **TB:William Hayt and Jack E.Kemmerley " Engineering Circuit Analysis" McGraw Hill Company, Sixth Edition**			
1	Basic Concepts of passive elements of R, L, C and their V-I relations	11.05.21	Lecture interspersed with discussions
2	Basic Concepts of passive elements of R, L, C and their V-I relations	12.05.21	
3	Basic Concepts of passive elements of R, L, C and their V-I relations	13.05.21	
4	Problems	15.05.21	
5	Kirchhoff's laws	18.05.21	
6	Kirchhoff's laws	19.05.21	
7	Problems	20.05.21	
8	Network reduction techniques (series, parallel, series - parallel, star-to-delta and delta-to-star transformation)	21.05.21	
9	Network reduction techniques (series, parallel, series - parallel, star-to-delta and delta-to-star transformation)	22.05.21	
10	Problems	25.05.21	
11	Problems	26.05.21	
12	Network reduction techniques (series, parallel, series - parallel, star-to-delta and delta-to-star transformation)	27.05.21	
13	Network reduction techniques (series, parallel, series - parallel, star-to-delta and delta-to-star transformation)	28.05.21	
14	Problems	29.05.21	
15	source transformation technique	01.06.21	
16	source transformation technique	02.06.21	
17	mesh analysis to DC networks with dependent and independent voltage and current sources., node and mesh analysis.	03.06.21	
18	mesh analysis to DC networks with dependent and independent voltage and current sources., node and mesh analysis.	04.06.21	
19	Problems	05.06.21	
20	Problems	08.06.21	
21	Nodal analysis to DC networks with dependent and independent voltage and current sources., node and mesh	09.06.21	

22	Nodal analysis to DC networks with dependent and independent voltage and current sources., node and mesh	10.06.21	
23	Problems	11.06.21	
24	Problems	12.06.21	
UNIT-II MAGNETIC CIRCUITS **CO2: Able to Understand Any Magnetic circuits with various dot conventions** **TB:I.William Hayt and Jack E.Kemmerley " Engineering Circuit Analysis" McGraw Hill Company, Sixth Edition**			
25	Introduction to Magnetic Circuits	15.06.21	Lecture interspersed with discussions
26	Basic definition of MMF, flux and reluctance	16.06.21	
27	analogy between electrical and magnetic circuits	17.06.21	
28	Faraday's laws of electromagnetic induction	18.06.21	
29	Faraday's laws of electromagnetic induction	19.06.21	
30	concept of self and mutual inductance	29.06.21	
31	Dot convention	30.06.21	
32	coefficient of coupling and composite magnetic circuit	01.07.21	
33	coefficient of coupling and composite magnetic circuit	02.07.21	
34	Problems	06.07.21	
35	Problems	07.07.21	
36	analysis of series and parallel magnetic circuits	08.07.21	
37	analysis of series and parallel magnetic circuits	09.07.21	
38	Problems	10.07.21	
39	Problems	13.07.21	
40	Problems	14.07.21	
UNIT-III SINGLE PAHSE AC SYSTEMS **CO3: Able to understand any R,L,C network with sinusoidal excitations** **TB:William Hayt and Jack E.Kemmerley " Engineering Circuit Analysis" McGraw Hill Company, Sixth Edition**			
41	Periodic waveforms (determination of rms, average value and form factor)	15.07.21	Lecture interspersed with discussions
42	concept of phasor, phase angle and phase difference	16.07.21	
43	waveforms and phasor diagrams for lagging, leading networks, complex and polar forms of representations	17.07.21	
44	waveforms and phasor diagrams for lagging, leading networks, complex and polar forms of representations	20.07.21	
45	node and mesh analysis	22.07.21	
46	node and mesh analysis	23.07.21	
47	Problems	24.07.21	
48	Steady state analysis of R, L and C circuits	27.07.21	
49	Steady state analysis of R, L and C circuits	28.07.21	
50	Steady state analysis of R, L and C circuits	29.07.21	
51	power factor and its significance	30.07.21	
52	real, reactive and apparent power	01.08.21	
53	waveform of instantaneous power and complex power	02.08.21	
54	Problems	03.08.21	
55	Problems	06.08.21	
56	Problems	07.08.21	

UNIT-IV RESONANCE-LOCUS DIAGRAMS

CO4: Able to understand any R,L network with variation of any one of the parameters i.e.R,L,C and frequency.

TB:William Hayt and Jack E.Kemmerley " Engineering Circuit Analysis" McGraw Hill Company, Sixth Edition

57	Series Resonance and selectively Bandwidth and Quality Factor	10.08.21	Lecture interspersed with discussions
58	Parallel Resonance and selectively Bandwidth and Quality Fact	11.08.21	
59	Problems	12.08.21	
60	Problems	13.08.21	
61	locus diagram- RL, RC, RLC with R, L and C variables	14.08.21	
62	locus diagram- RL, RC, RLC with R, L and C variables	17.08.21	
63	locus diagram- RL, RC, RLC with R, L and C variables	18.08.21	
64	Problems	19.08.21	
65	Problems	20.08.21	

UNIT-V NETWORK THEOREMS (DC & AC EXCITATIONS)

CO5: Able to understand Electrical networks by using principles of network theorems.

TB:William Hayt and Jack E.Kemmerley " Engineering Circuit Analysis" McGraw Hill Company, Sixth Edition

66	Superposition theorem	21.08.21	Lecture interspersed with discussions
67	Superposition theorem	24.08.21	
68	Problems	25.08.21	
69	Thevenin's theorem	26.08.21	
70	Thevenin's theorem	27.08.21	
71	Problems	28.08.21	
72	Norton's theorem	31.08.21	
73	Norton's theorem	01.09.21	
74	Problems	02.09.21	
75	Maximum Power Transfer theorem	03.09.21	
76	Problems	04.09.21	
77	Reciprocity theorem	07.09.21	
78	Millman's theorem	08.09.21	
79	compensation theorem	09.09.21	
80	Problems	09.09.21	

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TENTATIVE LESSON PLAN(R201212)

Course Title:Object Oriented Programming through JAVA		
Section : A and B	Date:10-5-2021	Page No: 1 of 2
Revision No:	Prepared by : CH SIVA RAJESH	Approved by :HOD

Tools : PPTs

No.of periods	Topics	Date	Mode of Delivery
UNIT-I Basics of Object Oriented Programming (OOP) **CO1 : Understanding the basics of Programming** **TB:: Programming in JAVA, Sachin Malhotra, Saurabh Choudary, Oxford**			
1	Basics of Java programming	10-05-2021	Lecture interspersed with discussions
2	Data types	11-05-2021	
3	Variables	12-05-2021	
4	Operators	15-05-2021	
5	Control structures including selection, Looping	17-05-2021	
6	Overloading	18-05-2021	
7	Arrays in java	19-05-2021	
8	Basics of objects and classes in java	21-05-2021	
9	Constructors	22-05-2021	
10	Finalizer, Visibility modifiers	24-05-2021	
11	Methods and objects	25-05-2021	
12	Inbuilt classes like String, Character, StringBuffer	28-05-2021	
13	File, this reference.	29-05-2021	
UNIT-II JAVA Basics **CO2 : Understanding the inheritance and its types** **TB:: Programming in JAVA, Sachin Malhotra, Saurabh Choudary, Oxford**			
14	Inheritance in java	31-05-2021	Lecture interspersed with discussions
15	Super and sub class	01-06-2021	
16	Overriding	02-06-2021	
17	Object class	04-06-2021	
18	Polymorphism	05-06-2021	
19	Dynamic binding	07-06-2021	
20	Generic programming	08-06-2021	
21	Casting objects, Instance of operator	09-06-2021	
22	Abstract class	11-06-2021	
23	Interface in java	12-06-2021	
24	Package in java	14-06-2021	
25	UTIL package	15-06-2021	
UNIT-III Inheritance **CO3 : Understanding how to work with GUI components** **TB:: Programming in JAVA, Sachin Malhotra, Saurabh Choudary, Oxford**			
26	Event handling in java	16-06-2021	
27	Mouse and key events	18-06-2021	

UNIT-III Trees

CO1 : Understanding traversal methods in the Trees.

TB:: Fundamentals of Data Structures in C, 2nd Edition, E.Horowitz, S.Sahni and Susan Anderson Freed, Universities Press Pvt. Ltd

26	Terminology	19-06-2021	
27	Representation of Trees	28-06-2021	
28	Binary Trees-Properties of Binary Trees	29-06-2021	
29	Binary Tree Representations	30-06-2021	
30	Preorder-Inorder and Postorder Traversal-	02-07-2021	
31	ThreadsThread Binary Trees	03-07-2021	
32	Balanced Binary Trees	05-07-2021	
33	Heaps-Max Heap	06-07-2021	
34	Insertion into and Deletion from a Max Heap	07-07-2021	
35	-Binary Search Trees-Searching	08-07-2021	
36	Insertion and Deletion from a Binary Search Tree	09-07-2021	
37	Height of Binary Search Tree	12-07-2021	
38	m-way Search Trees	13-07-2021	
39	B-Trees	13-07-2021	

UNIT-IV Graphs

CO1 : Understanding various algorithms available for the graphs

TB:: Fundamentals of Data Structures in C, 2nd Edition, E.Horowitz, S.Sahni and Susan Anderson Freed, Universities Press Pvt. Ltd

40	Graph Theory Terminology	14-07-2021	Lecture interspersed with discussions
41	Graph Representation-Graph Operations	14-07-2021	
42	Depth First Search	15-07-2021	
43	Breadth First Search	16-07-2021	
44	Connected Components	16-07-2021	
45	Spanning Trees-Biconnected Components	19-07-2021	
46	Minimum Cost Spanning Trees	19-07-2021	
47	Kruskal's Algorithm	20-07-2021	
48	Prism's Algorithm	22-07-2021	
49	Shortest Paths-Transitive Closure	23-07-2021	
50	AllPairs Shortest Path	26-07-2021	
51	Warshall's Algorithm	26-07-2021	

UNIT-V Searching and Sorting

CO1 : Understanding sorting and searching in the data ret retrival applications

TB:: Fundamentals of Data Structures in C, 2nd Edition, E.Horowitz, S.Sahni and Susan Anderson Freed, Universities Press Pvt. Ltd

52	Searching -Linear Search	27-07-2021	Lecture interspersed with discussions
53	Binary Search	28-07-2021	
54	Fibonacci Search	29-07-2021	
55	Hashing-Sorting-Definition	30-07-2021	
56	Bubble Sort	02-08-2021	
57	Insertion sort	02-08-2021	
58	Selection Sort	03-08-2021	

59	Quick Sort	03-08-2021	with discussions
60	Merging-Merge Sort-Iterative and Recursive Merge	04-08-2021	
61	Shell Sort	04-08-2021	
62	Radix Sort	05-08-2021	
63	Heap Sort	06-08-2021	

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TENTATIVE LESSON PLAN: CIVIL R201227

Course Title: BASIC CIVIL AND MECHANICAL ENGINEERING		
Section : Sec A	**Date : 10-05-2021**	**Page No :** 01 of 03
Revision No : 00	**Prepared By** :A.KRISHNA PRIYA	**Approved By : HOD**

Tools: Black board, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT –I CO1: Apply Shear force diagram & Bending moment diagram principles for Cantilever and Simply supported beams. TB: Strength of materials by **R.K.Bansal**			
1.	Basic definitions of force-stress,strain	11-05-2021	Lecture interspersed with discussions
2.	Elasticity,shear force and bending moment	12-05-2021	
3.	Torsion,simple problems related to shear force and bending moment for cantilever beam	13-05-2021	
4.	simple problems related to shear force and bending moment for simply supported beam	15-05-2021	
5.	Problems on shear force and bending moment for cantilever beam	18-05-2021	
6.	Problems on shear force and bending moment for cantilever beam	19-05-2021	
7.	Problems on shear force and bending moment for cantilever beam	20-05-2021	
8.	Problems on shear force and bending moment for simply supported beam	21-05-2021	
9.	Problems on shear force and bending moment for simply supported beam	22-05-2021	
10.	Problems on shear force and bending moment for simply supported beam	25-05-2021	
11.	**Tutorial**	26-05-2021	
UNIT –II CO 2: Apply concepts of Rosette analysis for strain measurements. TB: Basic Civil engineering by Ramamrutham			
12.	Introduction to strain,Measurement of strain	27-05-2021	Lecture interspersed with discussions
13.	Electrical capacitance	28-05-2021	
14.	Resistance strain gauges	29-05-2021	
15.	Resistance strain gauges	01-06-2021	
16.	Multi channel strain indicators	02-06-2021	
17.	Rosette analysis Rectangular and triangular strain rosette	03-06-2021	
18.	Rosette analysis Rectangular and triangular strain rosette	04-06-2021	
19.	**Tutorial**	05-06-2021	
UNIT –III CO 3: Analyse the characteristics of common building materials. TB: Basic Civil and Mechanical Engineering, by Prof.V.Vijayan, Prof. M.Prabhakaran			
20.	Introduction to building materials	08-06-2021	
21.	Characteristics of common building materials	09-06-2021	
22.	Introduction to bricks	10-06-2021	
23.	Types of bricks	11-06-2021	
24.	Testing on bricks	12-06-2021	

27.	Seasoning and defects in timber	17-06-2021	Lecture interspersed with discussions
28.	Introduction to glass	18-06-2021	
29.	Clasification and uses of glass	19-06-2021	
30.	Introduction to steel	29-06-2021	
31.	Steel applications in construction industry	30-06-2021	
32.	**Tutorial**	01-07-2021	
UNIT –IV	**Hydraulic Turbines And Pumps:**		
CO4: Compare the working characteristics of Internal Combustion engines.			
TB: Elements of Mechanical Engineering Fourth Edition S Trymbaka Murthy, University Press.			
33.	Introduction to power transmission tools	02-07-2021	Lecture interspersed with discussions
34.	Hydraulic turbines	03-07-2021	
35.	Classification of turbines	06-07-2021	
36.	Difference between impulse and reaction turbine	07-07-2021	
37.	Pumps: classification of pumps	08-07-2021	
38.	Centrifugal pump applications	09-07-2021	
39.	Priming – reciprocal pumps	10-07-2021	
40.	Single and double acting pumps	13-07-2021	
41.	Comparision with centrifugal pumps	14-07-2021	
42.	**Tutorial**	15-07-2021	
UNIT –V	**I.C Engine, Boilers**		
CO 5: Compare the differences between boiler mountings and accessories.			
TB: Elements of Mechanical Engineering Fourth Edition S Trymbaka Murthy, University Press.			
43.	Introduction to ic engines	16-07-2021	Lecture interspersed with discussions
44.	Heat engine	17-07-2021	
45.	Types of heat engine	20-07-2021	
46.	Classification of ic engine	22-07-2021	
47.	Engine-valve timing diagram	23-07-2021	
48.	Port timing diagram	24-07-2021	
49.	Comparision of 2s & 4s engines	27-07-2021	
50.	Compariion of petrol engine & dieel engine	28-07-2021	
51.	Fuel system of a petrol engine	29-07-2021	
52.	Ignition systems	30-07-2021	
53.	Introduction to boilers, clarification of boilers	31-07-2021	
54.	Simple vertical boiler	03-08-2021	
55.	Cochran boiler	04-08-2021	
56.	Bobcock and Wilcox benson boiler	05-08-2021	
57.	Difference between fire tube and water tube boiler	06-08-2021	
58.	Boiler mounting and accessories	07-08-2021	
59.	**Tutorial**	10-08-2021	

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TENTATIVE LESSON PLAN: R201201

Course Title: MATHEMATICS - II		
Section : MECH	**Date : 10-05-2021**	**Page No :** 01 of 02
Revision No : 00	**Prepared By : K.BASAVARAJU**	**Approved By : HOD**

Tools: Black board, PPT'S, MS Teams

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-1: SOLVING SYSTEM OF LINEAR EQUATIONS, EIGEN VALUES AND EIGEN VECTORS **CO1: solve system of linear algebraic equations using Gauss elimination, Gauss Jordan, Gauss Seidel (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
1	Introduction to matrices	From: 10-05-2021 To: 29-05-2021	Lecture interspersed with discussions
2	Rank of matrix- definition, properties		
3	Problems on rank by Echelon form		
4	Rank by normal form		
5	PAQ form problems		
6	Homogeneous system AX=0		
7	Non Homogeneous system AX=B		
8	Problems on rank method		
9	Gauss Elimination method		
10	Eigen values – definition		
11	Properties of Eigen values		
12	Properties of Eigen values		
13	Problems on finding eigen values, vectors		
14	Problems on finding eigen values, vectors		
UNIT – II:, CALEY-HAMILTON THEOREM, QUADRATIC FORMS **CO2: Develop the use of matrix algebra techniques that is needed by engineers for practical applications (L6)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
15	Caley Hamilton theorem, verification, problems		

16	Finding inverse and power of a matrix by caley Hamilton theorem	From: 31-05-2021 To: 12-06-2021	Lecture interspersed with discussions
17	Diagonalization – problems		
18	Quadratic forms – definition, examples		
19	Matrix form of a quadratic form		
20	Canonical form of a quadratic form		
21	Methods of reducing a QF in to canonical form		
22	Orthogonal reduction method		
23	Congruent operations method		
24	Lagrange's method		
25	Problems on finding nature of a QF		
UNIT-III : UNIT – III: ITERATIVE METHODS: **CO3: Avaluate approximating the roots of polynomial and transcendental equations by different algorithms (L5)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
26	Introduction	From: 14-06-2021 To: 19-06-2021 & From: 28-06-2021 To: 07-07-2021	Lecture interspersed with discussions
27	Method – 1: Bisection method		
28	Problems		
30	Method – 2: Regula falsi method		
31	Problems		
33	Method – 3: Iteration method		
34	Problems		
35	Method – 4: Newton Raphson method		
36	Problems		
37	Newton Raphson method simultaneous equations		
38	Gauss Jacobi Method		
39	Gauss Seidal Method		
40	problems		
UNIT – IV: INTERPOLATION **CO4: Apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
41	Introduction: Forward and Backward Differences		

42	Newton's Forward interpolation formula	From: 08-07-2021 To: 24-07-2021	Lecture interspersed with discussions
43	Problems		
44	Newton's Backward interpolation formula		
45	Problems		
46	Gauss Forward interpolation formula – Problems		
47	Problems		
48	Gauss Backward interpolation formula – Problems		
49	Problems		
50	Lagranges interpolation formula – Problems		
51	Problems		
52	Operators		
UNIT – V: NUMERICAL INTEGRATION AND SOLUTION OF ORDINARY DIFFERENTIAL EQUATION **CO5: Apply different algorithms for approximating the solutions of ordinary differential equations to its analytical computations (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
53	Trapezoidal rule	From: 26-07-2021. To: 07-08-2021	Lecture interspersed with discussions
54	Simpson's 1/3 rule		
55	Problems		
56	Simpson's 3/8 rule		
57	Taylor's series method		
58	Problems		
59	Picard's method of successive approximation		
60	Euler's method		
61	Euler's modified method		
62	Problems		
63	Runge kutta method		
64	Problems		

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Tentative Lesson Plan: R201202

Course Title: ENGINEERING CHEMISTRY		
Section : MECHANICAL	Date:11-5-2021	Page No : 3
Revision No :	Prepared By: B.SOWJANYA	Approved By : HOD

Tools:

No. of Periods	TOPIC	Date	Mode of Delivery

S.NO	TOPIC		
	UNIT –I HIGH POLYMERS AND PLASTICS **CO1:** Importance of usage of plastics in household appliances and composites(FRP) in aerospace and automotive industries.		
1.	Polymerisation:- Introduction	From: 11-5-21 To:25-5-21	Lecture Interspersed With Discussions
2.	Mechanism of polymerization		
3.	Stereo regular polymers		
4.	Methods of polymerization(emulsion and suspension)		
5.	Physical and mechanical properties		
6.	Advantages and limitations of plastics		
7.	Thermoplastics and Thermosetting plastics		
8.	Compounding of plastics		
9.	Fabrication (4/5 techniques) of plastics		
10.	Preparation, properties and applications of PE,PVC		
11	Bakelite Teflon and polycarbonates		
12	Elastomers :- Natural rubber- compounding		
13	Vulcanization – Synthetic rubbers : Buna S, Buna N,		
14	Thiokol ,polyurethanes -Applications of elastomers		
15	Composite materials & Fiber reinforced plastics		
16	Biodegradable polymers – Conducting polymers.		
	UNIT-II **ELECTROCHEMICAL CELLS AND CORROSION** **CO2:** Outline the basics for the construction of electrochemicalcells, batteries and fuelcells. Understand the mechanism of corrosion and how it can be prevented.		
17	Galvanic cells - Reversible and irreversible cells	From: 26-5-21 To:15-6-21	Lecture Interspersed With Discussions
18	Single electrode potential – Electro chemical series and uses		
19	Standard electrodes (Hydrogen and Calomel electrodes)		
20	Concentration Cells -Batteries: Dry Cell - Ni-Cd cells		
21	Ni-Metal hydride cells - Li cells - Zinc – air cells. Fuel Cells		
22	**Corrosion** :- Definition – Theories of Corrosion		
23	Formation of galvanic cells by different metals		
24	concentration cells, differential aeration ,waterline corrosion		
25	Passivity of metals – Pitting corrosion - Galvanic series		

	series		
26	Factors which influence the rate of corrosion		
27	Protection from corrosion -- Design and material selection		
28	Cathodic protection - Metallic (cathodic & anodic) coatings		
29	(Galvanizing, Tinning, Electroplating, Electroless plating)		
UNIT-III: CHEMISTRY OF MATERIALS **CO3: Express** the increase in demand as wide variety of advanced materials are introduced; which have excellent engineering properties. **Classify and discuss** the materials used in major industries like steel industry, metallurgical industries and construction industries and electrical equipment manufacturing industries. Lubrication is also **summarized.**		From: 16--6-21 To: 20-6-21	
30	Part- A: Nano materials:-		Lecture
30	Introduction-sol-gel method-characterization by BET, SEM		Interspersed
31	and TEM methodsapplications of graphene-carbon nanotubes	From: 28-6-21	With
32	and fullerenes:Types, preparation and applications Thermal	To: 7-7-21	Discussions
33	analysis techniques: Instrumentation and applications of		
34	thermogravimetric analysis (TGA), differential thermal		
35	analysis (DTA), differential scanning calorimetry (DSC).		
36	Part-B: Refractories: - Definition, classification, properties),		Lecture
37	refractoriness, refractoriness under load, porosity		Interspersed
38	(and thermal spalling), failure of refractories. Lubricants: -		With
39	Definition, mechanism of lubricants and properties (definition		Discussions
UNIT IV: FUEL TECHNOLOGY **CO4: Relate** the need of fuels as a source of energy to any industry, particularly industries like thermal power stations, steel industry, fertilizer industry etc., and hence introduced.			
40	Fuels – Introduction – Classification –	From: 08-7-21	
41	Calorific value - HCV and LCV – Dulong's formula		
42	Bomb calorimeter – Numerical problems	To: 26-7-21	Lecture
43	Coal - Proximate and ultimate analysis – Significance		Interspersed
44	Liquid fuels – Petroleum- Refining		With
45	Cracking- Synthetic petrol		Discussions
46	Petrol ,Diesel knocking - Octane and Cetane ratings		
47	Anti-knock agents – Power alcohol – Bio-diesel		
48	Gaseous fuels – Natural gas, LPG and CNG		

49	Combustion – Calculation of air for the combustion of a fuel		
50	Flue gas analysis , Orsat apparatus problems on combustion		
51	**Explosives**:- Rocket fuels		
UNIT V: WATER TECHNOLOGY **CO5: Explain** the importance and usage of water as basic material in almost all the industries; **interpret** drawbacks of steam boilers and also how portable water is supplied for drinking purposes.		From: 28-7-21 To: 07-8-21	
52	Determination of hardness by complexometric method		
53	Boiler troubles (priming and foaming, scale formation, boiler corrosion		Lecture
54	caustic embrittlement)-internal treatments-softening of hard water		Interspersed
55	zeolite processs and related sums, ion exchange process		With
56	Treatment of industrial waste water Portable water and its specifications-steps involved in purification of water-		Discussions
57	chlorination, break point chlorination-reverse osmosis and electro dialysis		

"**Engineering Chemistry**" . by, Dr. Bharathi kumara Yallamanchili, VGS.

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TENTATIVE LESSON PLAN: R201210
ENGINEERING MECHANICS

Course Title: ENGINEERING MECHANICS		Course code: R201210
Section : Sec I	Date : 10/05/2021	Page No : 01 to 03
Revision No : 00	Prepared By: R. KIRAN KUMAR	Approved By : HOD
Tools: MS TEAMS, GOOGLE MEET, PPT'S		

S.NO	TOPIC	Date	Mode of Delivery
UNIT-IINTRODUCTION TO ENGG. MECHANICS, SYSTEMS OF FORCES **CO1:Become familiar with a basic concepts of force and friction , direction and its application.** **TB: "ENGINEERING MECHANICS", S.S BHAVIKATTI, 1st Edition, New age publications, 2012.**			
1	**UNIT – 1** Introduction, Basic terminologies	**From:** 10/05/2021 **To:** 29/05/2021	Lecture interspersed with discussions Online Teaching
2	Laws of mechanics		
3	Systems of Forces		
4	Resultant of Forces, Parallelogram law,		
5	Parallelogram law problems		
6	Resolution method- concurrent forces, Problems		
7	Problems		
8	Moment of force, couple, Varignon's theorem		
9	Resolution of force to a force and couple, Parallel forces and problems		
10	Resultant of concurrent system in space		
11	Resultant of concurrent system in space-problems		
12	Friction introduction, coefficient of friction, coulomb's laws of dry friction, cone of friction, angle of friction, Problems		
13	Problems, wedge friction problem		
14	Ladder problem		
UNIT-II EQUILIBRIUM OF SYSTEMS OF FORCES **CO2: Gain knowledge about free body diagrams. Solution to problems using graphical methods and law of triangle of forces.** **TB:"ENGINEERING MECHANICS", S.S BHAVIKATTI, 1st Edition, New age publications, 2012.**			
15	Equilibrium of system of forces	**From:** 31/05/2021 **To:** 12/06/2021	Lecture interspersed with discussions Online Teaching
16	Equilibrium of system of forces problems		
17	Problems		
18	Problems- In space		
19	Problems – Beams		
20	Graphical method of analysis		
UNIT-III CENTROID , CENTRE OF GRAVITY, AREA MOMENTS OF INERTIA, MASS MOMENT OF INERTIA **CO3:Become familiar with the concepts of centre of gravity, Gain knowledge about**			

25	Problems – Beams		Online Teaching
26	Graphical method of analysis		
UNIT-III CENTROID , CENTRE OF GRAVITY **CO3:Become familiar with the concepts of centre of gravity, concepts of friction** **TB:"ENGINEERING MECHANICS", S.S BHAVIKATTI, 1st Edition, New age publications, 2012.**			
27	**UNIT – 3** Centroids of simple figures	From: 14/06/2021 To: 15/07/2021	Lecture interspersed with discussions Online Teaching
28	Problems		
29	Problems		
30	Problems		
31	Centroids of Composite Figures		
32	Problems		
33	Problems		
34	Problems		
35	Problems		
36	Pappus theorem – theorem 1 Pappus theorem – theorem 2		
37	Centre of gravity of simple body, right circular cone		
38	Types of friction, limiting friction		
39	Laws of friction, Static & Dynamic friction		
40	Problems		
41	Problems		
42	Wedge friction		
43	Problems		
44	problems		
UNIT-IV AREA MOMENTS OF INERTIA,MASS MOMENT OF INERTIA **CO4:Gain knowledge about moment of inertia and polar moment of inertia including transfer methods and their applications.** **TB:"ENGINEERING MECHANICS", S.S BHAVIKATTI, 1st Edition, New age publications, 2012.**			
45	**UNIT – 4** Area Moment of Inertia Definition, Polar Moment of Inertia, Transfer Theorems	From: 16/07/2021 To: 31/07/2021	Lecture interspersed with discussions Online Teaching
46	Moments of Inertia of Composite Figures-problems		
47	Moments of Inertia of Composite Figures-problems		
48	MI- problems		
49	MI- problems		
50	Mass moment of inertia of basic bodies – rod, rectangular plate		
51	Mass moment of inertia of basic bodies – circular plate, solid cone		
52	Mass moment of inertia of basic bodies – solid sphere		
UNIT-V KINEMATICS, KINETICS **CO5:Become familiar with motion in straight line and in curvilinear paths, its velocity and**			

acceleration computation and methods of representing plane motion, work, energy and particle motion **TB:"ENGINEERING MECHANICS", S.S BHAVIKATTI, 1st Edition, New age publications, 2012.**			
53	**UNIT – 5** Kinematics, Introductions	From: 02/08/2021 To: 14/08/2021	Lecture interspersed with discussions Online Teaching
54	Rectilinear and curvilinear motions		
55	Velocity and acceleration		
56	Motion of rigid body		
57	Analysis in plane motion		
58	problems		
59	problems		
60	problems		
61	problems		
62	problems		
63	Kinetics		
64	D'Alembert's principle		
65	Kinetics - Analysis of body in translation		
66	Analysis of body in rotation		
67	Work, energy and power		
68	Principle of conservation of energy		
69	problems		
70	problems		
71	Principle of work energy		
72	Principle of Impulse-momentum		
73	problems		
74	problems		

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TENTATIVE LESSON PLAN: MECHANICAL– R20121

Course Title: BASIC ELECTRICAL AND ELECTRONICS ENGINEERING (BEEE)		
Section : Sec A	**Date : 10-05-2021**	**Page No :** 01 of 02
Revision No : 00	**Prepared By :**Mr.S.NAGESWARA RAO	**Approved By : HOD**

Tools : MS Teams, PPTs

No. of Periods (Planned)	TOPIC	Date (Planned)	Mode of Delivery
UNIT –I	**ELECTRICAL CIRCUITS**		
CO1:: learn the basic principles of electrical law's and analysis of networks.			
TB :: Circuits and networks by A. Sudhakar , Shyammohan S Palli			
1	Basic Definitions	**From: 10-05-2021 To: 22-05-2021**	Online Classes with MS Teams
2	Types of network elements		
3	Ohms law		
4	Kirchhoff's law		
5	Inductive networks		
6	Capacitive networks		
7	Series, parallel circuits		
8	Star-delta and delta-star transformations		
9	Numerical Problems		
10	Tutorial		
UNIT –II	**DC MACHINES**		
CO2:: Understand the principle of operation and construction details of dc machines.			
TB :: Electrical Technology by M S Naidu, S Kamakshaiah			
TB:: Electrical Technology by U.A.Bakshi			
11	Introduction	**From: 24-05-2021 To: 05-06-2021**	Online Classes with MS Teams
12	Principle of operation of DC generator		
13	EMF equation		
14	Types of DC machine		
15	Torque equation		
16	Characteristics of DC motors		
17	Applications		
18	Three point starter		
19	Speed control methods of DC motor		
20	Swinburne's Test		
21	Brake Test		
22	Numerical Problem		
23	Tutorial		
UNIT - III	**AC MACHINES: TRANSFORMER**		
CO3:: Understand the principle of operation and construction details of transformers.			
TB :: Electrical Technology by M S Naidu, S Kamakshaiah			
TB:: Electrical Technology by U.A.Bakshi			
24	Principle of operation and construction of single phase transformers	**From: 07-06-2021 To: 19-06-2021**	Online Classes with MS Teams
25	EMF equation		
26	Losses		
27	OC & SC tests		
28	Problems		
29	Problems		
30	Efficiency and regulation		

31	Efficiency and regulation		
32	Numerical Problem		
33	Tutorial		
UNIT – III:AC MACHINES – AC ROTATING MACHINES **CO4:: Understand the principle of operation and construction details of alternator and 3-phase induction motor** **TB :: Electrical Technology by U.A.Bakshi**			
34	Principle of operation and construction of alternators	**From: 28-06-2021 To: 10-07-2021**	Online Classes with MS Teams
35	Types of alternators		
36	Regulation of alternator by synchronous method		
37	Principle of operation of synchronous motor		
38	Principle of operation of 3-Phase induction motor		
39	Slip-torque characteristics		
40	Efficiency		
41	Applications		
42	Numerical Problem		
43	Tutorial		
UNIT – IV RECTIFIERS & LINEAR ICs **CO5:: Study the operation of PN junction diode, half wave, full wave rectifiers and OP-AMPs.** **TB :: Electronic Devices and circuits by S Salivahanan** **TB :: linear integrated circuits by D.Roy choudhury**			
44	PN junction diodes	**From: 12-07-2021 To: 24-07-2021**	Online Classes with MS Teams
45	Half wave, full wave rectifiers		
46	Characteristics of Op-Amps		
47	Applications of Op-Amp		
48	Tutorial		
UNIT – VI TRANSISTORS **CO6:: learn the operation of PNP and NPN transistors and various amplifiers.** **TB :: Electronic Devices and circuits by S Salivahanan**			
49	PNP and NPN transistor	**From: 26-07-2021 To: 07-08-2021**	Online Classes with MS Teams
50	Transistor as an amplifier		
51	Transistor amplifier		
52	Frequency response of CE amplifier		
53	Concepts of feedback amplifier		
54	Tutorial		

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LESSON PLAN: THERMODYNAMICS – R2012254

Course Title: THERMODYNAMICS		Course code:	
Section: I		Date : 10/5/2021	
Revision No : 00	Prepared By: Mr. M HARI KRISHNA	Approved By : HOD	
Tools: black board, Microsoft Teams, google Meet			

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I Introduction: Basic Concepts			
CO1 : After undergoing the course the student will learn the basic concepts of thermodynamics.			
TB:			
1. Engineering Thermodynamics, PK Nag 6th Edn, McGraw Hill.			
2. Fundamentals of Thermodynamics – Sonntag, Borgnakke, Van Wylen, 6th Edn, Wiley.			
1	System, boundary, Surrounding, Universe, control volume	10/05/2021	Lecture interspersed with discussions
2	Types of Systems, Macroscopic and Microscopic viewpoints.	11/05/2021	
3	Concept of Continuum, Thermodynamic Equilibrium.	12/05/2021	
4	State, Property, Process - Reversible, Quasi static & Irreversible	15/05/2021	
5	Processes, cycle, Causes of Irreversibility	17/05/2021	
6	Energy in State and in Transition - Types	18/05/2021	
7	Work and Heat, Point and Path function.	19/05/2021	
8	Zeroth Law of Thermodynamics – Concept of Temperature	21/05/2021	
9	Principles of Thermometry –Reference Points	22/05/2021	
10	Const. Volume gas Thermometer – Scales of Temperature	24/05/2021	
11	Problems on Zeroth Law of Thermodynamics	25/05/2021	
12	Problems on Zeroth Law of Thermodynamics	26/05/2021	
UNIT-II Laws of Thermodynamics			
CO2: After undergoing the course the student will learn the Laws of Thermodynamics.			
TB:			
1. Engineering Thermodynamics, PK Nag 6th Edn, McGraw Hill.			
2. Fundamentals of Thermodynamics – Sonntag, Borgnakke, Van Wylen, 6th Edn, Wiley.			

13	Joule's Experiments – First law of Thermodynamics – Corollaries	28/09/2021	Lecture interspersed with discussions
14	First law applied to a Process	29/09/2021	
15	First law applied to non-flow process	31/05/2021	
16	Problems on non-flow work	01/06/2021	
17	Problems on non-flow work	02/06/2021	
18	First law applied to a flow system	04/06/2021	
19	Energy balance for closed systems-Specific heats-	05/06/2021	
20	Internal energy, Enthalpy and Specific heats of Solids, liquids and Ideal gases	07/06/2021	
21	Steady flow energy equation applied to Nozzle	08/06/2021	
22	Steady flow energy equation applied to heat exchangers	09/06/2021	
23	Steady flow energy equation applied to Turbine,	11/06/2021	
24	Problems on Steady flow energy equation	12/06/2021	
25	Problems on Steady flow energy equation	14/06/2021	
26	Problems on Steady flow energy equation	15/06/2021	
27	Problems on Steady flow energy equation	16/06/2021	

UNIT-III Concept of Entropy

CO3: After undergoing the course the student will learn the Concept of Entropy.

TB:

1. Engineering Thermodynamics, PK Nag 6th Edn, McGraw Hill.

Fundamentals of Thermodynamics – Sonntag, Borgnakke, Van Wylen, 6th Edn, Wiley.

28	Limitations of the First Law – Thermal Reservoir, Heat Engine	18/06/2021	Lecture interspersed with discussions
29	Heat pump, Parameters of performance,	19/06/2021	
30	Second Law of Thermodynamics,	21/06/2021	
31	Kelvin-Planck and Clausius Statements	22/06/2021	
32	Equivalence, Corollaries,	23/06/2021	
33	PMM of Second kind, Carnot cycle and its specialties,	25/06/2021	
34	Carnot's theorem, Thermodynamic scale of Temperature.	26/06/2021	
35	Clausius Inequality, Entropy	28/06/2021	
36	Principle of Entropy Increase, Availability and Irreversibility	29/06/2021	

37	Basic definitions – Thermodynamic Potentials,	30/06/2021	
38	Gibbs and Helmholtz Functions, Maxwell Relations	02/07/2021	
39	Elementary Treatment of the Third Law of Thermodynamics	03/07/2021	
40	Problems	05/07/2021	
41	Problems	06/07/2021	
42	Problems	07/07/2021	

UNIT-IV Property evaluation of vapours

CO4: After undergoing the course the student will learn the evaluation of vapours and their depiction in tables and charts

TB:

1. Engineering Thermodynamics, PK Nag 6th Edn, McGraw Hill.

Fundamentals of Thermodynamics – Sonntag, Borgnakke, Van Wylen, 6th Edn, Wiley.

43	Pure Substances, P-V-T- surfaces	09/07/2021	Lecture interspersed with discussions
44	T-S and h-s diagrams, Mollier Charts	10/07/2021	
45	Phase Transformations – Triple point and critical point,	12/07/2021	
46	properties during change of phase, Dryness	13/07/2021	
47	Fraction – Clausius – Clapeyron Equation	14/07/2021	
48	Property tables	16/07/2021	
49	Various Thermodynamic Processes	17/07/2021	
50	energy Transfer – Steam Calorimetry.	19/07/2021	
51	problems	20/07/2021	
52	Problems	23/07/2021	

UNIT-V: Evaluation of properties of perfect gas mixtures.

CO5: After undergoing the course the student will learn the evaluation of properties of perfect gas mixtures.

TB:

1. Engineering Thermodynamics, PK Nag 6th Edn, McGraw Hill.

2. Fundamentals of Thermodynamics – Sonntag, Borgnakke, Van Wylen, 6th Edn, Wiley.

53	Ideal Gas equation of state- Compressibility factor- Van der Waals equation of state	24/07/2021	Lecture interspersed with discussions
54	Beattie-Bridgeman equation of state- Benedict-Webb-Rubin equation of state	26/07/2021	
55	Viral equation of state compressibility charts	27/07/2021	
56	Variable specific heats and Mixtures of perfect	28/07/2021	

	Gases		
57	Dalton's Law of partial pressure, Avogadro's Laws of additive volumes.c	30/07/2021	
58	Equivalent Gas constant and Molecular Internal Energy	31/07/2021	
59	Enthalpy, Specific Heat and Entropy of Mixture of Perfect Gases and Vapour	02/08/2021	
60	Psychrometric Properties – Dry bulb Temperature, Wet Bulb Temperature, Dew point Temperature,	03/08/2021	
61	Thermodynamic Wet Bulb Temperature, Specific Humidity, Relative Humidity,	04/08/2021	
62	Saturated Air, Vapour pressure, Degree of saturation – Adiabatic Saturation ,	06/08/2021	
63	Carrier's Equation – Psychrometric chart	07/08/2021	
64	Psychrometric chart	09/08/2021	
65	Revision	10/08/201	
66	Revision	11/08/2021	
67	Revision	13/08/2021	
68	Revision	14/08/2021	

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TENTATIVE LESSON PLAN: R201201

Course Title: MATHEMATICS - II		
Section : ECE-A	Date : 10-05-2021	Page No : 01 of 02
Revision No : 00	Prepared By : S.KALPANA	Approved By : HOD

Tools: Black board, PPT'S, MS Teams

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-1: SOLVING SYSTEM OF LINEAR EQUATIONS, EIGEN VALUES AND EIGEN VECTORS **CO1: solve system of linear algebraic equations using Gauss elimination, Gauss Jordan, Gauss Seidel (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
1	Introduction to matrices	From: 10-05-2021 To: 29-05-2021	Lecture interspersed with discussions
2	Rank of matrix- definition, properties		
3	Problems on rank by Echelon form		
4	Rank by normal form		
5	PAQ form problems		
6	Homogeneous system AX=0		
7	Non Homogeneous system AX=B		
8	Problems on rank method		
9	Gauss Elimination method		
10	Eigen values – definition		
11	Properties of Eigen values		
12	Properties of Eigen values		
13	Problems on finding eigen values, vectors		
14	Problems on finding eigen values, vectors		
UNIT – II:, CALEY-HAMILTON THEOREM, QUADRATIC FORMS **CO2: Develop the use of matrix algebra techniques that is needed by engineers for practical applications (L6)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
15	Caley Hamilton theorem, verification, problems		

16	Finding inverse and power of a matrix by caley Hamilton theorem	From: 31-05-2021 To: 12-06-2021	Lecture interspersed with discussions
17	Diagonalization – problems		
18	Quadratic forms – definition, examples		
19	Matrix form of a quadratic form		
20	Canonical form of a quadratic form		
21	Methods of reducing a QF in to canonical form		
22	Orthogonal reduction method		
23	Congruent operations method		
24	Lagrange's method		
25	Problems on finding nature of a QF		

UNIT-III : UNIT – III: ITERATIVE METHODS:

CO3: Avaluate approximating the roots of polynomial and transcendental equations by different algorithms (L5)

TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications

26	Introduction	From: 14-06-2021 To: 19-06-2021 & From: 28-06-2021 To: 07-07-2021	Lecture interspersed with discussions
27	Method – 1: Bisection method		
28	Problems		
30	Method – 2: Regula falsi method		
31	Problems		
33	Method – 3: Iteration method		
34	Problems		
35	Method – 4: Newton Raphson method		
36	Problems		
37	Newton Raphson method simultaneous equations		
38	Gauss Jacobi Method		
39	Gauss Seidal Method		
40	problems		

UNIT – IV: INTERPOLATION

CO4: Apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals (L3)

TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications

41	Introduction: Forward and Backward Differences		

42	Newton's Forward interpolation formula	From: 08-07-2021 To: 24-07-2021	Lecture interspersed with discussions
43	Problems		
44	Newton's Backward interpolation formula		
45	Problems		
46	Gauss Forward interpolation formula – Problems		
47	Problems		
48	Gauss Backward interpolation formula – Problems		
49	Problems		
50	Lagranges interpolation formula – Problems		
51	Problems		
52	Operators		
UNIT – V: NUMERICAL INTEGRATION AND SOLUTION OF ORDINARY DIFFERENTIAL EQUATION **CO5: Apply different algorithms for approximating the solutions of ordinary differential equations to its analytical computations (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
53	Trapezoidal rule	From: 26-07-2021. To: 07-08-2021	Lecture interspersed with discussions
54	Simpson's 1/3 rule		
55	Problems		
56	Simpson's 3/8 rule		
57	Taylor's series method		
58	Problems		
59	Picard's method of successive approximation		
60	Euler's method		
61	Euler's modified method		
62	Problems		
63	Runge kutta method		
64	Problems		

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TENTATIVE LESSON PLAN: R201201

Course Title: MATHEMATICS - II		
Section : ECE-B	Date : 10-05-2021	Page No : 01 of 02
Revision No : 00	Prepared By : B.V.RAMAKRISHNA RAO	Approved By : HOD

Tools: Black board, PPT'S, MS Teams

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-1: SOLVING SYSTEM OF LINEAR EQUATIONS, EIGEN VALUES AND EIGEN VECTORS **CO1: solve system of linear algebraic equations using Gauss elimination, Gauss Jordan, Gauss Seidel (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
1	Introduction to matrices	From: 10-05-2021 To: 29-05-2021	Lecture interspersed with discussions
2	Rank of matrix- definition, properties		
3	Problems on rank by Echelon form		
4	Rank by normal form		
5	PAQ form problems		
6	Homogeneous system AX=0		
7	Non Homogeneous system AX=B		
8	Problems on rank method		
9	Gauss Elimination method		
10	Eigen values – definition		
11	Properties of Eigen values		
12	Properties of Eigen values		
13	Problems on finding eigen values, vectors		
14	Problems on finding eigen values, vectors		
UNIT – II:, CALEY-HAMILTON THEOREM, QUADRATIC FORMS **CO2: Develop the use of matrix algebra techniques that is needed by engineers for practical applications (L6)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
15	Caley Hamilton theorem, verification, problems		

16	Finding inverse and power of a matrix by caley Hamilton theorem	From: 31-05-2021 To: 12-06-2021	Lecture interspersed with discussions
17	Diagonalization – problems		
18	Quadratic forms – definition, examples		
19	Matrix form of a quadratic form		
20	Canonical form of a quadratic form		
21	Methods of reducing a QF in to canonical form		
22	Orthogonal reduction method		
23	Congruent operations method		
24	Lagrange's method		
25	Problems on finding nature of a QF		

UNIT-III : UNIT – III: ITERATIVE METHODS:

CO3: Avaluate approximating the roots of polynomial and transcendental equations by different algorithms (L5)

TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications

26	Introduction	From: 14-06-2021 To: 19-06-2021 & From: 28-06-2021 To: 07-07-2021	Lecture interspersed with discussions
27	Method – 1: Bisection method		
28	Problems		
30	Method – 2: Regula falsi method		
31	Problems		
33	Method – 3: Iteration method		
34	Problems		
35	Method – 4: Newton Raphson method		
36	Problems		
37	Newton Raphson method simultaneous equations		
38	Gauss Jacobi Method		
39	Gauss Seidal Method		
40	problems		

UNIT – IV: INTERPOLATION

CO4: Apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals (L3)

TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications

41	Introduction: Forward and Backward Differences		

42	Newton's Forward interpolation formula	From: 08-07-2021 To: 24-07-2021	Lecture interspersed with discussions
43	Problems		
44	Newton's Backward interpolation formula		
45	Problems		
46	Gauss Forward interpolation formula – Problems		
47	Problems		
48	Gauss Backward interpolation formula – Problems		
49	Problems		
50	Lagranges interpolation formula – Problems		
51	Problems		
52	Operators		
UNIT – V: NUMERICAL INTEGRATION AND SOLUTION OF ORDINARY DIFFERENTIAL EQUATION **CO5: Apply different algorithms for approximating the solutions of ordinary differential equations to its analytical computations (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
53	Trapezoidal rule	From: 26-07-2021. To: 07-08-2021	Lecture interspersed with discussions
54	Simpson's 1/3 rule		
55	Problems		
56	Simpson's 3/8 rule		
57	Taylor's series method		
58	Problems		
59	Picard's method of successive approximation		
60	Euler's method		
61	Euler's modified method		
62	Problems		
63	Runge kutta method		
64	Problems		

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TENTATIVE LESSON PLAN: R201207

Course Title: Applied Physics		
Section :ECE-A	Date : 10.05.2021	Page No : 00
Revision No :00	Prepared By : B.NAGA JYOTHIRMAI	Approved By : HOD
Tools:		

No. of Periods	TOPIC	DATE	Mode of Delivery
UNIT-I	**Wave Optics** **CO1:** Analyze the differences between interference and diffraction with applications. And illustrate the resolving power of various optical instruments.	From: 10/05/2021 To: 03/06/2021	Lecture interspersed with discussions
1	**INTERFERENCE:** Introduction		
2	Principle of Superposition		
3	Coherent Sources-Types		
4	Interference- Types		
5	Interference in Thin Films		
6	Colours in Thin Film		
7	Newton's Rings		
8	Applications of Interference		
9	Problems		
10	**Diffraction:** Introduction		
11	Fresnel and Fraunhoffer Diffraction		Lecture interspersed with discussions
12	Fraunhoffer diffraction at single slit		
13	Fraunhoffer diffraction at single slit		
14	Fraunhoffer diffraction at Double Slit		
15	Fraunhoffer diffraction at N-Slits		
16	Grating Equation		
17	Dispersive Power of Grating		
18	Resolving Power of Grating		
19	Problems		
20	**Polarization :** Introduction		
21	Types of Polarization		
22	Polarization by Reflection, Refraction		
23	Polarization by Duoble Refraction		Lecture interspersed with discussions
24	Nicol Prism		
25	Quarter Wave & Half Wave Plates and Problems		
UNIT- II	**Lasers and Fiber Optics** **CO2:** Explain various types of emission of radiation. Identify the role of laser in engineering applications. Identify the applications of optical fibers in medical, communication and other fields. Apply the fiber optic concepts in various fields.		
26	**Lasers :** Introduction		
27	Characteristics of Laser		
28	Spontaneous and Stimulated emission		
29	Einstein's Coefficients		
30	Population Inversion, Lasing action		
31	Pumping Mechanism-Pumping method		

32	Ruby Laser		
33	Helium Neon Laser		
34	Applications of Lasers		
35	**Fiber Optics:** Introduction		
36	Principle of Optical Fiber		
37	Acceptance angle and Numerical Aperture		Lecture interspersed with discussions
38	Classifications optical fibers based on refractive index profile and modes		
39	Propagation of electromagnetic wave through optical fibers, applications		
40	Problems		
UNIT -III	**Quantum Mechanics, Free Electron Theory and Band theory** **CO3:** Describe the dual nature of matter. Identify the role of Schrodinger's time independent wave equation in studying particle in one-dimensional infinite potential well. Identify the role of classical and quantum free electron theory in the study of electrical conductivity.	From: 17-06-2021 To 06-07-2021	
41	**Quantum Mechanics:** Introduction		
42	Dual Nature of Matter		
43	Heisenberg's Uncertainty Principle, Significance and properties of wave function		
44	Schrodinger Time Independent Equation		
45	Schrodinger Time Dependent Equation		
46	Particle in a Box		
47	Problems		Lecture interspersed with discussions
48	**Free Electron Theory:** Introduction		
49	Classical free electron theory- merits and demerits		
50	Quantum free electron theory- merits and demerits		
51	Equation for electrical conductivity based on quantum free electron theory		
52	Fermi-Dirac distribution, Fermi energy.		
53	Density of states (3D)		
54	Problems		
55	**Band theory of Solids :**Introduction		
56	Bloch's Theorem, Kronig - Penney model		
57	E vs K diagram - v vs K diagram		
58	Effective Mass of Electron, Concept of Hole		
59	Energy Bands in Crystalline Solids Classification		
UNIT-IV	**Dielectric and Magnetic Materials** **CO4:** Explain the concept of dielectric constant and polarization in dielectric materials. Explain the applications of dielectric and magnetic materials . Apply the concept of magnetism to magnetic devices.	From 08-07-2021 To 24-07-2021	
60	**Dielectric Materials:** Introduction, Dielectric polarization		
61	Types of polarizations- Electronic polarisation		Lecture interspersed with discussions
62	Ionic polarisation, Orientation polarizations		
63	Lorentz internal field		
64	Clausius-Mossotti equation, Piezoelectricity.		
65	**Magnetic Materials:** Introduction		
66	Magnetic dipole moment , Magnetization, Magnetic susceptibility and permeability		

67	Origin of permanent magnetic moment		
68	Classification of magnetic materials: Dia, para, Ferro, antiferro and Ferri magnetic materials		
69	Domain concept for Ferromagnetism, Domainwalls		
70	Hysteresis soft and hard magnetic materials		
71	Eddy currents, Engineering applications and Problems		
UNIT – V	**Semiconductors and Superconductors** **CO5:** Explain the properties of charge carriers in semiconductors . Identify the type of semiconductor using Hall effect . Identify applications of semiconductors in electronic devices. Explain Meissner's effect, BCS theory & Josephson effect in superconductors.	From 26-07-2021 To 07-08-2021	Lecture interspersed with discussions
72	**Semiconductors:** Introduction, Intrinsic semiconductors		
73	Density of charge carriers ,Electrical conductivity, Fermi level		
74	Extrinsic semiconductors , density of charge carriers, Dependence of Fermi energy on carrier concentration and temperature		
75	Drift and diffusion currents – Einstein's equation		
76	Hall effect, Hall coefficient, Applications of Hall effect		
77	**Superconductors**: Introduction – Properties of superconductors		
78	Meissner effect , Type I and Type II superconductors		
70	BCS theory , Josephson effects (AC and DC)		
80	SQUID's – High Tc superconductors , Applications of superconductors		

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TENTATIVE LESSON PLAN: R201207

Course Title: Applied Physics			
Section :ECE-B	Date : 10.05.2021	Page No : 00	
Revision No :00	Prepared By : B.NAGA JYOTHIRMAI	Approved By : HOD	
Tools:			

No. of Periods	TOPIC	DATE	Mode of Delivery
UNIT-I	**Wave Optics** **CO1:** Analyze the differences between interference and diffraction with applications. And illustrate the resolving power of various optical instruments.	From: 10/05/2021 To: 03/06/2021	Lecture interspersed with discussions
1	**INTERFERENCE:** Introduction		
2	Principle of Superposition		
3	Coherent Sources-Types		
4	Interference- Types		
5	Interference in Thin Films		
6	Colours in Thin Film		
7	Newton's Rings		
8	Applications of Interference		
9	Problems		
10	**Diffraction:** Introduction		
11	Fresnel and Fraunhoffer Diffraction		Lecture interspersed with discussions
12	Fraunhoffer diffraction at single slit		
13	Fraunhoffer diffraction at single slit		
14	Fraunhoffer diffraction at Double Slit		
15	Fraunhoffer diffraction at N-Slits		
16	Grating Equation		
17	Dispersive Power of Grating		
18	Resolving Power of Grating		
19	Problems		
20	**Polarization :** Introduction		
21	Types of Polarization		
22	Polarization by Reflection, Refraction		
23	Polarization by Duoble Refraction		Lecture interspersed with discussions
24	Nicol Prism		
25	Quarter Wave & Half Wave Plates and Problems		
UNIT- II	**Lasers and Fiber Optics** **CO2:** Explain various types of emission of radiation. Identify the role of laser in engineering applications. Identify the applications of optical fibers in medical, communication and other fields. Apply the fiber optic concepts in various fields.		
26	**Lasers :** Introduction		
27	Characteristics of Laser		
28	Spontaneous and Stimulated emission		
29	Einstein's Coefficients		
30	Population Inversion, Lasing action		
31	Pumping Mechanism-Pumping method		

30	Population Inversion, Lasing action	To: 15-06-2021	Lecture interspersed with discussions
31	Pumping Mechanism-Pumping method		
32	Ruby Laser		
33	Helium Neon Laser		
34	Applications of Lasers		
35	**Fiber Optics:** Introduction		
36	Principle of Optical Fiber		
37	Acceptance angle and Numerical Aperture		
38	Classifications optical fibers based on refractive index profile and modes		
39	Propagation of electromagnetic wave through optical fibers, applications		
40	Problems		
UNIT -III	**Quantum Mechanics, Free Electron Theory and Band theory** **CO3:** Describe the dual nature of matter. Identify the role of Schrodinger's time independent wave equation in studying particle in one-dimensional infinite potential well. Identify the role of classical and quantum free electron theory in the study of electrical conductivity.	From: 17-06-2021 To 06-07-2021	Lecture interspersed with discussions
41	**Quantum Mechanics:** Introduction		
42	Dual Nature of Matter		
43	Heisenberg's Uncertainty Principle, Significance and properties of wave function		
44	Schrodinger Time Independent Equation		
45	Schrodinger Time Dependent Equation		
46	Particle in a Box		
47	Problems		
48	**Free Electron Theory:** Introduction		
49	Classical free electron theory- merits and demerits		
50	Quantum free electron theory- merits and demerits		
51	Equation for electrical conductivity based on quantum free electron theory		
52	Fermi-Dirac distribution, Fermi energy.		
53	Density of states (3D)		
54	Problems		
55	**Band theory of Solids :**Introduction		
56	Bloch's Theorem, Kronig - Penney model		
57	E vs K diagram - v vs K diagram		
58	Effective Mass of Electron, Concept of Hole		
59	Energy Bands in Crystalline Solids Classification		
UNIT-IV	**Dielectric and Magnetic Materials** **CO4:** Explain the concept of dielectric constant and polarization in dielectric materials. Explain the applications of dielectric and magnetic materials . Apply the concept of magnetism to magnetic devices.	From 08-07-2021	Lecture interspersed
60	**Dielectric Materials:** Introduction, Dielectric polarization		
61	Types of polarizations- Electronic polarisation		
62	Ionic polarisation, Orientation polarizations		
63	Lorentz internal field		
64	Clausius-Mossotti equation, Piezoelectricity.		

65	**Magnetic Materials:** Introduction	To 24-07-2021	with discussions
66	Magnetic dipole moment , Magnetization, Magnetic susceptibility and permeability		
67	Origin of permanent magnetic moment		
68	Classification of magnetic materials: Dia, para, Ferro, antiferro and Ferri magnetic materials		
69	Domain concept for Ferromagnetism, Domainwalls		
70	Hysteresis soft and hard magnetic materials		
71	Eddy currents, Engineering applications and Problems		
UNIT – V	**Semiconductors and Superconductors** **CO5:** Explain the properties of charge carriers in semiconductors . Identify the type of semiconductor using Hall effect . Identify applications of semiconductors in electronic devices. Explain Meissner's effect, BCS theory & Josephson effect in superconductors.	From 26-07-2021	
72	**Semiconductors:** Introduction, Intrinsic semiconductors	To 07-08-2021	Lecture interspersed with discussions
73	Density of charge carriers ,Electrical conductivity, Fermi level		
74	Extrinsic semiconductors , density of charge carriers, Dependence of Fermi energy on carrier concentration and temperature		
75	Drift and diffusion currents – Einstein's equation		
76	Hall effect, Hall coefficient, Applications of Hall effect		
77	**Superconductors**: Introduction – Properties of superconductors		
78	Meissner effect , Type I and Type II superconductors		
70	BCS theory , Josephson effects (AC and DC)		
80	SQUID's – High Tc superconductors , Applications of superconductors		

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TENTATIVE LESSON PLAN(R201208)

Course Title:Data Structures		
Section : A	Date:10-5-2021	Page No: 1 of 2
Revision No:	Prepared by : CH SIVA RAJESH	Approved by :HOD

Tools : PPTs,MS Teams

No.of periods	Topics	Date	Mode of Delivery
UNIT-I : Linear Data Structures: Arrays, Stacks and Queues **CO1 : Understanding data structures concepts with arrays, stacks, queues** **TB:: Fundamentals of Data Structures in C, 2nd Edition, E.Horowitz, S.Sahni and Susan Anderson Freed, Universities Press Pvt. Ltd**			
1	Data Structures -Operations	10-05-2021	Lecture interspersed with discussions
2	Abstract Data Types-Complexity of Algorithms	11-05-2021	
3	Representation of Arrays-Linear Arrays	12-05-2021	
4	-Insertion–Deletion and Traversal of a Linear Array	15-05-2021	
5	Array as an Abstract Data Type-Multi-Dimensional arrays	17-05-2021	
6	-Strings-String Operations	18-05-2021	
7	Storing Strings-String as an Abstract Data Type	19-05-2021	
8	Stack -Array Representation of Stack-Stack Abstract Data Type	21-05-2021	
9	PrefixInfix and Postfix Arithmetic Expressions	22-05-2021	
10	Conversion-Evaluation of Postfix Expressions	24-05-2021	
11	Recursion-Towers of Hanoi	25-05-2021	
12	Queues-Definition-Array Representation of Queue	28-05-2021	
13	The Queue Abstract Data Type-Circular Queues	29-05-2021	
14	Dequeues	31-05-2021	
15	Priority Queues	01-06-2021	
UNIT-II Linked Lists **: Understanding linked lists for stacks, queues and for other applications** **TB:: Fundamentals of Data Structures in C, 2nd Edition, E.Horowitz, S.Sahni and Susan Anderson Freed, Universities Press Pvt. Ltd**			**CO2**
16	Pointers-Pointer Arrays	02-06-2021	Lecture interspersed with discussions
17	Linked Lists-Node Representation	04-06-2021	
18	n-Single Linked List-Traversing and Searching a Single Linked	05-06-2021	
19	Insertion into and Deletion from a Single Linked List	07-06-2021	
20	Header Linked Lists	08-06-2021	
21	Circularly Linked Lists	09-06-2021	
22	Doubly Linked Lists	11-06-2021	
23	Linked Stacks and Queues	12-06-2021	
24	Polynomials-Polynomial Representation	14-06-2021	
25	Sparse Matrices	15-06-2021	
UNIT-III Trees **Understanding traversal methods in the Trees.** **TB:: Fundamentals of Data Structures in C, 2nd Edition, E.Horowitz, S.Sahni and Susan Anderson Freed, Universities Press Pvt. Ltd**			**CO3 :**
26	Terminology	19-06-2021	
27	Representation of Trees	28-06-2021	

29	Layout Managers	28-06-2021	
30	Buttons, Check Boxes, Radio Buttons	29-06-2021	
31	Labels, Text Fields, Text Areas	30-06-2021	
32	Combo Boxes, Lists	02-07-2021	
33	Scroll Bars, Sliders	03-07-2021	
34	Windows, Menus, Dialog Box	05-07-2021	
35	Applet and its life cycle	06-07-2021	
36	Creating a swing applet	07-06-2021	
UNIT-IV I/O programming **CO1 : Understanding how to write and read data to and from the files.** **TB:: Programming in JAVA, Sachin Malhotra, Saurabh Choudary, Oxford**			
37	Text and Binary I/O	09,10-07-21	Lecture interspersed with discussions
38	Binary I/O classes	12,13-07-21	
39	Object I/O	14,16-07-21	
40	Random Access Files	17,19-07-21	
41	Event driven model	20,23-07-21	
42	handling events	24,26-07-21	
UNIT-V Multithreading in java **CO1 : Understanding how to create threads and how to start the threads** **TB:: Programming in JAVA, Sachin Malhotra, Saurabh Choudary, Oxford**			
43	Thread life cycle and methods	27,28-07-21	Lecture interspersed with discussions
44	Runnable interface	30,31-07-21	
45	Thread synchronization	02-08-1921	
46	Exception handling with try-catch-finally	3,4-08-21	
47	Collections in java	06-08-1921	
48	JavaBeans and Network Programming	07-08-1921	

19/5/21

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TENTATIVE LESSON PLAN: R20 12 13

Course Title: NETWORK ANALYSIS			
Section: A	Date:10-5-2021	Page No: 1 of 3	
Revision No:	Prepared by : P.RAVEENDRA	Approved by :HOD	

Tools : PPTs (online)

No.of periods	Topics	Date	Mode of Delivery
	UNIT-I:Introduction to Electrical Circuits **CO1 : Gain the knowledge on basic network elements.** **TB:: Network Analysis – ME Van Valkenburg, Prentice Hall of India, 3rd Edition, 2000** **TB:: Network Analysis by K.Satya Prasad and S Sivanagaraju, Cengage Learning. TB::Electric Circuit Analysis by Hayt and Kimmarle, TMH**		
1	Network elements classification	FROM: 10-5-2021 TO 25-5-2021	Lecture interspersed with discussions through MS Teams
2	Electric charge, current, energy and potential		
3	Electric charge, current, energy and potential		
4	Resistance parameter - series and parallel combination		
5	Inductance parameter -series and parallel combination		
6	Capacitance parameter-series and parallel combination		
7	Energy sources: Ideal, Non-ideal		
8	Independent and dependent sources		
9	Source transformation		
10	Kirchoff's laws		
11	Mesh analysis and Nodal analysis problem solving		
12	Mesh analysis and Nodal analysis problem solving		
	A.C Fundamentals and Network Topology		
13	Definitions of terms associated with periodic functions		
14	Time period, Angular velocity and frequency		
15	RMS value,Average value,Form factor and peak factor		
16	RMS value,Average value,Form factor and peak factor		
17	problem solving		
18	problem solving		
19	Phase angle, Phasor representation		
20	Addition and subtraction of phasors		
21	mathematical representation of sinusoidal quantities		
22	explanation with relevant theory, problem solving		
23	explanation with relevant theory, problem solving		
24	Principal of Duality with examples		
25	Definitions of branch, node, tree		
26	planar, non-planar graph, incidence matrix		
27	basic tie set schedule, basic cut set schedule		

UNIT-II:Transients: **CO2 : Analyze the filter design concepts in real world applications.** **TB::Network Analysis – ME Van Valkenburg, Prentice Hall of India, 3rd Edition, 2000** **TB::Network Analysis by K.Satya Prasad and S Sivanagaraju, Cengage Learning, TB::Electric Circuit Analysis by Hayt and Kimmarle, TMH**			
28	First order differential equations	FROM: 26-5-2021 TO 10-6-2021	Lecture interspersed with discussions through MS Teams
29	Definition of time constants		
30	R-L circuit, R-C circuit with DC excitation		
31	R-L circuit, R-C circuit with DC excitation		
32	Evaluating initial conditions procedure		
33	second order differential equations		
34	homogeneous, non- homogenous		
35	problem solving using RLC elements with DC excitation		
36	problem solving using RLC elements with AC excitation		
37	Response as related to s-plane rotation of roots		
UNIT-III:Steady State Response & Coupled Circuits **CO3 : Analyze the performance of periodic waveforms.** **TB:: Network Analysis – ME Van Valkenburg, Prentice Hall of India, 3rd Edition, 2000** **TB::Network Analysis by K.Satya Prasad and S Sivanagaraju, Cengage Learning** **TB::Electric Circuit Analysis by Hayt and Kimmarle, TMH**			
38	Impedance concept, phase angle	FROM: 11-6-2021 TO 20-7-2021	Lecture interspersed with discussions through MS Teams
39	series R-L, R-C, R-LC circuits problem solving.		
40	Complex impedance and phasor notation for R-L, R-C, R-L-C		
41	problem solving using mesh and nodal analysis		
42	Star-Delta conversion		
43	Star-Delta conversion		
44	problem solving.		
45	problem solving.		
46	Self inductance, Mutual inductance		
47	Coefficient of coupling, analysis of coupled circuits		
48	Natural current, Dot rule of coupled circuits		
49	Conductively coupled equivalent circuits		
50	problem solving		
UNIT-IV: Resonance & Network Theorems: **CO4 : To Understand the Network Theorems & Resonance** **TB :: Network Analysis – ME Van Valkenburg, Prentice Hall of India, 3rd Edition, 2000** **TB::Network Analysis by K.Satya Prasad and S Sivanagaraju, Cengage Learning, TB::Electric Circuit Analysis by Hayt and Kimmarle, TMH**			
51	Resonance: Introduction	FROM: 21-7-2021 TO 25-7-2021	Lecture interspersed with discussions through MS Teams
52	Definition of Q, Series resonance		
53	Bandwidth of series resonance, Parallel resonance		
54	Condition for maximum impedance		
55	current in anti resonance,anti resonance at all frequencies		
56	Bandwidth of parallel resonance,		
57	Milliman's, Reciprocity,Tellegens		
58	Compensation, Substitution		

59	Superposition, Max Power Transfer		
60	Superposition, Max Power Transfer		
UNIT-V:Two-port networks **CO5 : gain the knowledge in characteristics of two port network parameters (Z, Y, ABCD, h & g).** **TB::Network Analysis – ME Van Valkenburg, Prentice Hall of India, 3rd Edition, 2000** **TB:: Network Analysis by K.Satya Prasad and S Sivanagaraju, Cengage Learning, TB::Electric Circuit Analysis by Hayt and Kimmarle, TMH**			
61	Relationship of two port networks	FROM: 26-7-2021 TO 07-8-2021	Lecture interspersed with discussions through MS Teams
62	Z-parameters, Y- parameters		
63	Transmission line parameters, h-parameters		
64	Inverse h- parameters		
65	Inverse Transmission line parameters		
66	Relationship between parameter sets		
67	Parallel connection of two port networks		
68	Cascading of two port networks		
69	series connection of two port networks		
70	problem solving including dependent sources also		
71	problem solving including dependent sources also		

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TENTATIVE LESSON PLAN: R201213

Course Title: NETWORK ANALYSIS			
Section:B	**Date:10-5-2021**	**Page No: 1 of 3**	
Revision No:	**Prepared by : P.RAVEENDRA**	**Approved by :HOD**	

Tools : PPTs (online)

No.of periods	Topics	Date	Mode of Delivery
UNIT-I:Introduction to Electrical Circuits **CO1 : Gain the knowledge on basic network elements.** **TB:: Network Analysis – ME Van Valkenburg, Prentice Hall of India, 3rd Edition, 2000** **TB:: Network Analysis by K.Satya Prasad and S Sivanagaraju, Cengage Learning. TB::Electric Circuit Analysis by Hayt and Kimmarle, TMH**			
1	Network elements classification	FROM: 10-5-2021 TO 25-5-2021	Lecture interspersed with discussions through MS Teams
2	Electric charge, current, energy and potential		
3	Electric charge, current, energy and potential		
4	Resistance parameter - series and parallel combination		
5	Inductance parameter -series and parallel combination		
6	Capacitance parameter-series and parallel combination		
7	Energy sources: Ideal, Non-ideal		
8	Independent and dependent sources		
9	Source transformation		
10	Kirchoff's laws		
11	Mesh analysis and Nodal analysis problem solving		
12	Mesh analysis and Nodal analysis problem solving		
	A.C Fundamentals and Network Topology		
13	Definitions of terms associated with periodic functions		
14	Time period, Angular velocity and frequency		
15	RMS value,Average value,Form factor and peak factor		
16	RMS value,Average value,Form factor and peak factor		
17	problem solving		
18	problem solving		
19	Phase angle, Phasor representation		
20	Addition and subtraction of phasors		
21	mathematical representation of sinusoidal quantities		
22	explanation with relevant theory, problem solving		
23	explanation with relevant theory, problem solving		
24	Principal of Duality with examples		
25	Definitions of branch, node, tree		
26	planar, non-planar graph, incidence matrix		
27	basic tie set schedule, basic cut set schedule		

UNIT-II:Transients: **CO2 : Analyze the filter design concepts in real world applications.** **TB::Network Analysis – ME Van Valkenburg, Prentice Hall of India, 3rd Edition, 2000** **TB::Network Analysis by K.Satya Prasad and S Sivanagaraju, Cengage Learning, TB::Electric Circuit Analysis by Hayt and Kimmarle, TMH**			
28	First order differential equations	FROM: 26-5-2021 TO 10-6-2021	Lecture interspersed with discussions through MS Teams
29	Definition of time constants		
30	R-L circuit, R-C circuit with DC excitation		
31	R-L circuit, R-C circuit with DC excitation		
32	Evaluating initial conditions procedure		
33	second order differential equations		
34	homogeneous, non- homogenous		
35	problem solving using RLC elements with DC excitation		
36	problem solving using RLC elements with AC excitation		
37	Response as related to s-plane rotation of roots		
UNIT-III:Steady State Response & Coupled Circuits **CO3 : Analyze the performance of periodic waveforms.** **TB:: Network Analysis – ME Van Valkenburg, Prentice Hall of India, 3rd Edition, 2000** **TB::Network Analysis by K.Satya Prasad and S Sivanagaraju, Cengage Learning** **TB::Electric Circuit Analysis by Hayt and Kimmarle, TMH**			
38	Impedance concept, phase angle	FROM: 11-6-2021 TO 20-7-2021	Lecture interspersed with discussions through MS Teams
39	series R-L, R-C, R-LC circuits problem solving.		
40	Complex impedance and phasor notation for R-L, R-C, R-L-C		
41	problem solving using mesh and nodal analysis		
42	Star-Delta conversion		
43	Star-Delta conversion		
44	problem solving.		
45	problem solving.		
46	Self inductance, Mutual inductance		
47	Coefficient of coupling, analysis of coupled circuits		
48	Natural current, Dot rule of coupled circuits		
49	Conductively coupled equivalent circuits		
50	problem solving		
UNIT-IV: Resonance & Network Theorems: **CO4 : To Understand the Network Theorems & Resonance** **TB :: Network Analysis – ME Van Valkenburg, Prentice Hall of India, 3rd Edition, 2000** **TB::Network Analysis by K.Satya Prasad and S Sivanagaraju, Cengage Learning, TB::Electric Circuit Analysis by Hayt and Kimmarle, TMH**			
51	Resonance: Introduction	FROM: 21-7-2021 TO 25-7-2021	Lecture interspersed with discussions through MS Teams
52	Definition of Q, Series resonance		
53	Bandwidth of series resonance, Parallel resonance		
54	Condition for maximum impedance		
55	current in anti resonance,anti resonance at all frequencies		
56	Bandwidth of parallel resonance,		
57	Milliman's, Reciprocity,Tellegens		
58	Compensation, Substitution		

59	Superposition, Max Power Transfer		
60	Superposition, Max Power Transfer		
UNIT-V:Two-port networks **CO5 : gain the knowledge in characteristics of two port network parameters (Z, Y, ABCD, h & g).** **TB::Network Analysis – ME Van Valkenburg, Prentice Hall of India, 3rd Edition, 2000** **TB:: Network Analysis by K.Satya Prasad and S Sivanagaraju, Cengage Learning, TB::Electric Circuit Analysis by Hayt and Kimmarle, TMH**			
61	Relationship of two port networks	FROM: 26-7-2021 TO 07-8-2021	Lecture interspersed with discussions through MS Teams
62	Z-parameters, Y- parameters		
63	Transmission line parameters, h-parameters		
64	Inverse h- parameters		
65	Inverse Transmission line parameters		
66	Relationship between parameter sets		
67	Parallel connection of two port networks		
68	Cascading of two port networks		
69	series connection of two port networks		
70	problem solving including dependent sources also		
71	problem solving including dependent sources also		

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TENTATIVE LESSON PLAN: R201214
BASIC ELECTRICAL ENGINEERING

Course Title: BASIC ELECTRICAL ENGINEERING		
Section : A	**Date : 10.05.2021**	**Page No :** 1 to 3
Revision No : 00	**Prepared By : B.Indraja**	**Approved By : HOD**

Tools: MS TEAMS, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I DC Machines **CO1: Students are able to explain the operation of DC generator and analyze the characteristics of DC generator and the principle of operation, characteristics of DC motor. Methods of starting and speed control methods of DC motors.** **TB:: T1: Principles Of Electrical Engineering by V.K. Mehata , Rohit Mehta**			
1	Principle of operation of DC generator , emf equation	**From: 10-05-2021 To: 22-05-2021**	Online Classes with MS Teams
2	types of DC machines		
3	torque equation of DC motor , applications		
4	three point starter		
5	losses and efficiency , swinburne's test		
6	speed control methods		
7	OCC of DC generator , Brake test on DC Shunt motor		
8	Numerical problems		
9	tutorial		
UNIT-II Transformers **CO2: Students are able to learn the constructional details, principle of operation and performance of transformers.** **TB:: T1: Principles Of Electrical Engineering by V.K. Mehata , Rohit Mehta**			
10	Principle of operation of single phase transformer constructional features		
11	EMF equation		

12	Losses and efficiency of transformer	From: 24-05-2021 To: 05-06-2021	Online Classes with MS Teams
13	regulation of transformer		
14,15	OC & SC tests predetermination of efficiency and regulations		
16	Sumpner's test		
17,18	Numerical Problems		
19	tutorial		
UNIT-III Synchronous Generators & Motors **CO3: Students are able to analyze the performance and speed – torque characteristics of a 3-phase induction motor and understand starting methods of 3-phase induction motor.** **TB:: T1: Principles Of Electrical Engineering by V.K. Mehata , Rohit Mehta**			
20,21	Principle of operation and construction of alternators	From: 07-06-2021 To: 19-06-2021	Online Classes with MS Teams
22	types of alternators		
23,24	Regulation of alternator by synchronous impedance method		
25	EMF equation of three phase alternator		
26,27	Numerical Problems		
28,29	tutorial		
30,31	Construction of three phase synchronous motor	From: 28-06-2021 To: 10-07-2021	
32	operating principle		
33	equivalent circuit of synchronous motor		
34,35,36	Numerical Problems		
37,38,39	tutorial		
UNIT-IV Induction Machine **CO4 :Students are able to explain the operation of Synchronous Machines** **TB :: T1: Principles Of Electrical Engineering by V.K. Mehata , Rohit Mehta**			
40	Principle of operation and construction of three-phase induction motors	From:	

41	slip ring and squirrel cage motors	**12-07-2021**	Online Classes with MS Teams
42	slip-torque characteristics	**To:**	
43	efficiency calculation	**24-07-2021**	
44	starting methods		
45	Brake test on 3-Phase Induction Motor		
46,47	Numerical problems		
48	tutorial		
UNIT-V Special Machines **CO5: Students are able to understand the operation of various special machines.** **TB:: T1: Principles Of Electrical Engineering by V.K. Mehata , Rohit Mehta**			
49	Principle of operation and construction	**From:**	Online Classes with MS Teams
50	single phase induction motor	**26-07-2021**	
51	shaded pole motors	**To:**	
52	capacitor motors	**07-08-2021**	
53	AC servomotor		
54,55,56	Numerical problems		
57,58	tutorial		

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TENTATIVE LESSON PLAN: R201214
BASIC ELECTRICAL ENGINEERING

Course Title: BASIC ELECTRICAL ENGINEERING		
Section : B	**Date : 10.05.2021**	**Page No :** 1 to 3
Revision No : 00	**Prepared By : B.Indraja**	**Approved By : HOD**

Tools: MS TEAMS, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I DC Machines **CO1: Students are able to explain the operation of DC generator and analyze the characteristics of DC generator and the principle of operation, characteristics of DC motor. Methods of starting and speed control methods of DC motors.** **TB:: T1: Principles Of Electrical Engineering by V.K. Mehata , Rohit Mehta**			
1	Principle of operation of DC generator , emf equation	**From: 10-05-2021 To: 22-05-2021**	Online Classes with MS Teams
2	types of DC machines		
3	torque equation of DC motor , applications		
4	three point starter		
5	losses and efficiency , swinburne's test		
6	speed control methods		
7	OCC of DC generator , Brake test on DC Shunt motor		
8	Numerical problems		
9	tutorial		
UNIT-II Transformers **CO2: Students are able to learn the constructional details, principle of operation and performance of transformers.** **TB:: T1: Principles Of Electrical Engineering by V.K. Mehata , Rohit Mehta**			
10	Principle of operation of single phase transformer constructional features		
11	EMF equation		

12	Losses and efficiency of transformer	**From: 24-05-2021 To: 05-06-2021**	Online Classes with MS Teams
13	regulation of transformer		
14,15	OC & SC tests predetermination of efficiency and regulations		
16	Sumpner's test		
17,18	Numerical Problems		
19	tutorial		
UNIT-III Synchronous Generators & Motors **CO3: Students are able to analyze the performance and speed – torque characteristics of a 3-phase induction motor and understand starting methods of 3-phase induction motor.** **TB:: T1: Principles Of Electrical Engineering by V.K. Mehata , Rohit Mehta**			
20,21	Principle of operation and construction of alternators	**From: 07-06-2021 To: 19-06-2021**	Online Classes with MS Teams
22	types of alternators		
23,24	Regulation of alternator by synchronous impedance method		
25	EMF equation of three phase alternator		
26,27	Numerical Problems		
28,29	tutorial		
30,31	Construction of three phase synchronous motor	**From: 28-06-2021 To: 10-07-2021**	
32	operating principle		
33	equivalent circuit of synchronous motor		
34,35,36	Numerical Problems		
37,38,39	tutorial		
UNIT-IV Induction Machine **CO4 :Students are able to explain the operation of Synchronous Machines** **TB :: T1: Principles Of Electrical Engineering by V.K. Mehata , Rohit Mehta**			
40	Principle of operation and construction of three-phase induction motors	**From:**	

41	slip ring and squirrel cage motors	**12-07-2021**	Online Classes with MS Teams
42	slip-torque characteristics	**To:**	
43	efficiency calculation	**24-07-2021**	
44	starting methods		
45	Brake test on 3-Phase Induction Motor		
46,47	Numerical problems		
48	tutorial		

UNIT-V Special Machines

CO5: Students are able to understand the operation of various special machines.

TB:: T1: Principles Of Electrical Engineering by V.K. Mehata , Rohit Mehta

49	Principle of operation and construction	**From:**	Online Classes with MS Teams
50	single phase induction motor		
51	shaded pole motors	**26-07-2021**	
52	capacitor motors	**To:**	
53	AC servomotor	**07-08-2021**	
54,55,56	Numerical problems		
57,58	tutorial		

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TENTATIVE LESSON PLAN: R201201

Course Title: MATHEMATICS - II		
Section : CSM	Date : 10-05-2021	Page No : 01 of 02
Revision No : 00	Prepared By : S.SUMAN	Approved By : HOD

Tools: Black board, PPT'S, MS Teams

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-1: SOLVING SYSTEM OF LINEAR EQUATIONS, EIGEN VALUES AND EIGEN VECTORS **CO1: solve system of linear algebraic equations using Gauss elimination, Gauss Jordan, Gauss Seidel (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
1	Introduction to matrices	From: 10-05-2021 To: 29-05-2021	Lecture interspersed with discussions
2	Rank of matrix- definition, properties		
3	Problems on rank by Echelon form		
4	Rank by normal form		
5	PAQ form problems		
6	Homogeneous system AX=0		
7	Non Homogeneous system AX=B		
8	Problems on rank method		
9	Gauss Elimination method		
10	Eigen values – definition		
11	Properties of Eigen values		
12	Properties of Eigen values		
13	Problems on finding eigen values, vectors		
14	Problems on finding eigen values, vectors		
UNIT – II:, CALEY-HAMILTON THEOREM, QUADRATIC FORMS **CO2: Develop the use of matrix algebra techniques that is needed by engineers for practical applications (L6)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
15	Caley Hamilton theorem, verification, problems		

16	Finding inverse and power of a matrix by caley Hamilton theorem	From: 31-05-2021 To: 12-06-2021	Lecture interspersed with discussions
17	Diagonalization – problems		
18	Quadratic forms – definition, examples		
19	Matrix form of a quadratic form		
20	Canonical form of a quadratic form		
21	Methods of reducing a QF in to canonical form		
22	Orthogonal reduction method		
23	Congruent operations method		
24	Lagrange's method		
25	Problems on finding nature of a QF		
UNIT-III : UNIT – III: ITERATIVE METHODS: **CO3: Avaluate approximating the roots of polynomial and transcendental equations by different algorithms (L5)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
26	Introduction	From: 14-06-2021 To: 19-06-2021 & From: 28-06-2021 To: 07-07-2021	Lecture interspersed with discussions
27	Method – 1: Bisection method		
28	Problems		
30	Method – 2: Regula falsi method		
31	Problems		
33	Method – 3: Iteration method		
34	Problems		
35	Method – 4: Newton Raphson method		
36	Problems		
37	Newton Raphson method simultaneous equations		
38	Gauss Jacobi Method		
39	Gauss Seidal Method		
40	problems		
UNIT – IV: INTERPOLATION **CO4: Apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
41	Introduction: Forward and Backward Differences		

42	Newton's Forward interpolation formula	From: 08-07-2021 To: 24-07-2021	Lecture interspersed with discussions
43	Problems		
44	Newton's Backward interpolation formula		
45	Problems		
46	Gauss Forward interpolation formula – Problems		
47	Problems		
48	Gauss Backward interpolation formula – Problems		
49	Problems		
50	Lagranges interpolation formula – Problems		
51	Problems		
52	Operators		
UNIT – V: NUMERICAL INTEGRATION AND SOLUTION OF ORDINARY DIFFERENTIAL EQUATION **CO5: Apply different algorithms for approximating the solutions of ordinary differential equations to its analytical computations (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
53	Trapezoidal rule	From: 26-07-2021. To: 07-08-2021	Lecture interspersed with discussions
54	Simpson's 1/3 rule		
55	Problems		
56	Simpson's 3/8 rule		
57	Taylor's series method		
58	Problems		
59	Picard's method of successive approximation		
60	Euler's method		
61	Euler's modified method		
62	Problems		
63	Runge kutta method		
64	Problems		

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TENTATIVE LESSON PLAN: R201207

Course Title: Applied Physics			
Section :CS M	Date : 10.05.2021	Page No : 00	
Revision No :00	Prepared By : M.VIDYA ELIZABETH	Approved By : HOD	
Tools:			

No. of Periods	TOPIC	DATE	Mode of Delivery
UNIT-I	**Wave Optics** **CO1:** Analyze the differences between interference and diffraction with applications. And illustrate the resolving power of various optical instruments.	From: 10/05/2021 To: 03/06/2021	Lecture interspersed with discussions
1	**INTERFERENCE:** Introduction		
2	Principle of Superposition		
3	Coherent Sources-Types		
4	Interference- Types		
5	Interference in Thin Films		
6	Colours in Thin Film		
7	Newton's Rings		
8	Applications of Interference		
9	Problems		
10	**Diffraction:** Introduction		
11	Fresnel and Fraunhoffer Diffraction		Lecture interspersed with discussions
12	Fraunhoffer diffraction at single slit		
13	Fraunhoffer diffraction at single slit		
14	Fraunhoffer diffraction at Double Slit		
15	Fraunhoffer diffraction at N-Slits		
16	Grating Equation		
17	Dispersive Power of Grating		
18	Resolving Power of Grating		
19	Problems		
20	**Polarization :** Introduction		
21	Types of Polarization		
22	Polarization by Reflection, Refraction		
23	Polarization by Duoble Refraction		Lecture interspersed with discussions
24	Nicol Prism		
25	Quarter Wave & Half Wave Plates and Problems		
UNIT- II	**Lasers and Fiber Optics** **CO2:** Explain various types of emission of radiation. Identify the role of laser in engineering applications. Identify the applications of optical fibers in medical, communication and other fields. Apply the fiber optic concepts in various fields.		
26	**Lasers :** Introduction		
27	Characteristics of Laser		
28	Spontaneous and Stimulated emission		
29	Einstein's Coefficients		
30	Population Inversion, Lasing action		
31	Pumping Mechanism-Pumping method		

32	Ruby Laser		
33	Helium Neon Laser		
34	Applications of Lasers		
35	**Fiber Optics:** Introduction		
36	Principle of Optical Fiber		
37	Acceptance angle and Numerical Aperture		Lecture interspersed with discussions
38	Classifications optical fibers based on refractive index profile and modes		
39	Propagation of electromagnetic wave through optical fibers, applications		
40	Problems		
UNIT -III	**Quantum Mechanics, Free Electron Theory and Band theory** **CO3:** Describe the dual nature of matter. Identify the role of Schrodinger's time independent wave equation in studying particle in one-dimensional infinite potential well. Identify the role of classical and quantum free electron theory in the study of electrical conductivity.	From: 17-06-2021 To 06-07-2021	
41	**Quantum Mechanics:** Introduction		
42	Dual Nature of Matter		
43	Heisenberg's Uncertainty Principle, Significance and properties of wave function		Lecture interspersed with discussions
44	Schrodinger Time Independent Equation		
45	Schrodinger Time Dependent Equation		
46	Particle in a Box		
47	Problems		
48	**Free Electron Theory:** Introduction		
49	Classical free electron theory- merits and demerits		
50	Quantum free electron theory- merits and demerits		
51	Equation for electrical conductivity based on quantum free electron theory		
52	Fermi-Dirac distribution, Fermi energy.		
53	Density of states (3D)		
54	Problems		
55	**Band theory of Solids :**Introduction		
56	Bloch's Theorem, Kronig - Penney model		
57	E vs K diagram - v vs K diagram		
58	Effective Mass of Electron, Concept of Hole		
59	Energy Bands in Crystalline Solids Classification		
UNIT-IV	**Dielectric and Magnetic Materials** **CO4:** Explain the concept of dielectric constant and polarization in dielectric materials. Explain the applications of dielectric and magnetic materials . Apply the concept of magnetism to magnetic devices.	From 08-07-2021 To 24-07-2021	
60	**Dielectric Materials:** Introduction, Dielectric polarization		
61	Types of polarizations- Electronic polarisation		Lecture interspersed with discussions
62	Ionic polarisation, Orientation polarizations		
63	Lorentz internal field		
64	Clausius-Mossotti equation, Piezoelectricity.		
65	**Magnetic Materials:** Introduction		
66	Magnetic dipole moment , Magnetization, Magnetic susceptibility and permeability		

67	Origin of permanent magnetic moment		
68	Classification of magnetic materials: Dia, para, Ferro, antiferro and Ferri magnetic materials		
69	Domain concept for Ferromagnetism, Domainwalls		
70	Hysteresis soft and hard magnetic materials		
71	Eddy currents, Engineering applications and Problems		
UNIT – V	**Semiconductors and Superconductors** **CO5:** Explain the properties of charge carriers in semiconductors . Identify the type of semiconductor using Hall effect . Identify applications of semiconductors in electronic devices. Explain Meissner's effect, BCS theory & Josephson effect in superconductors.	From 26-07-2021 To 07-08-2021	Lecture interspersed with discussions
72	**Semiconductors:** Introduction, Intrinsic semiconductors		
73	Density of charge carriers ,Electrical conductivity, Fermi level		
74	Extrinsic semiconductors , density of charge carriers, Dependence of Fermi energy on carrier concentration and temperature		
75	Drift and diffusion currents – Einstein's equation		
76	Hall effect, Hall coefficient, Applications of Hall effect		
77	**Superconductors**: Introduction – Properties of superconductors		
78	Meissner effect , Type I and Type II superconductors		
70	BCS theory , Josephson effects (AC and DC)		
80	SQUID's – High Tc superconductors , Applications of superconductors		

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(ISO 9001:2015 Certified Institution)
Department of Science and Humanities

TENTATIVE LESSON PLAN R201218/R20
DATA STRUCTURES

Course Title: DATA STRUCTURES (R201218)		
Section : CSM	Date : 09/05/2021	Page No : 01 of 03
Revision No : 00	Prepared By : Dr. B. Srikanth	Approved By : HOD

Tools: Black board, PPTs, Moodle

No. of Periods	TOPIC	Date	Mode of Delivery
Unit-1: Introduction to Data Structures, Searching & Sorting Techniques **CO1: Understand the basic concepts of data structures and Summarize the concept about searching & sorting techniques** **TB:" Data Structures Using C. 2nd Edition, Reema Thareja, Oxford "**			
1	Data Structures - Definition	From: 11/05/2021 To:27/05/2021	Lecture Interspersed With MS Teams
2	Classification of Data Structures		
3	Operations on Data Structures, Abstract Data Type (ADT)		
4	Preliminaries of algorithms, Time and Space complexity		
5	Searching - Linear search		
6	Binary search		
7	Fibonacci search		
8	Sorting- Insertion sort		
9	Selection sort		
10	Exchange -Bubble sort		
11	Exchange -Quick sort		
12	Distribution (radix sort)		
13	Merging (Merge sort)		
14	Tutorial		
UNIT-II: Linked List Concepts **CO2: Implement different Linked List Algorithms** **TB:" Data Structures Using C. 2nd Edition, Reema Thareja, Oxford**			
10	Linked List: Introduction, Single linked list	From:29/05	Lecture
11	Representation of Linked list in memory		
12	Operations on Single Linked list-Insertion		
13	Deletion		
14	Search and Traversal		
15	Reversing Single Linked list		
16	Applications on Single Linked list - Polynomial Expression		

	Representation	/2021 To: 19/06/2021	interspersed with MS Teams
17	Addition and Multiplication		
18	Sparse Matrix Representation using Linked List		
19	Advantages and Disadvantages of Single Linked list		
20	Double Linked list-Insertion		
21	Deletion		
22	Circular Linked list-Insertion		
23	Deletion.		
24	Tutorial		
No. of Periods	TOPIC	**Date**	**Mode of Delivery**
UNIT-III: Queues & Stacks **CO3: Describe Stack and Queue operations** **TB:" Data Structures Using C. 2nd Edition, Reema Thareja, Oxford "**			
25	Queues: Introduction to Queues	From:21/06 /2021 To: 12/07/2021	Lecture interspersed with MS Teams
26	Representation of Queues-using Arrays Representation of Queues-using Linked list		
27	Implementation of Queues-using Arrays		
28	Implementation of Queues-using Linked list		
29	Application of Queues-Circular Queues, Dequeues		
30	Priority Queues, Multiple Queues		
31	Stacks: Introduction to Stacks		
32	Array Representation of Stacks		
33	Operations on Stacks		
34	Linked list Representation of Stacks		
35	Operations on Linked Stack		
36	Applications-Reversing list		
37	Factorial Calculation,		
38	Infix to Postfix Conversion		
39	Evaluating Postfix Expressions		
40	**Tutorial**		
UNIT-IV: Trees Concepts **CO4: Demonstrate different trees concepts** **TB:" Data Structures Using C. 2nd Edition, Reema Thareja, Oxford "**			
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
41	Trees: Basic Terminology in Trees	From: 13/07/2021	
42	Binary Trees-Properties		
43	Representation of Binary Trees using Arrays and Linked lists		
44	Binary Search Trees- Basic Concepts		

45	BST Operations: Insertion, Deletion, Tree Traversals	To: 26/07/2021	Lecture interspersed with MS Teams
46	Applications-Expression Trees		
47	Heap Sort		
48	Balanced Binary Trees AVL Trees		
49	Insertion, Deletion and Rotations		
50	**Tutorial**		
UNIT-V: Graphs Concepts **CO5: knowledge of Graph concepts** **TB:" Data Structures Using C. 2nd Edition, Reema Thareja, Oxford "**			
51	Graphs: Basic Concepts	From: 27/07/2021 To:10/08/2021	Lecture interspersed with MS Teams
52	Representations of Graphs		
53	Adjacency Matrix and using Linked list		
54	Graph Traversals (BFT & DFT)		
55	Applications- Minimum Spanning Tree Using Prims Algorithm		
56	Kruskals Algorithm		
59	Dijkstra's shortest path,		
60	Transitive closure		
61	Warshall's Algorithm		
62	**Tutorial**		

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TENTATIVE LESSON PLAN: R20ES120122
DIGITAL LOGIC DESIGN

Course Title: DIGITAL LOGIC DESIGN		
Section : CSE – AI&ML	**Date : 17/05/2021**	**Page No :** 1 to 4
Revision No : 00	**Prepared By : T.Vishnu Priya**	**Approved By : HOD**

Tools: MS Teams, Black board, PPTs

S.NO.	TOPIC	Date	Mode of Delivery
UNIT-I Digital Systems and Binary Numbers **CO1:** An ability to define different number systems. Binary addition and subtraction, 2's complement representation and operations with this representation. **TB1:** Digital Design, 5/e, Morris Mano, Michael D Ciletti, PEA.			
1	**Digital Systems and Binary Numbers** Digital Systems, Binary Numbers	From 17/05/2021 To 02/06/2021	Lecture interspersed with discussions
2	Octal and Hexadecimal Numbers.		
3	Complements of Numbers.		
4	Signed Binary Numbers.		
5	Arithmetic addition and subtraction.		
6	4-bit codes, BCD code, BCD addition & subtraction.		
7	EXCESS 3 code, addition & subtraction.		
8	Alphanumeric codes, 242 1, etc. 9's & 10'scomplement.		
9	Tutorial		
UNIT-II Concept of Boolean algebra **CO2:** An ability to understand the different switching algebra theorems and apply them for logic functions. **CO3:** An ability to define the Karnaugh map for a few variables and perform an algorithmic reduction of logic functions. **TB1:** Digital Design, 5/e, Morris Mano, Michael D Ciletti, PEA.			
10	**Concept of Boolean algebra** Basic Theorems and Properties of Boolean algebra	From 04/06/2021 To 19/06/2021	Lecture interspersed with discussions
11	Boolean Functions		
12	Canonical and Standard Forms		
13	Minterms and Maxterms		
14	Gate level Minimization		
15	Map Method, Three-Variable K-Map		
16	Four Variable K-Maps. Products of Sum Simplification, Sum of Products Simplification		
17	Don't – Care Conditions		Lecture interspersed with discussions
18	NAND and NOR Implementation, Exclusive OR Function.		
19	Canonical and Standard Forms Minterms and Maxterms		
20	Tutorial		

UNIT-III Combinational Logic

CO4: Students will be able to design various logic gates starting from simple ordinary gates to complex programmable logic devices & arrays.

TB1: Digital Design, 5/e, Morris Mano, Michael D Ciletti, PEA.

21	**Combinational Logic** Introduction, Analysis	From 21/06/2021 To 14/07/2021	Lecture interspersed with discussions
22	Binary Adder,		
23	Binary Subtractor, Binary Multiplier		
24	Decoders, Encoders		
25	Priority Encoder, Code Converters		
26	Multiplexers, Demultiplexer.		
27	Magnitude Comparator		
28	HDL Models of Combinational Circuits.		
29	Realization of Switching Functions Using PROM, PAL and PLA.		
30	Tutorial		

UNIT-IV Synchronous Sequential Logic

CO5: Students will be able to design various sequential circuits starting from flip-flop to registers and counters.

TB1: Digital Design, 5/e, Morris Mano, Michael D Ciletti, PEA.

31	**Synchronous Sequential Logic** Introduction to Sequential Circuits.	From 16/07/2021 To 24/07/2021	Lecture interspersed with discussions
32	Storage Elements: Latches, Flip-Flops.		
33	Flip-Flops, RS- Latch Using NANO and NOR Gates, Truth Tables		
34	RS, JK, T and D Flip Flops, Truth and Excitation Tables		
35	Conversion of Flip Flops		
36	Tutorial		

UNIT-V Registers and Counters

CO5: Students will be able to design various sequential circuits starting from flip-flop to registers and counters.

TB1: Digital Design, 5/e, Morris Mano, Michael D Ciletti, PEA

37	**Registers and Counters** Registers, Shift Registers,	From 26/07/2021 To 31/07/2021	Lecture interspersed with discussions
38	Synchronous Counters		
39	Ripple Counters, Ring Counter, Johnson Counter		
40	Tutorial		

TB1: Digital Design, 5/e, Morris Mano, Michael D Ciletti, PEA

TB2: Fundamentals of Logic Design, 5/e, Roth, Cengage.

TB3: Digital Logic and Computer Design, M.Morris Mano, PEA.

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TENTATIVE LESSON PLAN: R201225
PYTHON PROGRAMMING

Course Title: PYTHON PROGRAMMING (R201225)		
Section : CSM	Date : 06/05/2021	Page No : 01 of 03
Revision No : 00	Prepared By : M.V.SUMANTH	Approved By : HOD

Tools: Black board, PPTs, Moodle

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I Data types, Decision Structures, Repetition Structures **CO1: To learn about the program development cycle, Data types, Decision structures and repetition structures in python programming.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
1	Introduction to Python, Program Development Cycle, Input, Processing, and Output,	From: 10/05/2021 To: 30/05/2021	Online
2	Displaying Output with the Print Function, Comments, Variables,		
3	Reading Input from the Keyboard, Performing Calculations,		
4	Operators. Type conversions, Expressions, More about Data Output.		
5	Data Types, and Expression: Strings Assignment, and Comment,		
6	Numeric Data Types and Character Sets, Using functions and Modules.		
7	Decision Structures and Boolean Logic: if, if-else, if-elif-else Statements, Nested Decision Structures,		
8	Comparing Strings, Logical Operators, Boolean Variables.		
9	Repetition Structures: Introduction, while loop, for loop, Calculating a Running Total,		
10	Input Validation Loops, Nested Loops.		
11	Tutorial		
UNIT-II Selection, Iterations, String Methods **CO2: To gain knowledge on formatted output, String Methods and File handling in python.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
12	Control Statement: Definite iteration for Loop		
13	Formatting Text for output,		
14	Selection if and if else		

	Statement Conditional Iteration The While Loop	From: 31/05/2021 To: 19/6/2021	Online
15	Strings and Text Files: Accessing Character and Substring in Strings,		
16	Data Encryption		
17	Strings and Number Systems,		
18	String Methods		
19	Text Files		
20	Tutorial		
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
UNIT-III Lists, Dictionaries and Functions. **CO3: To learn about Lists, Dictionaries, Defining Functions and Modules. To learn about their usage.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
21	List and Dictionaries: Lists,	From: 21/06/2021 To: 13/07/2021	Online
22	Defining Simple Functions,		
23	Dictionaries		
24	Design with Function: Functions as Abstraction Mechanisms.		
25	Problem Solving with Top Down Design.		
26	Design with Recursive Functions		
27	Case Study Gathering Information from a File System,		
28	Managing a Program's Namespace,		
29	Higher Order Function.		
30	Modules: Modules, Standard Modules, Packages.		
31	Tutorial		
UNIT-IV File Operations **CO4: To assimilate about File operations, Object Oriented Programming concepts.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
32	**UNIT IV** File Operations: Reading config files in python, Writing log files in python,		
33	Understanding read functions, read(), readline() and readlines(), Understanding write functions, write() and writelines(),		

34	Manipulating file pointer using seek, Programming using file operations	From: 14/07/2021 To: 30/07/2021	Online
35	Object Oriented Programming: Concept of class, object and instances, Constructor, class attributes and destructors,		
36	Real time use of class in live projects, Inheritance ,		
37	overlapping and overloading operators, Adding and retrieving dynamic attributes of classes,		
38	Programming using Oops support		
39	Design with Classes: Objects and Classes, Data modelling Examples, Case Study An ATM,		
40	Structuring Classes with Inheritance and Polymorphism		
41	Tutorial		
UNIT-V Exception Handling **CO5: To assimilate about Errors and Exceptions, Exception Handling and Graphical User Interface.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
42	Errors and Exceptions: Syntax Errors, Exceptions,	From: 31/07/2021 To: 14/08/2021	Online
43	Handling Exceptions, Raising Exceptions,User-defined Exceptions, Defining Clean-up Actions, Redefined Clean-up Actions.		
44	Graphical User Interfaces: The Behavior of Terminal Based Programs and GUI -Based, Programs,		
45	Coding Simple GUI-Based Programs,		
46	Other Useful GUI Resources. Programming: Introduction to Programming Concepts with Scratch.		
47	Tutorial		

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TENTATIVE LESSON PLAN: R201201

Course Title: MATHEMATICS - II		
Section : CSD	Date : 10-05-2021	Page No : 01 of 02
Revision No : 00	Prepared By : S.KALPANA	Approved By : HOD

Tools: Black board, PPT'S, MS Teams

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-1: SOLVING SYSTEM OF LINEAR EQUATIONS, EIGEN VALUES AND EIGEN VECTORS **CO1: solve system of linear algebraic equations using Gauss elimination, Gauss Jordan, Gauss Seidel (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
1	Introduction to matrices	From: 10-05-2021 To: 29-05-2021	Lecture interspersed with discussions
2	Rank of matrix- definition, properties		
3	Problems on rank by Echelon form		
4	Rank by normal form		
5	PAQ form problems		
6	Homogeneous system AX=0		
7	Non Homogeneous system AX=B		
8	Problems on rank method		
9	Gauss Elimination method		
10	Eigen values – definition		
11	Properties of Eigen values		
12	Properties of Eigen values		
13	Problems on finding eigen values, vectors		
14	Problems on finding eigen values, vectors		
UNIT – II:, CALEY-HAMILTON THEOREM, QUADRATIC FORMS **CO2: Develop the use of matrix algebra techniques that is needed by engineers for practical applications (L6)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
15	Caley Hamilton theorem, verification, problems		

16	Finding inverse and power of a matrix by caley Hamilton theorem	From: 31-05-2021 To: 12-06-2021	Lecture interspersed with discussions
17	Diagonalization – problems		
18	Quadratic forms – definition, examples		
19	Matrix form of a quadratic form		
20	Canonical form of a quadratic form		
21	Methods of reducing a QF in to canonical form		
22	Orthogonal reduction method		
23	Congruent operations method		
24	Lagrange's method		
25	Problems on finding nature of a QF		
UNIT-III : UNIT – III: ITERATIVE METHODS: **CO3: Avaluate approximating the roots of polynomial and transcendental equations by different algorithms (L5)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
26	Introduction	From: 14-06-2021 To: 19-06-2021 & From: 28-06-2021 To: 07-07-2021	Lecture interspersed with discussions
27	Method – 1: Bisection method		
28	Problems		
30	Method – 2: Regula falsi method		
31	Problems		
33	Method – 3: Iteration method		
34	Problems		
35	Method – 4: Newton Raphson method		
36	Problems		
37	Newton Raphson method simultaneous equations		
38	Gauss Jacobi Method		
39	Gauss Seidal Method		
40	problems		
UNIT – IV: INTERPOLATION **CO4: Apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
41	Introduction: Forward and Backward Differences		

42	Newton's Forward interpolation formula	From: 08-07-2021 To: 24-07-2021	Lecture interspersed with discussions
43	Problems		
44	Newton's Backward interpolation formula		
45	Problems		
46	Gauss Forward interpolation formula – Problems		
47	Problems		
48	Gauss Backward interpolation formula – Problems		
49	Problems		
50	Lagranges interpolation formula – Problems		
51	Problems		
52	Operators		
UNIT – V: NUMERICAL INTEGRATION AND SOLUTION OF ORDINARY DIFFERENTIAL EQUATION **CO5: Apply different algorithms for approximating the solutions of ordinary differential equations to its analytical computations (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
53	Trapezoidal rule	From: 26-07-2021. To: 07-08-2021	Lecture interspersed with discussions
54	Simpson's 1/3 rule		
55	Problems		
56	Simpson's 3/8 rule		
57	Taylor's series method		
58	Problems		
59	Picard's method of successive approximation		
60	Euler's method		
61	Euler's modified method		
62	Problems		
63	Runge kutta method		
64	Problems		

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TENTATIVE LESSON PLAN: R201207

Course Title: Applied Physics			
Section :CS D	Date : 10.05.2021	Page No : 00	
Revision No :00	Prepared By : Dr. J. Ashok	Approved By : HOD	
Tools:			

No. of Periods	TOPIC	DATE	Mode of Delivery
UNIT-I	**Wave Optics** **CO1:** Analyze the differences between interference and diffraction with applications. And illustrate the resolving power of various optical instruments.	From: 10/05/2021 To: 03/06/2021	Lecture interspersed with discussions
1	**INTERFERENCE:** Introduction		
2	Principle of Superposition		
3	Coherent Sources-Types		
4	Interference- Types		
5	Interference in Thin Films		
6	Colours in Thin Film		
7	Newton's Rings		
8	Applications of Interference		
9	Problems		
10	**Diffraction:** Introduction		
11	Fresnel and Fraunhoffer Diffraction		Lecture interspersed with discussions
12	Fraunhoffer diffraction at single slit		
13	Fraunhoffer diffraction at single slit		
14	Fraunhoffer diffraction at Double Slit		
15	Fraunhoffer diffraction at N-Slits		
16	Grating Equation		
17	Dispersive Power of Grating		
18	Resolving Power of Grating		
19	Problems		
20	**Polarization :** Introduction		
21	Types of Polarization		
22	Polarization by Reflection, Refraction		
23	Polarization by Duoble Refraction		Lecture interspersed with discussions
24	Nicol Prism		
25	Quarter Wave & Half Wave Plates and Problems		
UNIT- II	**Lasers and Fiber Optics** **CO2:** Explain various types of emission of radiation. Identify the role of laser in engineering applications. Identify the applications of optical fibers in medical, communication and other fields. Apply the fiber optic concepts in various fields.		
26	**Lasers :** Introduction		
27	Characteristics of Laser		
28	Spontaneous and Stimulated emission		
29	Einstein's Coefficients		
30	Population Inversion, Lasing action		
31	Pumping Mechanism-Pumping method		

32	Ruby Laser		Lecture interspersed with discussions
33	Helium Neon Laser		
34	Applications of Lasers		
35	**Fiber Optics:** Introduction		
36	Principle of Optical Fiber		
37	Acceptance angle and Numerical Aperture		
38	Classifications optical fibers based on refractive index profile and modes		
39	Propagation of electromagnetic wave through optical fibers, applications		
40	Problems		
UNIT -III	**Quantum Mechanics, Free Electron Theory and Band theory** **CO3:** Describe the dual nature of matter. Identify the role of Schrodinger's time independent wave equation in studying particle in one-dimensional infinite potential well. Identify the role of classical and quantum free electron theory in the study of electrical conductivity.	From: 17-06-2021 To 06-07-2021	
41	**Quantum Mechanics:** Introduction		
42	Dual Nature of Matter		
43	Heisenberg's Uncertainty Principle, Significance and properties of wave function		Lecture interspersed with discussions
44	Schrodinger Time Independent Equation		
45	Schrodinger Time Dependent Equation		
46	Particle in a Box		
47	Problems		
48	**Free Electron Theory:** Introduction		
49	Classical free electron theory- merits and demerits		
50	Quantum free electron theory- merits and demerits		
51	Equation for electrical conductivity based on quantum free electron theory		
52	Fermi-Dirac distribution, Fermi energy.		
53	Density of states (3D)		
54	Problems		
55	**Band theory of Solids :**Introduction		
56	Bloch's Theorem, Kronig - Penney model		
57	E vs K diagram - v vs K diagram		
58	Effective Mass of Electron, Concept of Hole		
59	Energy Bands in Crystalline Solids Classification		
UNIT-IV	**Dielectric and Magnetic Materials** **CO4:** Explain the concept of dielectric constant and polarization in dielectric materials. Explain the applications of dielectric and magnetic materials . Apply the concept of magnetism to magnetic devices.	From 08-07-2021 To 24-07-2021	
60	**Dielectric Materials:** Introduction, Dielectric polarization		
61	Types of polarizations- Electronic polarisation		Lecture interspersed with discussions
62	Ionic polarisation, Orientation polarizations		
63	Lorentz internal field		
64	Clausius-Mossotti equation, Piezoelectricity.		
65	**Magnetic Materials:** Introduction		
66	Magnetic dipole moment , Magnetization, Magnetic susceptibility and permeability		

67	Origin of permanent magnetic moment		
68	Classification of magnetic materials: Dia, para, Ferro, antiferro and Ferri magnetic materials		
69	Domain concept for Ferromagnetism, Domainwalls		
70	Hysteresis soft and hard magnetic materials		
71	Eddy currents, Engineering applications and Problems		
UNIT – V	**Semiconductors and Superconductors** **CO5:** Explain the properties of charge carriers in semiconductors . Identify the type of semiconductor using Hall effect . Identify applications of semiconductors in electronic devices. Explain Meissner's effect, BCS theory & Josephson effect in superconductors.	From 26-07-2021 To 07-08-2021	Lecture interspersed with discussions
72	**Semiconductors:** Introduction, Intrinsic semiconductors		
73	Density of charge carriers ,Electrical conductivity, Fermi level		
74	Extrinsic semiconductors , density of charge carriers, Dependence of Fermi energy on carrier concentration and temperature		
75	Drift and diffusion currents – Einstein's equation		
76	Hall effect, Hall coefficient, Applications of Hall effect		
77	**Superconductors**: Introduction – Properties of superconductors		
78	Meissner effect , Type I and Type II superconductors		
70	BCS theory , Josephson effects (AC and DC)		
80	SQUID's – High Tc superconductors , Applications of superconductors		

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(ISO 9001:2015 Certified Institution)
Department of Science and Humanities

TENTATIVE LESSON PLAN R201218/R20
DATA STRUCTURES

Course Title: DATA STRUCTURES (R201218)		
Section : CSD	Date : 09/05/2021	Page No : 01 of 03
Revision No : 00	Prepared By : Dr. B. Srikanth	Approved By : HOD

Tools: Black board, PPTs, Moodle

No. of Periods	TOPIC	Date	Mode of Delivery
Unit-1: Introduction to Data Structures, Searching & Sorting Techniques **CO1: Understand the basic concepts of data structures and Summarize the concept about searching & sorting techniques** **TB:" Data Structures Using C. 2nd Edition, Reema Thareja, Oxford "**			
1	Data Structures - Definition	From: 11/05/2021 To:27/05/2021	Lecture Interspersed With MS Teams
2	Classification of Data Structures		
3	Operations on Data Structures, Abstract Data Type (ADT)		
4	Preliminaries of algorithms, Time and Space complexity		
5	Searching - Linear search		
6	Binary search		
7	Fibonacci search		
8	Sorting- Insertion sort		
9	Selection sort		
10	Exchange -Bubble sort		
11	Exchange -Quick sort		
12	Distribution (radix sort)		
13	Merging (Merge sort)		
14	Tutorial		
UNIT-II: Linked List Concepts **CO2: Implement different Linked List Algorithms** **TB:" Data Structures Using C. 2nd Edition, Reema Thareja, Oxford**			
10	Linked List: Introduction, Single linked list	From:29/05	Lecture
11	Representation of Linked list in memory		
12	Operations on Single Linked list-Insertion		
13	Deletion		
14	Search and Traversal		
15	Reversing Single Linked list		
16	Applications on Single Linked list - Polynomial Expression		

	Representation	/2021	interspersed
17	Addition and Multiplication	To:	with
18	Sparse Matrix Representation using Linked List	19/06/2021	MS Teams
19	Advantages and Disadvantages of Single Linked list		
20	Double Linked list-Insertion		
21	Deletion		
22	Circular Linked list-Insertion		
23	Deletion.		
24	Tutorial		
No. of Periods	TOPIC	**Date**	**Mode of Delivery**
UNIT-III: Queues & Stacks			
CO3: Describe Stack and Queue operations			
TB:" Data Structures Using C. 2nd Edition, Reema Thareja, Oxford "			
25	Queues: Introduction to Queues		
26	Representation of Queues-using Arrays Representation of Queues-using Linked list		
27	Implementation of Queues-using Arrays		
28	Implementation of Queues-using Linked list		Lecture
29	Application of Queues-Circular Queues, Dequeues	From:21/06	interspersed
30	Priority Queues, Multiple Queues	/2021	with MS
31	Stacks: Introduction to Stacks		Teams
32	Array Representation of Stacks	To:	
33	Operations on Stacks	12/07/2021	
34	Linked list Representation of Stacks		
35	Operations on Linked Stack		
36	Applications-Reversing list		
37	Factorial Calculation,		
38	Infix to Postfix Conversion		
39	Evaluating Postfix Expressions		
40	**Tutorial**		
UNIT-IV: Trees Concepts			
CO4: Demonstrate different trees concepts			
TB:" Data Structures Using C. 2nd Edition, Reema Thareja, Oxford "			
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
41	Trees: Basic Terminology in Trees		
42	Binary Trees-Properties		
43	Representation of Binary Trees using Arrays and Linked lists	From:	
44	Binary Search Trees- Basic Concepts	13/07/2021	

45	BST Operations: Insertion, Deletion, Tree Traversals	To: 26/07/2021	Lecture interspersed with MS Teams
46	Applications-Expression Trees		
47	Heap Sort		
48	Balanced Binary Trees AVL Trees		
49	Insertion, Deletion and Rotations		
50	**Tutorial**		
UNIT-V: Graphs Concepts **CO5: knowledge of Graph concepts** **TB:" Data Structures Using C. 2nd Edition, Reema Thareja, Oxford "**			
51	Graphs: Basic Concepts	From: 27/07/2021 To:10/08/2021	Lecture interspersed with MS Teams
52	Representations of Graphs		
53	Adjacency Matrix and using Linked list		
54	Graph Traversals (BFT & DFT)		
55	Applications- Minimum Spanning Tree Using Prims Algorithm		
56	Kruskals Algorithm		
59	Dijkstra's shortest path,		
60	Transitive closure		
61	Warshall's Algorithm		
62	**Tutorial**		

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TENTATIVE LESSON PLAN: R20ES120122/
DIGITAL LOGIC DESIGN

Course Title: DIGITAL LOGIC DESIGN		
Section : CSE – BIGDATA	**Date : 17/05/2021**	**Page No :** 1 to 4
Revision No : 00	**Prepared By : T.Vishnu Priya**	**Approved By : HOD**

Tools: MS Teams, Black board, PPTs

S.NO.	TOPIC	Date	Mode of Delivery
UNIT-I Digital Systems and Binary Numbers **CO1:** An ability to define different number systems. Binary addition and subtraction, 2's complement representation and operations with this representation. **TB1:** Digital Design, 5/e, Morris Mano, Michael D Ciletti, PEA.			
1	**Digital Systems and Binary Numbers** Digital Systems, Binary Numbers	From 17/05/2021 To 02/06/2021	Lecture interspersed with discussions
2	Octal and Hexadecimal Numbers.		
3	Complements of Numbers.		
4	Signed Binary Numbers.		
5	Arithmetic addition and subtraction.		
6	4-bit codes, BCD code, BCD addition & subtraction.		
7	EXCESS 3 code, addition & subtraction.		
8	Alphanumeric codes, 242 1, etc. 9's & 10'scomplement.		
9	Tutorial		
UNIT-II Concept of Boolean algebra **CO2:** An ability to understand the different switching algebra theorems and apply them for logic functions. **CO3:** An ability to define the Karnaugh map for a few variables and perform an algorithmic reduction of logic functions. **TB1:** Digital Design, 5/e, Morris Mano, Michael D Ciletti, PEA.			
10	**Concept of Boolean algebra** Basic Theorems and Properties of Boolean algebra	From 04/06/2021 To 19/06/2021	Lecture interspersed with discussions
11	Boolean Functions		
12	Canonical and Standard Forms		
13	Minterms and Maxterms		
14	Gate level Minimization		
15	Map Method, Three-Variable K-Map		
16	Four Variable K-Maps. Products of Sum Simplification, Sum of Products Simplification		
17	Don't – Care Conditions		Lecture interspersed with discussions
18	NAND and NOR Implementation, Exclusive OR Function.		
19	Canonical and Standard Forms		
20	Minterms and Maxterms		

UNIT-III Combinational Logic

CO4: Students will be able to design various logic gates starting from simple ordinary gates to complex programmable logic devices & arrays.

TB1: Digital Design, 5/e, Morris Mano, Michael D Ciletti, PEA.

21	**Combinational Logic** Introduction, Analysis	From 21/06/2021 To 14/07/2021	Lecture interspersed with discussions
22	Binary Adder,		
23	Binary Subtractor, Binary Multiplier		
24	Decoders, Encoders		
25	Priority Encoder, Code Converters		
26	Multiplexers, Demultiplexer.		
27	Magnitude Comparator		
28	HDL Models of Combinational Circuits.		
29	Realization of Switching Functions Using PROM, PAL and PLA.		
30	Tutorial		

UNIT-IV Synchronous Sequential Logic

CO5: Students will be able to design various sequential circuits starting from flip-flop to registers and counters.

TB1: Digital Design, 5/e, Morris Mano, Michael D Ciletti, PEA.

31	**Synchronous Sequential Logic** Introduction to Sequential Circuits.	From 16/07/2021 To 24/07/2021	Lecture interspersed with discussions
32	Storage Elements: Latches, Flip-Flops.		
33	Flip-Flops, RS- Latch Using NANO and NOR Gates, Truth Tables		
34	RS, JK, T and D Flip Flops, Truth and Excitation Tables		
35	Conversion of Flip Flops		
36	Tutorial		

UNIT-V Registers and Counters

CO5: Students will be able to design various sequential circuits starting from flip-flop to registers and counters.

TB1: Digital Design, 5/e, Morris Mano, Michael D Ciletti, PEA

37	**Registers and Counters** Registers, Shift Registers,	From 26/07/2021 To 31/07/2021	Lecture interspersed with discussions
38	Synchronous Counters		
39	Ripple Counters, Ring Counter, Johnson Counter		
40	Tutorial		

TB1: Digital Design, 5/e, Morris Mano, Michael D Ciletti, PEA

TB2: Fundamentals of Logic Design, 5/e, Roth, Cengage.

TB3: Digital Logic and Computer Design, M.Morris Mano, PEA.

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TENTATIVE LESSON PLAN: R201225
PYTHON PROGRAMMING

Course Title: PYTHON PROGRAMMING (R201225)		
Section : CSD	Date : 06/05/2021	Page No : 01 of 03
Revision No : 00	Prepared By : M.V.SUMANTH	Approved By : HOD

Tools: Black board, PPTs, Moodle

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I Data types, Decision Structures, Repetition Structures **CO1: To learn about the conceptual introduction, data types, variables in python programming.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
1	**Conceptual introduction**: topics in computer science, algorithms;	From: 11/05/2021 To: 26/05/2021	Online
2	modern computer systems: hardware architecture,		
3	data representation in computers, software and operating system;		
4	installing Python; basic syntax, interactive shell		
5	editing, saving, and running a script.		
6	The concept of data types; variables, assignments;		
7	immutable variables; numerical types; arithmetic operators and expressions;		
8	comments in the program, understanding error messages;		
9	Tutorial		
UNIT-II Selection, Iterations, String Methods **CO2: To gain knowledge on Control statements, String Manipulations and Number system in python.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
10	**Conditions, boolean logic**, logical operators; Ranges,	From: 27/05/2021 To: 14/6/2021	Online
11	**Control statements:** if-else, loops (for, while);		
12	short-circuit (lazy) evaluation,		
13	**Strings and text files**; manipulating files and directories, os and sys modules;		
14	text files: reading/writing text .		
15	numbers from/to a file		
16	Creating and reading a formatted file (csv or tab-separated).		
17	**String manipulations**: subscript operator,		
18	indexing,		
19	slicing a string		
20	;strings and number system:		

	Statement Conditional Iteration The While Loop	From: 31/05/2021 To: 19/6/2021	Online
15	Strings and Text Files: Accessing Character and Substring in Strings,		
16	Data Encryption		
17	Strings and Number Systems,		
18	String Methods		
19	Text Files		
20	Tutorial		
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
UNIT-III Lists, Dictionaries and Functions. **CO3: To learn about Lists, Dictionaries, Defining Functions and Modules. To learn about their usage.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
21	List and Dictionaries: Lists,	From: 21/06/2021 To: 13/07/2021	Online
22	Defining Simple Functions,		
23	Dictionaries		
24	Design with Function: Functions as Abstraction Mechanisms.		
25	Problem Solving with Top Down Design.		
26	Design with Recursive Functions		
27	Case Study Gathering Information from a File System,		
28	Managing a Program's Namespace,		
29	Higher Order Function.		
30	Modules: Modules, Standard Modules, Packages.		
31	Tutorial		
UNIT-IV File Operations **CO4: To assimilate about File operations, Object Oriented Programming concepts.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
32	**UNIT IV** File Operations: Reading config files in python, Writing log files in python,		
33	Understanding read functions, read(), readline() and readlines(), Understanding write functions, write() and writelines(),		

34	Manipulating file pointer using seek, Programming using file operations	From: 14/07/2021 To: 30/07/2021	Online
35	Object Oriented Programming: Concept of class, object and instances, Constructor, class attributes and destructors,		
36	Real time use of class in live projects, Inheritance ,		
37	overlapping and overloading operators, Adding and retrieving dynamic attributes of classes,		
38	Programming using Oops support		
39	Design with Classes: Objects and Classes, Data modelling Examples, Case Study An ATM,		
40	Structuring Classes with Inheritance and Polymorphism		
41	Tutorial		
UNIT-V Exception Handling **CO5: To assimilate about Errors and Exceptions, Exception Handling and Graphical User Interface.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
42	Errors and Exceptions: Syntax Errors, Exceptions,	From: 31/07/2021 To: 14/08/2021	Online
43	Handling Exceptions, Raising Exceptions,User-defined Exceptions, Defining Clean-up Actions, Redefined Clean-up Actions.		
44	Graphical User Interfaces: The Behavior of Terminal Based Programs and GUI -Based, Programs,		
45	Coding Simple GUI-Based Programs,		
46	Other Useful GUI Resources. Programming: Introduction to Programming Concepts with Scratch.		
47	Tutorial		

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TENTATIVE LESSON PLAN: R201201

Course Title: MATHEMATICS - II		
Section : CSE-A	Date : 10-05-2021	Page No : 01 of 02
Revision No : 00	Prepared By : S.SUMAN	Approved By : HOD

Tools: Black board, PPT'S, MS Teams

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-1: SOLVING SYSTEM OF LINEAR EQUATIONS, EIGEN VALUES AND EIGEN VECTORS **CO1: solve system of linear algebraic equations using Gauss elimination, Gauss Jordan, Gauss Seidel (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
1	Introduction to matriçes	From: 10-05-2021 To: 29-05-2021	Lecture interspersed with discussions
2	Rank of matrix- definition, properties		
3	Problems on rank by Echelon form		
4	Rank by normal form		
5	PAQ form problems		
6	Homogeneous system AX=0		
7	Non Homogeneous system AX=B		
8	Problems on rank method		
9	Gauss Elimination method		
10	Eigen values – definition		
11	Properties of Eigen values		
12	Properties of Eigen values		
13	Problems on finding eigen values, vectors		
14	Problems on finding eigen values, vectors		
UNIT – II:, CALEY-HAMILTON THEOREM, QUADRATIC FORMS **CO2: Develop the use of matrix algebra techniques that is needed by engineers for practical applications (L6)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
15	Caley Hamilton theorem, verification, problems		

16	Finding inverse and power of a matrix by caley Hamilton theorem	From: 31-05-2021 To: 12-06-2021	Lecture interspersed with discussions
17	Diagonalization – problems		
18	Quadratic forms – definition, examples		
19	Matrix form of a quadratic form		
20	Canonical form of a quadratic form		
21	Methods of reducing a QF in to canonical form		
22	Orthogonal reduction method		
23	Congruent operations method		
24	Lagrange's method		
25	Problems on finding nature of a QF		
UNIT-III : UNIT – III: ITERATIVE METHODS: **CO3: Avaluate approximating the roots of polynomial and transcendental equations by different algorithms (L5)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
26	Introduction	From: 14-06-2021 To: 19-06-2021 & From: 28-06-2021 To: 07-07-2021	Lecture interspersed with discussions
27	Method – 1: Bisection method		
28	Problems		
30	Method – 2: Regula falsi method		
31	Problems		
33	Method – 3: Iteration method		
34	Problems		
35	Method – 4: Newton Raphson method		
36	Problems		
37	Newton Raphson method simultaneous equations		
38	Gauss Jacobi Method		
39	Gauss Seidal Method		
40	problems		
UNIT – IV: INTERPOLATION **CO4: Apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
41	Introduction: Forward and Backward Differences		

42	Newton's Forward interpolation formula	From: 08-07-2021 To: 24-07-2021	Lecture interspersed with discussions
43	Problems		
44	Newton's Backward interpolation formula		
45	Problems		
46	Gauss Forward interpolation formula – Problems		
47	Problems		
48	Gauss Backward interpolation formula – Problems		
49	Problems		
50	Lagranges interpolation formula – Problems		
51	Problems		
52	Operators		
UNIT – V: NUMERICAL INTEGRATION AND SOLUTION OF ORDINARY DIFFERENTIAL EQUATION **CO5: Apply different algorithms for approximating the solutions of ordinary differential equations to its analytical computations (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
53	Trapezoidal rule	From: 26-07-2021. To: 07-08-2021	Lecture interspersed with discussions
54	Simpson's 1/3 rule		
55	Problems		
56	Simpson's 3/8 rule		
57	Taylor's series method		
58	Problems		
59	Picard's method of successive approximation		
60	Euler's method		
61	Euler's modified method		
62	Problems		
63	Runge kutta method		
64	Problems		

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TENTATIVE LESSON PLAN: R201201

Course Title: MATHEMATICS - II		
Section : CSE-B	Date : 10-05-2021	Page No : 01 of 02
Revision No : 00	Prepared By : B.V.RAMAKRISHNA RAO	Approved By : HOD

Tools: Black board, PPT'S, MS Teams

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-1: SOLVING SYSTEM OF LINEAR EQUATIONS, EIGEN VALUES AND EIGEN VECTORS **CO1: solve system of linear algebraic equations using Gauss elimination, Gauss Jordan, Gauss Seidel (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
1	Introduction to matrices	From: 10-05-2021 To: 29-05-2021	Lecture interspersed with discussions
2	Rank of matrix- definition, properties		
3	Problems on rank by Echelon form		
4	Rank by normal form		
5	PAQ form problems		
6	Homogeneous system AX=0		
7	Non Homogeneous system AX=B		
8	Problems on rank method		
9	Gauss Elimination method		
10	Eigen values – definition		
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15	Caley Hamilton theorem, verification, problems		

16	Finding inverse and power of a matrix by caley Hamilton theorem	From: 31-05-2021 To: 12-06-2021	Lecture interspersed with discussions
17	Diagonalization – problems		
18	Quadratic forms – definition, examples		
19	Matrix form of a quadratic form		
20	Canonical form of a quadratic form		
21	Methods of reducing a QF in to canonical form		
22	Orthogonal reduction method		
23	Congruent operations method		
24	Lagrange's method		
25	Problems on finding nature of a QF		
UNIT-III : UNIT – III: ITERATIVE METHODS: **CO3: Avaluate approximating the roots of polynomial and transcendental equations by different algorithms (L5)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
26	Introduction	From: 14-06-2021 To: 19-06-2021 & From: 28-06-2021 To: 07-07-2021	Lecture interspersed with discussions
27	Method – 1: Bisection method		
28	Problems		
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33	Method – 3: Iteration method		
34	Problems		
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36	Problems		
37	Newton Raphson method simultaneous equations		
38	Gauss Jacobi Method		
39	Gauss Seidal Method		
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41	Introduction: Forward and Backward Differences		

42	Newton's Forward interpolation formula	From: 08-07-2021 To: 24-07-2021	Lecture interspersed with discussions
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48	Gauss Backward interpolation formula – Problems		
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51	Problems		
52	Operators		
UNIT – V: NUMERICAL INTEGRATION AND SOLUTION OF ORDINARY DIFFERENTIAL EQUATION **CO5: Apply different algorithms for approximating the solutions of ordinary differential equations to its analytical computations (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
53	Trapezoidal rule	From: 26-07-2021. To: 07-08-2021	Lecture interspersed with discussions
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55	Problems		
56	Simpson's 3/8 rule		
57	Taylor's series method		
58	Problems		
59	Picard's method of successive approximation		
60	Euler's method		
61	Euler's modified method		
62	Problems		
63	Runge kutta method		
64	Problems		

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SRK INSTITUTE OF TECHNOLOGY VIJAYAWADA	SRK INSTITUTE OF TECHNOLOGY ENIKEPADU, VIJAYAWADA 521108 Department Of Sciences And Humanities	SRKIT / S & H/12

TENTATIVE LESSON PLAN: R201115

Course Title: APPLIED CHEMISTRY			
Section : CSE-A	**Date :** 24-05- 2021	**Page No :** 1-3	
Revision No :00	**Prepared By : Dr.T.V.Nagalakshmi**	**Approved By : HOD**	
Tools:			

No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
	UNIT – I: POLYMER TECHNOLOGY **CO:** Analyze the different types of composite plastic materials and interpret the mechanism of conduction in conducting polymers		
1	**Polymerisation: -** Introduction, methods of polymerization (emulsion and suspension), mechanical properties.	From: **24-05-2021** To: **07-06-2021**	Lecture Interspersed With Discussions
2	Plastics: Compounding, fabrication (compression, injection, blown film and extrusion)		
3	preparation, properties and applications (PVC, polycarbonates and Bakelite)		
4	Mention some examples of plastic materials used in electronic gadgets, recycling of e-plastic waste (waste to wealth).		
5	Elastomers:- Introduction, preparation, properties and applications (Buna S, thiokol and polyurethanes)		
6	Materials used in electronic gadgets, recycling of e-plastic waste		
7	Composite materials: Fiber reinforced plastics, conducting polymers		
8	Biodegradable polymers, biopolymers, biomedical polymers.		
	UNIT-II :ELECTROCHEMICAL CELLS AND CORROSION **CO:** Utilize the theory of construction of electrodes, batteries and fuel cells in redesigning new engineering products and categorize the reasons for corrosion and study methods to control corrosion		
1	Single electrode potential, electrochemical series and uses of series		Lecture Interspersed With Discussions
2	Standard hydrogen electrode, calomel electrode, construction of glass electrode		
3	Batteries (Dry cell, Li ion battery and zinc air cells)		
4	Fuel cells (H2-O2, CH3 OH-O2, phosphoric acid and molten carbonate).		

5	***Corrosion:-***Definition, theories of corrosion (chemical and electrochemical)	From: **09-06-2021** To: **24-06-2021**	
6	Galvanic corrosion, differential aeration corrosion, stress corrosion, galvanic series		
7	Factors influencing rate of corrosion, corrosion control (proper designing and cathodic protection)		
8	Protective coatings (surface preparation, cathodic coatings, anodic coatings,		
9	Electroplating and electroless plating [nickel])		
10	Paints (constituents, functions and special paints)		

Unit – III UNIT III: MATERIAL CHEMISTRY

COs:

- Synthesize nanomaterials for modern advances of engineering technology.
- Summarize the preparation of semiconductors; analyze the applications of liquid crystals and superconductors.

1	**Part I : Non-elemental semiconducting materials**	From: **25-06-2021** To: **17-07-2021**	Lecture Interspersed With Discussions
2	Semiconductor devices (p-n junction diode as rectifier, junction transistor		
3	Insulators & magnetic materials: electrical insulators		
4	Ferro and ferri magnetism-Hall effect and its applications.		
5	**Part II: Nano materials**:- Introduction-sol-gel method-		
6	Characterization by BET, SEM and TEM methods		
7	Applications of graphene-carbon nanotubes and fullerenes:		
8	Types, preparation and applications Liquid crystals		
9	Introduction-types-applications. Super conductors:- Type –I, Type II-characteristics and applications.		

UNIT IV: SPECTROSCOPIC TECHNIQUES & NON CONVENTIONAL ENERGY SOURCES

Cos:

- ***Analyze*** the principles of different analytical instruments and their applications.
- ***Design*** models for energy by different natural sources.

1.	**Part A: SPECTROSCOPIC TECHNIQUES**		Lecture
2.	Electromagnetic spectrum-UV , laws of absorption, instrumentation, theory of electronic spectroscopy,		
3	Frank-Condon principle, chromophores and auxochromes,		
4.	Intensity shifts, applications		
5.	FT-IR (instrumentation and IR of some organic compounds, applications).		

6.	Magnetic resonance imaging and CT scan (procedure & applications).	From: **19-07-2021** To: **04-08-2021**	Interspersed With Discussions
7.	**Part B: NON CONVENTIONAL ENERGY SOURCES**		
8.	Design, working, schematic diagram, advantages and disadvantages of photovoltaic cell,		
9.	Hydropower, geothermal power,		
10.	Tidal and wave power		
UNIT V: ADVANCED CONCEPTS/TOPICS IN CHEMISTRY **COs:** Obtain the knowledge of computational chemistry and molecular machines			
1	Computational chemistry: Introduction to computational chemistry	From: **05-08-2021** To: **22-08-2021**	Lecture Interspersed With Discussions
2.	Molecular modeling and docking studies		
3.	**Molecular switches:** characteristics of molecular motors and machines		
4.	Rotaxanes and Catenanes as artificial molecular machines,		
5.	prototypes linear motions in rotaxanes,		
6.	An acid-base controlled molecular shuttle		
7.	A molecular elevator		
8.	An autonomous light-powered molecular motor		

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SRK INSTITUTE OF TECHNOLOGY VIJAYAWADA	SRK INSTITUTE OF TECHNOLOGY ENIKEPADU, VIJAYAWADA 521108 Department Of Sciences And Humanities	SRKIT / S & H/12

TENTATIVE LESSON PLAN: R201115

Course Title: APPLIED CHEMISTRY			
Section : CSE-B	**Date :** 24-05- 2021	**Page No :** 1-3	
Revision No :00	**Prepared By : Dr.T.V.Nagalakshmi**	**Approved By : HOD**	
Tools:			

No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
	UNIT – I: POLYMER TECHNOLOGY **CO:** Analyze the different types of composite plastic materials and interpret the mechanism of conduction in conducting polymers		
1	**Polymerisation: -** Introduction, methods of polymerization (emulsion and suspension), mechanical properties.	From: **24-05-2021** To: **07-06-2021**	Lecture Interspersed With Discussions
2	Plastics: Compounding, fabrication (compression, injection, blown film and extrusion)		
3	preparation, properties and applications (PVC, polycarbonates and Bakelite)		
4	Mention some examples of plastic materials used in electronic gadgets, recycling of e-plastic waste (waste to wealth).		
5	Elastomers:- Introduction, preparation, properties and applications (Buna S, thiokol and polyurethanes)		
6	Materials used in electronic gadgets, recycling of e-plastic waste		
7	Composite materials: Fiber reinforced plastics, conducting polymers		
8	Biodegradable polymers, biopolymers, biomedical polymers.		
	UNIT-II :ELECTROCHEMICAL CELLS AND CORROSION **CO:** Utilize the theory of construction of electrodes, batteries and fuel cells in redesigning new engineering products and categorize the reasons for corrosion and study methods to control corrosion		
1	Single electrode potential, electrochemical series and uses of series		Lecture Interspersed With Discussions
2	Standard hydrogen electrode, calomel electrode, construction of glass electrode		
3	Batteries (Dry cell, Li ion battery and zinc air cells)		
4	Fuel cells (H2-O2, CH3 OH-O2, phosphoric acid and molten carbonate).		

5	***Corrosion:***-Definition, theories of corrosion (chemical and electrochemical)	From: **09-06-2021** To: **24-06-2021**	
6	Galvanic corrosion, differential aeration corrosion, stress corrosion, galvanic series		
7	Factors influencing rate of corrosion, corrosion control (proper designing and cathodic protection)		
8	Protective coatings (surface preparation, cathodic coatings, anodic coatings,		
9	Electroplating and electroless plating [nickel])		
10	Paints (constituents, functions and special paints)		

UNIT- III: MATERIAL CHEMISTRY

COs:

- Synthesize nanomaterials for modern advances of engineering technology.
- Summarize the preparation of semiconductors; analyze the applications of liquid crystals and superconductors.

1	**Part I : Non-elemental semiconducting materials**	From: **25-06-2021** To: **17-07-2021**	Lecture Interspersed With Discussions
2	Semiconductor devices (p-n junction diode as rectifier, junction transistor		
3	Insulators & magnetic materials: electrical insulators		
4	Ferro and ferri magnetism-Hall effect and its applications.		
5	**Part II: Nano materials**:- Introduction-sol-gel method-		
6	Characterization by BET, SEM and TEM methods		
7	Applications of graphene-carbon nanotubes and fullerenes:		
8	Types, preparation and applications Liquid crystals		
9	Introduction-types-applications. Super conductors:- Type –I, Type II-characteristics and applications.		

UNIT- IV: SPECTROSCOPIC TECHNIQUES & NON CONVENTIONAL ENERGY SOURCES

Cos:

- ***Analyze*** the principles of different analytical instruments and their applications.
- ***Design*** models for energy by different natural sources.

1.	**Part A: SPECTROSCOPIC TECHNIQUES**		Lecture
2.	Electromagnetic spectrum-UV , laws of absorption, instrumentation, theory of electronic spectroscopy,		
3	Frank-Condon principle, chromophores and auxochromes,		
4.	Intensity shifts, applications		
5.	FT-IR (instrumentation and IR of some organic compounds, applications).		

6.	Magnetic resonance imaging and CT scan (procedure & applications).	From: **19-07-2021** To: **04-08-2021**	Interspersed With Discussions
7.	**Part B: NON CONVENTIONAL ENERGY SOURCES**		
8.	Design, working, schematic diagram, advantages and disadvantages of photovoltaic cell,		
9.	Hydropower, geothermal power,		
10.	Tidal and wave power		
UNIT- V: ADVANCED CONCEPTS/TOPICS IN CHEMISTRY **COs:** Obtain the knowledge of computational chemistry and molecular machines			
1	Computational chemistry: Introduction to computational chemistry	From: **05-08-2021** To: **22-08-2021**	Lecture Interspersed With Discussions
2.	Molecular modeling and docking studies		
3.	**Molecular switches:** characteristics of molecular motors and machines		
4.	Rotaxanes and Catenanes as artificial molecular machines,		
5.	prototypes linear motions in rotaxanes,		
6.	An acid-base controlled molecular shuttle		
7.	A molecular elevator		
8.	An autonomous light-powered molecular motor		

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TENTATIVE LESSON PLAN: R201216

Course Title : COMPUTER ORGANIZATION		
Section : Sec A	**Date : 10-05-2021**	
Revision No : 00	**Prepared By : A. KALYAN KUMAR**	**Approved By : HOD**

Tools: MS TEAMS, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-1: DIGITAL COMPUTERS AND DATA REPRESENTATION, BOOLEAN ALGEBRA AND LOGICAL GATES **CO-1:** Demonstrate and understanding of the design of the functional units of a digital computer system. **CO-2:** Relate Postulates of Boolean algebra and minimize combinational functions **Text Book:** Digital Logic and Computer Design, Moriss Mano, 11thEdition, PearsonEducation. Computer System Architecture,3rd ed., M.Morris Mano, PHI			
1.	Introduction, Number Systems	17-05-2021 To 05-06-2021	Online Classes With Ms Teams
2.	Decimal To Binary Conversion		
3.	Binary Coded Decimal Numbers		
4.	Weighted Codes		
5.	Self – Complementing Codes		
6.	Cyclic Codes		
7.	Error Detecting Codes		
8.	Error Correcting Codes		
9.	Hamming Code For Error Correction		
10.	Alphanumeric Codes		
11.	ASCI Code		
12.	Data Types, Complements		
13.	Fixed Point Representation		
14.	Floating Point Representation		
15.	Theorems And Properties		
16.	Boolean Functions		
17.	Canonical And Standard Forms		
18.	Minimization Of Boolean Functions Using Algebraic Identities		
19.	Karnaugh Map Representation And Minimization Using Two And Three Variable K - Maps		
20.	Logic Gates, Universal Gates		
21.	Two Level Realizations Using Logic Gates: AND – OR, OR – AND, NAND – NAND, And NOR – NOR Structures		
UNIT-2: DIGITAL LOGIC CIRCUITS, SEQUENTIAL SWITCHING CIRCUITS **CO-3:** Recognize and manipulate representations of numbers stored in digital computers. **CO-4:**Build the logic families and realization of logic gates **Text Book:** Digital Logic and Computer Design, Moriss Mano, 11thEdition, PearsonEducation.			
22.	Combinational Circuits: Introduction	06-06-2021 To 26-06-2021	Online Classes With Ms Teams
23.	Combinational Circuit Design Procedure		
24.	Implementation Using Universal Gates		
25.	Multi Bit Adder		
26.	Multiplexers		
27.	De – Multiplexers		
28.	Decoders		

29.	Latches And Flip – Flops	06-06-2021 TO 26-06-2021	Online Classes With Ms Teams
30.	Ripple Counters Using T Flip – Flops		
31.	Synchronous Counters: Shift Registers		
32.	Ring Counters		

UNIT –3: COMPUTER ARITHMETIC, REGISTER TRANSFER LANGUAGE AND MICRO OPERATIONS, BASIC COMPUER ORGANIZATION AND DESIGN

CO5: Design and analyze combinational and sequential circuits

Text Book: Computer System Architecture,3rded., M.MorrisMano, PHI

33.	ADDITION AND SUBTRACTION	28-06-2021 TO 11-07-2021	Online Classes With Ms Teams
34.	MULTIPICATION ALGORITHMS		
35.	BOOTHS MULTIPICATION ALGORITHMS		
36.	DIVISION ALGORITHMS		
37.	FLOATING – POINT ARITHMETIC OPERATIONS		
38.	BUS AND MEMORY TRANSFER		
39.	ARITHMETIC AND LOGICAL MICRO OPERATIONS		
40.	SHIFT AND ROTATE MICRO OPERATIONS		
41.	STORED PROGRAM CONCEPT		
42.	COMPUTER REGISTERS		
43.	COMMON BUS SYSTEM		
44.	COMPUTER INSTRUCTIONS		
45.	TIMING AND CONTROL		
46.	INSTRUCTION CYCLE		
47.	MEMORY REFERENCE INSTRUCTIONS		
48.	INPUT – OUPUT CONFIGURATION		
49.	PROGRAM INTERRUPT		

UNIT – 4: MICRO PROGRAMMED CONTROL, CENTRAL PROCESSING UNIT

CO6: Recall the internal organization of computers,CPU,memory unit and Input/Outputs and the relations between its main components

Text Book: Computer System Architecture,3rded., M.MorrisMano, PHI

No. of Periods	TOPIC	DATE	Mode of Delivery
50.	Control Memory	12-07-2021 TO 25-07-2021	Online Classes With Ms Teams
51.	Address Sequencing		
52.	Micro Program Example		
53.	Design Of Control Unit		
54.	General Register Organization		
55.	Instruction Formats		
56.	Addressing Modes		
57.	Data Transfer And Manipulation		
58.	Program Control: Conditional Flags And Branching		

UNIT – 5: MEMORY ORGANIZATION, INPUT – OUTPUT ORGANIZATION

CO7: Solve elementary problems by assembly language programming

Text Book: Computer System Architecture,3rded., M.MorrisMano, PHI

59.	MEMORY HIERARCHY	26-07-2021 TO 14-08-2021	Online Classes With Ms Teams
60.	MAIN MEMORY		
61.	AUXILIARY MEMORY		
62.	ASSOCIATIVE MEMORY		
63.	CACHE MEMORY		
64.	INPUT – OUTPUT INTERFACE		
65.	ASYNCRONOUS DATA TRANSFER		
66.	MODES OF TRANSFER		
67.	PRIORITY INTERRUPT		
68.	DIRECT MEMORY ACCESS		

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TENTATIVE LESSON PLAN: R201216

Course Title : COMPUTER ORGANIZATION		
Section : Sec B	**Date : 10-05-2021**	
Revision No : 00	**Prepared By : A. KALYAN KUMAR**	**Approved By : HOD**

Tools: MS TEAMS, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-1: DIGITAL COMPUTERS AND DATA REPRESENTATION, BOOLEAN ALGEBRA AND LOGICAL GATES **CO-1:** Demonstrate and understanding of the design of the functional units of a digital computer system. **CO-2:** Relate Postulates of Boolean algebra and minimize combinational functions **Text Book:** Digital Logic and Computer Design, Moriss Mano, 11thEdition, PearsonEducation. Computer System Architecture,3rd ed., M.Morris Mano, PHI			
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18.	Minimization Of Boolean Functions Using Algebraic Identities		
19.	Karnaugh Map Representation And Minimization Using Two And Three Variable K - Maps		
20.	Logic Gates, Universal Gates		
21.	Two Level Realizations Using Logic Gates: AND – OR, OR – AND, NAND – NAND, And NOR – NOR Structures		
UNIT-2: DIGITAL LOGIC CIRCUITS, SEQUENTIAL SWITCHING CIRCUITS **CO-3:** Recognize and manipulate representations of numbers stored in digital computers. **CO-4:**Build the logic families and realization of logic gates **Text Book:** Digital Logic and Computer Design, Moriss Mano, 11thEdition, PearsonEducation.			
22.	Combinational Circuits: Introduction	06-06-2021 To 26-06-2021	Online Classes With Ms Teams
23.	Combinational Circuit Design Procedure		
24.	Implementation Using Universal Gates		
25.	Multi Bit Adder		
26.	Multiplexers		
27.	De – Multiplexers		
28.	Decoders		

29.	Latches And Flip – Flops	06-06-2021 TO 26-06-2021	Online Classes With Ms Teams
30.	Ripple Counters Using T Flip – Flops		
31.	Synchronous Counters: Shift Registers		
32.	Ring Counters		

UNIT –3: COMPUTER ARITHMETIC, REGISTER TRANSFER LANGUAGE AND MICRO OPERATIONS, BASIC COMPUER ORGANIZATION AND DESIGN

CO5: Design and analyze combinational and sequential circuits

Text Book: Computer System Architecture,3rd ed., M.MorrisMano, PHI

33.	ADDITION AND SUBTRACTION	28-06-2021 TO 11-07-2021	Online Classes With Ms Teams
34.	MULTIPICATION ALGORITHMS		
35.	BOOTHS MULTIPICATION ALGORITHMS		
36.	DIVISION ALGORITHMS		
37.	FLOATING – POINT ARITHMETIC OPERATIONS		
38.	BUS AND MEMORY TRANSFER		
39.	ARITHMETIC AND LOGICAL MICRO OPERATIONS		
40.	SHIFT AND ROTATE MICRO OPERATIONS		
41.	STORED PROGRAM CONCEPT		
42.	COMPUTER REGISTERS		
43.	COMMON BUS SYSTEM		
44.	COMPUTER INSTRUCTIONS		
45.	TIMING AND CONTROL		
46.	INSTRUCTION CYCLE		
47.	MEMORY REFERENCE INSTRUCTIONS		
48.	INPUT – OUPUT CONFIGURATION		
49.	PROGRAM INTERRUPT		

UNIT – 4: MICRO PROGRAMMED CONTROL, CENTRAL PROCESSING UNIT

CO6: Recall the internal organization of computers,CPU,memory unit and Input/Outputs and the relations between its main components

Text Book: Computer System Architecture,3rd ed., M.MorrisMano, PHI

No. of Periods	TOPIC	DATE	Mode of Delivery
50.	Control Memory	12-07-2021 TO 25-07-2021	Online Classes With Ms Teams
51.	Address Sequencing		
52.	Micro Program Example		
53.	Design Of Control Unit		
54.	General Register Organization		
55.	Instruction Formats		
56.	Addressing Modes		
57.	Data Transfer And Manipulation		
58.	Program Control: Conditional Flags And Branching		

UNIT – 5: MEMORY ORGANIZATION, INPUT – OUTPUT ORGANIZATION

CO7: Solve elementary problems by assembly language programming

Text Book: Computer System Architecture,3rd ed., M.MorrisMano, PHI

59.	MEMORY HIERARCHY	26-07-2021 TO 14-08-2021	Online Classes With Ms Teams
60.	MAIN MEMORY		
61.	AUXILIARY MEMORY		
62.	ASSOCIATIVE MEMORY		
63.	CACHE MEMORY		
64.	INPUT – OUTPUT INTERFACE		
65.	ASYNCRONOUS DATA TRANSFER		
66.	MODES OF TRANSFER		
67.	PRIORITY INTERRUPT		
68.	DIRECT MEMORY ACCESS		

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TENTATIVE LESSON PLAN: R201218

Course Title : DATA STRUCTURES		
Section : Sec A	**Date : 10-05-2021**	
Revision No : 00	**Prepared By : Dr D. HARITHA**	**Approved By : HOD**

Tools: MS TEAMS, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-1: DATA STRUCTURES, SEARCHING, SORTING **CO-1:** Summarize the properties, interfaces, and behaviours of basic abstract data types **CO-2:** Discuss the computational efficiency of the principal algorithms for sorting & searching **Text Book:** Data Structures using C. 2nd edition, Reema Thareja, Oxford.			
1.	Definition	**From:** 15-05-2021 **To:** 12-06-2021	Online Classes With Ms Teams
2.	Classification Of Data Structures		
3.	Operations Of Data Structures		
4.	Abstract Data Type (Adt)		
5.	Preliminaries Of Algorithms		
6.	Time And Space Complexity		
7.	Linear Search		
8.	Binary Search		
9.	Fibonacci Search		
10.	Insertion Sort		
11.	Selection Sort		
12.	Bubble Sort		
13.	Quick Sort		
14.	Radix Sort		
15.	Merge Sort		
UNIT-2: LINKED LIST **CO-3:** Use arrays, records, linked structures, stacks, queues, trees, and graphs in writing programs **Text Book:** Data Structures using C. 2nd edition, Reema Thareja, Oxford.			
16.	Introduction	**From:** 14-06-2021 **To:** 22-06-2021	Online Classes With Ms Teams
17.	Single Linked List		
18.	Representation Of Linked List In Memory		
19.	Operations On Single Linked List – Insertion, Deletion, Search, And Traversal		
20.	Reversing Single Linked List		
21.	Applications On Single Linked List – Polynomial Expression Representation		
22.	Addition And Multiplication		
23.	Sparse Matrix Representation Using Linked List		
24.	Advantages And Disadvantages Of Single Linked List		
25.	Double Linked List – Insertion, Deletion		
26.	Circular Linked List – Insertion, Deletion		
UNIT –3: QUEUES, STACKS **CO3:** Use arrays, records, linked structures, stacks, queues, trees, and graphs in writing programs **Text Book:** Data Structures using C. 2nd edition, Reema Thareja, Oxford.			
27.	Introduction To Queues		
28.	Representation Of Queues – Using Arrays And Using Linked List		
29.	Implantation Of Queues – Using Arrays And Using		

	Linked list		
30.	Application of Queues-Circular Queues, Deques		
31.	Priority Queues		
32.	Multiple Queues		
33.	Introduction to Stacks	**From:** 23.06.2021 **To:** 03.07.2021	Online Classes With Ms Teams
34.	Array Representation of Stacks		
35.	Operations on Stacks		
36.	Linked list Representation of Stacks		
37.	Operations on Linked Stack		
38.	Applications-Reversing list, Factorial Calculation		
39.	Infix to Postfix Conversion		
40.	Evaluating Postfix Expressions		

UNIT – 4: TREES

CO4: Demonstrate different methods for traversing trees

Text Book: Data Structures Using C. 2nd Edition, Reema Thareja, Oxford.

No. of Periods	TOPIC	DATE	Mode of Delivery
41.	Basic Terminology in Trees	**From:** 05.07.2021 **To:** 24.07.2021	Online Classes With Ms Teams
42.	Binary Trees-Properties		
43.	Representation of Binary Trees using Arrays and Linked lists		
44.	Binary Search Trees- Basic Concepts		
45.	BST Operations: Insertion, Deletion, Tree Traversals		
46.	Applications-Expression Trees		
47.	Heap Sort		
48.	Balanced Binary Trees-AVL Trees, Insertion		
49.	Deletion and Rotations		

UNIT – 5: GRAPHS

CO4: Demonstrate different methods for traversing trees

Text Book: Data Structures Using C. 2nd Edition, Reema Thareja, Oxford.

50.	Basic Concepts	**From:** 26.07.2021 **To:** 09.08.2021	Online Classes With Ms Teams
51.	Representations of Graphs-Adjacency Matrix and using Linked list		
52.	Graph Traversals (BFT & DFT)		
53.	Applications- Minimum Spanning Tree Using Prims Algorithm		
54.	Minimum Spanning Tree Using Kruskals Algorithm		
55.	Dijkstra's shortest path		
56.	Transitive closure		
57.	Warshall's Algorithm		

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TENTATIVE LESSON PLAN: R201218

Course Title : DATA STRUCTURES		
Section : Sec B	**Date : 10-05-2021**	
Revision No : 00	**Prepared By : Dr D. HARITHA**	**Approved By : HOD**

Tools: MS TEAMS, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-1: DATA STRUCTURES, SEARCHING, SORTING **CO-1:** Summarize the properties, interfaces, and behaviours of basic abstract data types **CO-2:** Discuss the computational efficiency of the principal algorithms for sorting & searching **Text Book:** Data Structures using C. 2nd edition, Reema Thareja, Oxford.			
1.	Definition	**From:** 15-05-2021 **To:** 12-06-2021	Online Classes With Ms Teams
2.	Classification Of Data Structures		
3.	Operations Of Data Structures		
4.	Abstract Data Type (Adt)		
5.	Preliminaries Of Algorithms		
6.	Time And Space Complexity		
7.	Linear Search		
8.	Binary Search		
9.	Fibonacci Search		
10.	Insertion Sort		
11.	Selection Sort		
12.	Bubble Sort		
13.	Quick Sort		
14.	Radix Sort		
15.	Merge Sort		
UNIT-2: LINKED LIST **CO-3:** Use arrays, records, linked structures, stacks, queues, trees, and graphs in writing programs **Text Book:** Data Structures using C. 2nd edition, Reema Thareja, Oxford.			
16.	Introduction	**From:** 14-06-2021 **To:** 22-06-2021	Online Classes With Ms Teams
17.	Single Linked List		
18.	Representation Of Linked List In Memory		
19.	Operations On Single Linked List – Insertion, Deletion, Search, And Traversal		
20.	Reversing Single Linked List		
21.	Applications On Single Linked List – Polynomial Expression Representation		
22.	Addition And Multiplication		
23.	Sparse Matrix Representation Using Linked List		
24.	Advantages And Disadvantages Of Single Linked List		
25.	Double Linked List – Insertion, Deletion		
26.	Circular Linked List – Insertion, Deletion		
UNIT –3: QUEUES, STACKS **CO3:** Use arrays, records, linked structures, stacks, queues, trees, and graphs in writing programs **Text Book:** Data Structures using C. 2nd edition, Reema Thareja, Oxford.			
27.	Introduction To Queues		
28.	Representation Of Queues – Using Arrays And Using Linked List		
29.	Implantation Of Queues – Using Arrays And Using		

	Linked list	From: 23.06.2021 To: 03.07.2021	Online Classes With Ms Teams
30.	Application of Queues-Circular Queues, Deques		
31.	Priority Queues		
32.	Multiple Queues		
33.	Introduction to Stacks		
34.	Array Representation of Stacks		
35.	Operations on Stacks		
36.	Linked list Representation of Stacks		
37.	Operations on Linked Stack		
38.	Applications-Reversing list, Factorial Calculation		
39.	Infix to Postfix Conversion		
40.	Evaluating Postfix Expressions		

UNIT – 4: TREES

CO4: Demonstrate different methods for traversing trees

Text Book: Data Structures Using C. 2nd Edition, Reema Thareja, Oxford.

No. of Periods	TOPIC	DATE	Mode of Delivery
41.	Basic Terminology in Trees	From: 05.07.2021 To: 24.07.2021	Online Classes With Ms Teams
42.	Binary Trees-Properties		
43.	Representation of Binary Trees using Arrays and Linked lists		
44.	Binary Search Trees- Basic Concepts		
45.	BST Operations: Insertion, Deletion, Tree Traversals		
46.	Applications-Expression Trees		
47.	Heap Sort		
48.	Balanced Binary Trees-AVL Trees, Insertion		
49.	Deletion and Rotations		

UNIT – 5: GRAPHS

CO4: Demonstrate different methods for traversing trees

Text Book: Data Structures Using C. 2nd Edition, Reema Thareja, Oxford.

50.	Basic Concepts	From: 26.07.2021 To: 09.08.2021	Online Classes With Ms Teams
51.	Representations of Graphs-Adjacency Matrix and using Linked list		
52.	Graph Traversals (BFT & DFT)		
53.	Applications- Minimum Spanning Tree Using Prims Algorithm		
54.	Minimum Spanning Tree Using Kruskals Algorithm		
55.	Dijkstra's shortest path		
56.	Transitive closure		
57.	Warshall's Algorithm		

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TENTATIVE LESSON PLAN: R201225
PYTHON PROGRAMMING

Course Title: PYTHON PROGRAMMING (R201225)		
Section : CSE-A	Date : 06/05/2021	Page No : 01 of 03
Revision No : 00	Prepared By : M.V.SUMANTH	Approved By : HOD

Tools: Black board, PPTs, Moodle

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I Data types, Decision Structures, Repetition Structures **CO1: To learn about the conceptual introduction, data types, variables in python programming.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
1	**Conceptual introduction**: topics in computer science, algorithms;	From: 11/05/2021 To: 26/05/2021	Online
2	modern computer systems: hardware architecture,		
3	data representation in computers, software and operating system;		
4	installing Python; basic syntax, interactive shell		
5	editing, saving, and running a script.		
6	The concept of data types; variables, assignments;		
7	immutable variables; numerical types; arithmetic operators and expressions;		
8	comments in the program, understanding error messages;		
9	Tutorial		
UNIT-II Selection, Iterations, String Methods **CO2: To gain knowledge on Control statements, String Manipulations and Number system in python.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
10	**Conditions, boolean logic**, logical operators; Ranges,	From: 27/05/2021 To: 14/6/2021	Online
11	**Control statements:** if-else, loops (for, while);		
12	short-circuit (lazy) evaluation,		
13	**Strings and text files**; manipulating files and directories, os and sys modules;		
14	text files: reading/writing text .		
15	numbers from/to a file		
16	Creating and reading a formatted file (csv or tab-separated).		
17	**String manipulations**: subscript operator,		
18	indexing,		
19	slicing a string		
20	;strings and number system:		

21	Converting strings to numbers and vice versa.		
22	Binary, octal, hexadecimal numbers.		
23	Tutorial		
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
UNIT-III Lists, Dictionaries and Functions. **CO3: To learn about Lists, Dictionaries, Defining Functions and Modules. To learn about their usage.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
24	**Lists, tuples, and dictionaries:** basic list operators,	From: 15/06/2021 To: 30/06/2021	Online
25	Lists, tuples, and dictionaries, basic list operators		
26	replacing, inserting, removing an element;		
27	searching and sorting lists; dictionary literals, adding and removing keys,		
28	accessing and replacing values; traversing dictionaries.		
29	**Design with functions:** hiding redundancy, complexity;		
30	arguments and return values;,		
31	formal vs actual arguments		
32	named arguments, Program structure and design, Recursive functions.		
33	Tutorial		
UNIT-IV File Operations **CO4: To assimilate about File operations, Object Oriented Programming concepts.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
34	**File Operations:** Reading config files in python,	From: 01/07/2021 To: 22/07/2021	Online
35	Writing log files in python,		
36	**Understanding read functions,** read(), readline() and readlines(),		
37	**Understanding write functions,** write() and writelines(),		
38	Manipulating file pointer using seek, Programming using file operations		
39	**Classes and OOP**: classes, objects, attributes and methods;		
40	defining classes; design with classes,		
41	data modeling; persistent storage of objects		
42	Tutorial		
UNIT-V Graphical User Interface, Introduction to HTML **CO5: To assimilate about Inheritance, Polymorphism, Graphical User Interface and HTML.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
43	**OOP, continued:** inheritance, polymorphism, operator overloading (_eq_ , _str_ , etc);		
44	abstract classes; exception handling, try block		
45	**Graphical user interfaces;** event-driven programming		

	paradigm; tkinter module,	From: 23/07/2021 To: 14/08/2021	Online
46	**creating simple GUI**; buttons, labels, entry fields, dialogs;		
47	widget attributes - sizes, fonts, colors layouts, nested frames		
48	Multithreading, Networks,		
49	Client/Server Programming;		
50	**introduction to HTML**		
51	interacting with remote HTML server,		
52	running html-based queries, downloading pages;		
53	CGI programming, programming a simple CGI form.		
54	Tutorial		

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TENTATIVE LESSON PLAN: R201225
PYTHON PROGRAMMING

Course Title: PYTHON PROGRAMMING (R201225)		
Section : CSE-B	**Date : 06/05/2021**	**Page No :** 01 of 03
Revision No : 00	**Prepared By : M.V.SUMANTH**	**Approved By : HOD**

Tools: Black board, PPTs, Moodle

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I Data types, Decision Structures, Repetition Structures **CO1: To learn about the program development cycle, Data types, Decision structures and repetition structures in python programming.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
1	Introduction to Python, Program Development Cycle, Input, Processing, and Output,	From: 10/05/2021 To: 30/05/2021	Online
2	Displaying Output with the Print Function, Comments, Variables,		
3	Reading Input from the Keyboard, Performing Calculations,		
4	Operators. Type conversions, Expressions, More about Data Output.		
5	Data Types, and Expression: Strings Assignment, and Comment,		
6	Numeric Data Types and Character Sets, Using functions and Modules.		
7	Decision Structures and Boolean Logic: if, if-else, if-elif-else Statements, Nested Decision Structures,		
8	Comparing Strings, Logical Operators, Boolean Variables.		
9	Repetition Structures: Introduction, while loop, for loop, Calculating a Running Total,		
10	Input Validation Loops, Nested Loops.		
11	Tutorial		
UNIT-II Selection, Iterations, String Methods **CO2: To gain knowledge on formatted output, String Methods and File handling in python.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
12	Control Statement: Definite iteration for Loop		
13	Formatting Text for output,		
14	Selection if and if else		

21	Converting strings to numbers and vice versa.		
22	Binary, octal, hexadecimal numbers.		
23	Tutorial		
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
UNIT-III Lists, Dictionaries and Functions. **CO3: To learn about Lists, Dictionaries, Defining Functions and Modules. To learn about their usage.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
24	**Lists, tuples, and dictionaries:** basic list operators,	From: 15/06/2021 To: 30/06/2021	Online
25	Lists, tuples, and dictionaries, basic list operators		
26	replacing, inserting, removing an element;		
27	searching and sorting lists; dictionary literals, adding and removing keys,		
28	accessing and replacing values; traversing dictionaries.		
29	**Design with functions:** hiding redundancy, complexity;		
30	arguments and return values;,		
31	formal vs actual arguments		
32	named arguments, Program structure and design, Recursive functions.		
33	Tutorial		
UNIT-IV File Operations **CO4: To assimilate about File operations, Object Oriented Programming concepts.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
34	**File Operations:** Reading config files in python,	From: 01/07/2021 To: 22/07/2021	Online
35	Writing log files in python,		
36	**Understanding read functions,** read(), readline() and readlines(),		
37	**Understanding write functions,** write() and writelines(),		
38	Manipulating file pointer using seek, Programming using file operations		
39	**Classes and OOP**: classes, objects, attributes and methods;		
40	defining classes; design with classes,		
41	data modeling; persistent storage of objects		
42	Tutorial		
UNIT-V Graphical User Interface, Introduction to HTML **CO5: To assimilate about Inheritance, Polymorphism, Graphical User Interface and HTML.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
43	**OOP, continued:** inheritance, polymorphism, operator overloading (_eq_ , _str_ , etc);		
44	abstract classes; exception handling, try block		
45	**Graphical user interfaces;** event-driven programming		

	paradigm; tkinter module,	From: 23/07/2021 To: 14/08/2021	Online
46	**creating simple GUI**; buttons, labels, entry fields, dialogs;		
47	widget attributes - sizes, fonts, colors layouts, nested frames		
48	Multithreading, Networks,		
49	Client/Server Programming;		
50	**introduction to HTML**		
51	interacting with remote HTML server,		
52	running html-based queries, downloading pages;		
53	CGI programming, programming a simple CGI form.		
54	Tutorial		

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TENTATIVE LESSON PLAN: R201201

Course Title: MATHEMATICS - II		
Section : IT	Date : 10-05-2021	Page No : 01 of 02
Revision No : 00	Prepared By : K.BASAVARAJU	Approved By : HOD

Tools: Black board, PPT'S, MS Teams

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-1: SOLVING SYSTEM OF LINEAR EQUATIONS, EIGEN VALUES AND EIGEN VECTORS **CO1: solve system of linear algebraic equations using Gauss elimination, Gauss Jordan, Gauss Seidel (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
1	Introduction to matrices	From: 10-05-2021 To: 29-05-2021	Lecture interspersed with discussions
2	Rank of matrix- definition, properties		
3	Problems on rank by Echelon form		
4	Rank by normal form		
5	PAQ form problems		
6	Homogeneous system AX=0		
7	Non Homogeneous system AX=B		
8	Problems on rank method		
9	Gauss Elimination method		
10	Eigen values – definition		
11	Properties of Eigen values		
12	Properties of Eigen values		
13	Problems on finding eigen values, vectors		
14	Problems on finding eigen values, vectors		
UNIT – II:, CALEY-HAMILTON THEOREM, QUADRATIC FORMS **CO2: Develop the use of matrix algebra techniques that is needed by engineers for practical applications (L6)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
15	Caley Hamilton theorem, verification, problems		

16	Finding inverse and power of a matrix by caley Hamilton theorem	From: 31-05-2021 To: 12-06-2021	Lecture interspersed with discussions
17	Diagonalization – problems		
18	Quadratic forms – definition, examples		
19	Matrix form of a quadratic form		
20	Canonical form of a quadratic form		
21	Methods of reducing a QF in to canonical form		
22	Orthogonal reduction method		
23	Congruent operations method		
24	Lagrange's method		
25	Problems on finding nature of a QF		
UNIT-III : UNIT – III: ITERATIVE METHODS: **CO3: Avaluate approximating the roots of polynomial and transcendental equations by different algorithms (L5)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
26	Introduction	From: 14-06-2021 To: 19-06-2021 & From: 28-06-2021 To: 07-07-2021	Lecture interspersed with discussions
27	Method – 1: Bisection method		
28	Problems		
30	Method – 2: Regula falsi method		
31	Problems		
33	Method – 3: Iteration method		
34	Problems		
35	Method – 4: Newton Raphson method		
36	Problems		
37	Newton Raphson method simultaneous equations		
38	Gauss Jacobi Method		
39	Gauss Seidal Method		
40	problems		
UNIT – IV: INTERPOLATION **CO4: Apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
41	Introduction: Forward and Backward Differences		

42	Newton's Forward interpolation formula	From: 08-07-2021 To: 24-07-2021	Lecture interspersed with discussions
43	Problems		
44	Newton's Backward interpolation formula		
45	Problems		
46	Gauss Forward interpolation formula – Problems		
47	Problems		
48	Gauss Backward interpolation formula – Problems		
49	Problems		
50	Lagranges interpolation formula – Problems		
51	Problems		
52	Operators		
UNIT – V: NUMERICAL INTEGRATION AND SOLUTION OF ORDINARY DIFFERENTIAL EQUATION **CO5: Apply different algorithms for approximating the solutions of ordinary differential equations to its analytical computations (L3)** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
53	Trapezoidal rule	From: 26-07-2021. To: 07-08-2021	Lecture interspersed with discussions
54	Simpson's 1/3 rule		
55	Problems		
56	Simpson's 3/8 rule		
57	Taylor's series method		
58	Problems		
59	Picard's method of successive approximation		
60	Euler's method		
61	Euler's modified method		
62	Problems		
63	Runge kutta method		
64	Problems		

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TENTATIVE PLAN: R201218

Course Title: DATA STRUCTURES		
Section: IT	**Date: 21/5/2021**	**Page No:** 1 to 6
Revision No: 00	**Prepared By**: Y.V.Nandini	**Approved By:** HOD

Tools: PPTs,MS TEAMS.

S. No.	Topic	Date	Mode of Delivery
UNIT-I Data Structures, Searching, Sorting **CO1:** Summarize the properties, interfaces, and behaviors of basic abstract data types **CO2**: Discuss the computational efficiency of the principal algorithms for sorting & searching **TB1:** Data Structures Using C. 2nd Edition.Reema Thareja, Oxford. .			
1	Data Structures Introduction	From: 11/05/2021 To: 26/05/2021	Online
2	Definition, Classification of Data Structures		
3	Operations on Data Structures		
4	Abstract Data Type (ADT), Preliminaries of algorithms		
5	Time complexity		
6	Space complexity		
7	Searching Introduction		
8	Linear search		
9	Binary search		
10	Fibonacci search		
11	Insertion sort		
12	Selection sort		
13	Exchange (Bubble sort		
14	Quick sort		
15	Radix sort		
16	Merging (Merge sort)		

UNIT-II:LINKED LIST **CO3:** Use arrays, records, linked structures, stacks, queues, trees, and Graphs in writing programs **TB1:** Data Structures Using C. 2nd Edition.Reema Thareja, Oxford				
17	Linked List: Introduction	From: 27/05/2021 To: 14/6/2021	Online	
18	Single linked list,			
19	Representation of Linked list in memory			
20	Operations on Single Linked list-Insertion, Deletion			
21	Applications on Single Linked list: Sparse Matrix Representation			
22	Advantages and Disadvantages of Single Linked list			
23	Double Linked list-Insertion, Deletion			
24	Circular Linked list-Insertion, Deletion			
25	Differences between SINGLE LINKED LIST AND DOUBLE LINKED LIST			
26	Difference between LINKED LIST AND ARRAYS			
27	Polynomial Expression Representation			
UNIT-III:QUEUES AND STACKS **CO3:** Use arrays, records, linked structures, stacks, queues, trees, and Graphs in writing programs **TB1:** Data Structures Using C. 2nd Edition.Reema Thareja, Oxford				
30	Introduction to Queues, Representation of Queues using Arrays, Application of Queues			
31	Representation of Queues using Linked list			
32	Circular Queues			
33	Advantages and disadvantages of queues. Deques			
34	Priority Queues			
35	Multiple Queues			

36	Introduction to Stacks, STACKS ADVANTAGES ,PROPERTIES AND DISADVANTAGES.	From: 15/06/2021 To: 30/06/2021	Online
37	Array Representation of Stacks		
38	Linked list Representation of Stacks working.Applications-Reversing list, Factorial Calculation		
39	Infix to Postfix Conversion		
40	Evaluating Postfix Expressions.		
41	Advantages and applications of Infix to Postfix		
42	Advantages and applications of Infix to Postfix, ADVANTAGES AND DISADVANTAGES		
43	Applicatons of QUEUES and STACKS		
UNIT-IV Trees **CO3:** Use arrays, records, linked structures, stacks, queues, trees, and Graphs in writing programs **CO4**: Demonstrate different methods for traversing trees **TB2:** Data Structures and algorithm analysis in C, 2nded, Mark Allen Weiss.			
44	Trees Introduction, Terminology in Trees		
45	Trees: Basic, Examples of TREES		
46	Binary Trees Introduction		
47	Differences between Trees and Binary Trees		
48	Binary Trees-Properties		
49	Representation of Binary Trees using Arrays		
50	Representation of Binary Trees using Linked lists		
51	Binary Search Trees Introduction		
52	Differences between Trees and Binary Trees and		

	Binary Search Trees		
53	Basic Concepts, BST Operations	From: 01/07/2021	Online
54	BST Operations: Insertion, Deletion		
55	Tree Traversals: Inorder	To: 22/07/2021	
56	Tree Traversals: Preorder		
57	Tree Traversals: Postorder		
58	Applications of Tree Traversals		
59	Expression Trees		
60	Heap sort		
61	Balanced Binary Trees- AVL Trees		
62	AVL Trees		
63	Balanced Binary Trees Insertion, Deletion, Rotations		
UNIT-V Graphs **CO3:** Use arrays, records, linked structures, stacks, queues, trees, and Graphs in writing programs **TB2:** Data Structures and algorithm analysis in C, 2nded, Mark Allen Weiss.			
64	Graphs: Basic Concepts		
65	Representations of Graphs-Adjacency Matrix		
66	Representations of Graphs using Linked list		
67	BFT		
68	DFT	From: 23/07/2021	Online
69	Minimum Spanning Tree		
70	Minimum Spanning Tree Using Prims	To: 14/08/2021	
71	Minimum Spanning Tree Using Kruskals Algorithm		
72	Dijkstra's shortest path		
73	Transitive closure		

74	Warshall's Algorithm		

TB:

1) Data Structures Using C. 2nd Edition.Reema Thareja, Oxford.
2) Data Structures and algorithm analysis in C, 2nded, Mark Allen Weiss.

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TENTATIVELESSON PLAN: R201215

Course Title: APPLIED CHEMISTRY			
Section : IT	**Date :11-05-2021**	**Page No :1-3**	
Revision No :00	**Prepared By: G.L.SARVANI**	**Approved By : HOD**	
Tools: PPTS, Videos			
No. of Periods:	**TOPIC**	**Date**	**Mode of Delivery**
Unit – I: POLYMER TECHNOLOGY **(Engineering Chemistry by Jain and Jain; Dhanpat Rai Publicating Co.)** **CO1:** Importance of usage of plastics in household appliances and composites(FRP) in aerospace and automotive industries.			
1	Polymerization:- Introduction-methods of polymerization	From: 11-5-21 To: 25-5-21	Lecture interspersed with discussions
2	physical and mechanical properties.		
3	Plastics: Compounding-fabrication		
4	preparation, properties and applications of PVC,		
5	polycarbonates and Bakelite-mention some examples of plastic.		
6	Materials used in electronic gadgets, recycling of e-plastic waste		
7	Elastomers:- Natural rubber-drawbacks-vulcanization		
8	preparation, properties and applications of synthetic rubbers		
9	(Buna S, thiokol and polyurethanes		
10	Composite materials: Fiber reinforced plastics-.		
11	conductingpolymers-		
12	Biodegradable polymers biopolymers		
13	Biomedical polymers		
Unit -II :ELECTROCHEMICAL CELLS AND CORROSION **(Engineering Chemistry by Jain and Jain; Dhanpat Rai Publicating Co.)** **CO2:** Outline the basics for the construction of electrochemicalcells, batteries and fuelcells. Understand the mechanism of corrosion and how it can be prevented			
1	**Unit -II :ELECTROCHEMICAL CELLS**	From: 26-5-21 To: 15-6-21	Lecture interspersed with discussions
2	Single electrode potentia.		
3	Electrochemical series and uses of series		
4	standard hydrogen electrode, calomel electrode		
5	concentration cell-		
6	construction of glass electrode		
7	Batteries: Dry cell, Ni-Cd cells,		
8	NiMetal hydride cells, Li ion battery, zinc air cells		
9	Fuel cells: H2-O2, CH3OH-O2,		

10	phosphoric acid FUEL CELL		
	Molten carbonate fuel cell		
11	**Corrosion:**-Definition-theories of corrosion		
12	galvanic corrosion, differential aeration corrosion, stress corrosion,		
13	waterline corrosion-passivity of metals-galvanicseries		
14	Factors influencing rate of corrosion-corrosion control		
15	Protective coatings: Surface preparation, cathodic		
16	Anodic coatings, electroplating, electroless plating (nickel).		
17	Paints (constituents, functions, special paints).		
UNIT III: MATERIAL CHEMISTRY **(Engineering Chemistry by Jain and Jain; Dhanpat Rai Publicating Co.)** **CO3:** Explain the preparation of semiconductors and nanomaterials, engineering applications of nanomaterials, superconductors and liquidcrystals.			
1	**Part I : Non-elemental semiconducting materials**	From: 16--6-21 To: 20-6-21	Lecture interspersed with discussions
2	Semiconductor devices (p-n junction diode as rectifier, junction transistor		
3	Insulators & magnetic materials: electrical insulators		
4	Ferro and ferri magnetism-Hall effect and its applications.		
5	**Part II: Nano materials**:- Introduction-sol-gel method-		
6	characterization by BET, SEM and TEM methods		
7	Applications of graphene-carbon nanotubes and fullerenes:	From: 28-6-21	
8	Types, preparation and applications Liquid crystals	 To: 7-7-21	
9	Introduction-types-applications. Super conductors:-Type –I, Type II-characteristics and applications.		
UNIT IV: SPECTROSCOPIC TECHNIQUES & NON CONVENTIONAL ENERGY SOURCES **(Engineering Chemistry by Jain and Jain; Dhanpat Rai Publicating Co.)** **CO4:** Recall the increase in demand for power and hence alternative sources of power are studied due to depleting sources of fossil fuels. Advanced instrumental techniques are introduced.			
1	**Part A: SPECTROSCOPIC TECHNIQUES** Electromagnetic spectrum-UV		
2.	laws of absorption, instrumentation,		

3.	Theory of electronic spectroscopy, Frank-condon principle	From: 08-7-21 To: 26-7-21	Lecture interspersed with discussions
4.	chromophores and auxochromes, intensity shifts, applications		
5.	FT-IR (instrumentation and IR of some organic compounds, applications).		
6.	Magnetic resonance imaging and CT scan (procedure & applications).		
7.	**Part B: NON CONVENTIONAL ENERGY SOURCES**		
8.	Design, working, schematic diagram, advantages and disadvantages of photovoltaic cell,		
9	hydropower, geothermal power,		
10	Tidal and wave power		
UNIT V: ADVANCED CONCEPTS/TOPICS IN CHEMISTRY **(Engineering Chemistry by Jain and Jain; Dhanpat Rai Publicating Co.)** **C05:** Outline the basics of computational chemistry and molecular switches.			
1.	Computational chemistry: Introduction, Ab Initio studies Molecular switches	From: 28-7-21 To: 07-8-21	Lecture interspersed with discussions
2.	characteristics of molecular motors and machines, Rotaxanes		
3	Catenanes as artificial molecular machines, prototypes		
4.	linear motions in rotaxanes, an acid-base controlled molecular shuttle		
5.	a molecular elevator,		
	an autonomous light-powered molecular motor		
7.	Computational chemistry: Introduction, Ab Initio studies Molecular switches		
8.	characteristics of molecular motors and machines,		

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TENTATIVE LESSON PLAN: R201216
COMPUTER ORGANIZATION

Course Title: COMPUTER ORGANIZATION		
Section : IT	**Date : 17/05/2021**	**Page No :** 1 to 4
Revision No : 00	**Prepared By : B.S.S Tejesh**	**Approved By : HOD**

Tools: MS Teams, Black board, PPTs

S.NO.	TOPIC	Date	Mode of Delivery
UNIT-I Digital Computers and Data Representation **CO1:** Demonstrate and understanding of the design of the functional units of a digital computer system. **CO2**: Relate Postulates of Boolean algebra and minimize combinational functions **CO3**: Recognize and manipulate representations of numbers stored in digital computers **TB1:** Digital Design, 5/e, Morris Mano, Michael D Ciletti, PEA			
1.	Introduction	**From: 10.05.2021** **To: 26.05.2021**	Lecture interspersed with discussions
2.	Numbering Systems		
3.	Decimal to Binary Conversion		
4.	Binary Coded Decimal Numbers		
5.	Weighted Codes		
6.	Self-Complementing Codes		
7.	Cyclic Codes		
8.	Error Detecting Codes		
9.	Error Correcting Codes		
10.	Hamming Code for Error Correction		
11.	Alphanumeric Codes		
12.	ASCI Code		
13.	Data Representation: Data types		
14.	Complements		
15.	Fixed Point Representation		
16.	Floating Point Representation		
17.	Boolean Algebra :Theorems and properties		
18.	Boolean functions		
19.	Canonical and standard forms		
20.	Minimization of Boolean functions using algebraic identities		
21.	Karnaugh map representation and minimization using two and three variable Maps		
22.	Logical gates		

23.	Universal gates		
24.	Two-level realizations using gates : AND-OR, OR-AND, NAND-NAND and NOR-NOR structures		
UNIT-II Digital logic circuits **CO4:** Build the logic families and realization of logic gates. **CO5**:Design and analyze combinational and sequential circuits **TB1:** Digital Design, 5/e, Morris Mano, Michael D Ciletti, PEA			
25.	Combinatorial Circuit Design Procedure	**From: 27.05.2021** **To: 12.06.2021**	Lecture interspersed with discussions
26.	Implementation using universal gates		
27.	Multi-bit adder		
28.	Multiplexers		
29.	Decoders		
30.	**Sequential Switching Circuits**		
31.	Latches and Flip-Flops		
32.	Ripple counters using T flip-flops		
33.	Synchronous counters		
34.	Shift Registers		
35	Ring counters		
UNIT-III Computer Arithmetic **CO6:** Recall the internal organization of computers, CPU, memory unit and Input/Outputs and the relations between its main components **TB1:** Digital Logic and Computer Design,Moriss Mano,11thEdition,PearsonEducation			
36.	Addition and subtraction	**From: 28.06.2021** **To: 3.07.2021**	Lecture interspersed with discussions
37.	Multiplication Algorithms		
38.	Booth multiplication algorithm		
39.	Division Algorithms		
40.	Floating – point Arithmetic operations		
41.	Register Transfer language and microinstructions :Bus memory transfer		
42.	Arithmetic and logical micro-operations		
43.	Shift and rotate micro-operations		
44.	Basic Computer Organization and Design:Stored program concept		
45.	Computer Registers		
46.	Common bus system		
47.	Computer instructions		
48.	Timing and Control		
49.	Instruction cycle		
50.	Memory Reference Instructions		

51.	Input–Output configuration and program Interrupt		
UNIT-IV Micro Programmed Control **CO6:** Solve elementary problems by assembly language programming **TB1:** Digital Logic and Computer Design,Moriss Mano,11thEdition,PearsonEducation			
52.	Control memory	**From: 5.07.2021** **To: 24.07.2021**	Lecture interspersed with discussions
53.	Address sequencing		
54.	Micro program example		
55.	design of control unit		
56.	Central Processing Unit		
57.	General Register Organization		
58.	Instruction Formats		
59.	Addressing modes		
60.	Data Transfer and Manipulation		
61.	Program Control: Conditional Flags and Branching		
UNIT-V Memory Organization **CO6:** Recall the internal organization of computers, CPU, memory unit and Input/Outputs and the relations between its main components **CO7:** Solve elementary problems by assembly language programming **TB1:** Digital Logic and Computer Design,Moriss Mano,11thEdition,PearsonEducation			
62.	**Memory Organization**	**From: 26.07.2021** **To: 14.08.2021**	Lecture interspersed with discussions
63.	Memory Hierarchy		
64.	Main Memory		
65.	Auxiliary memory		
66.	Associate Memory		
67.	Cache Memory		
	Input / Output Organization		
68.	Input-Output Interface		
69.	Asynchronous data transfer		
70.	Modes of Transfer		
71.	Priority Interrupt Direct memory Access		

TB1: Digital Logic and Computer Design,Moriss Mano,11thEdition,PearsonEducation
TB2: Digital Design, 5/e, Morris Mano, Michael D Ciletti, PEA
TB2: Digital Logic and Computer Design, M.Morris Mano, PEA.

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TENTATIVE LESSON PLAN: R201225
PYTHON PROGRAMMING

Course Title: PYTHON PROGRAMMING (R201225)		
Section : IT	**Date : 21/05/2021**	**Page No :** 01 of 03
Revision No : 00	**Prepared By : Amritha mishra**	**Approved By : HOD**

Tools: Black board, PPTs, MS Teams

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I Data types, Decision Structures, Repetition Structures **CO1: To learn about the conceptual introduction, data types, variables in python programming.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
1	**Conceptual introduction**: topics in computer science, algorithms;	From: 11/05/2021 To: 26/05/2021	Online
2	modern computer systems: hardware architecture,		
3	data representation in computers, software and operating system;		
4	installing Python; basic syntax, interactive shell		
5	editing, saving, and running a script.		
6	The concept of data types; variables, assignments;		
7	immutable variables; numerical types; arithmetic operators and expressions;		
8	comments in the program, understanding error messages;		
9	Tutorial		
UNIT-II Selection, Iterations, String Methods **CO2: To gain knowledge on Control statements, String Manipulations and Number system in python.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
10	**Conditions, boolean logic**, logical operators; Ranges,	From: 27/05/2021 To: 14/6/2021	Online
11	**Control statements:** if-else, loops (for, while);		
12	short-circuit (lazy) evaluation,		
13	**Strings and text files**; manipulating files and directories, os and sys modules;		
14	text files: reading/writing text .		
15	numbers from/to a file		
16	Creating and reading a formatted file (csv or tab-separated).		
17	**String manipulations**: subscript operator,		
18	indexing,		
19	slicing a string		
20	;strings and number system:		

21	Converting strings to numbers and vice versa.		
22	Binary, octal, hexadecimal numbers.		
23	Tutorial		
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
UNIT-III Lists, Dictionaries and Functions. **CO3: To learn about Lists, Dictionaries, Defining Functions and Modules. To learn about their usage.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
24	**Lists, tuples, and dictionaries:** basic list operators,	From: 15/06/2021 To: 30/06/2021	Online
25	Lists, tuples, and dictionaries, basic list operators		
26	replacing, inserting, removing an element;		
27	searching and sorting lists; dictionary literals, adding and removing keys,		
28	accessing and replacing values; traversing dictionaries.		
29	**Design with functions:** hiding redundancy, complexity;		
30	arguments and return values;,		
31	formal vs actual arguments		
32	named arguments, Program structure and design, Recursive functions.		
33	Tutorial		
UNIT-IV File Operations **CO4: To assimilate about File operations, Object Oriented Programming concepts.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
34	**File Operations:** Reading config files in python,	From: 01/07/2021 To: 22/07/2021	Online
35	Writing log files in python,		
36	**Understanding read functions,** read(), readline() and readlines(),		
37	**Understanding write functions,** write() and writelines(),		
38	Manipulating file pointer using seek, Programming using file operations		
39	**Classes and OOP**: classes, objects, attributes and methods;		
40	defining classes; design with classes,		
41	data modeling; persistent storage of objects		
42	Tutorial		
UNIT-V Graphical User Interface, Introduction to HTML **CO5: To assimilate about Inheritance, Polymorphism, Graphical User Interface and HTML.** **TB1: Fundamentals of Python First Programs, Kenneth. A. Lambert, Cengage.**			
43	**OOP, continued:** inheritance, polymorphism, operator overloading (_eq_, _str_, etc);		
44	abstract classes; exception handling, try block		
45	**Graphical user interfaces;** event-driven programming		

	paradigm; tkinter module,	From: 23/07/2021 To: 14/08/2021	Online
46	**creating simple GUI**; buttons, labels, entry fields, dialogs;		
47	widget attributes - sizes, fonts, colors layouts, nested frames		
48	Multithreading, Networks,		
49	Client/Server Programming;		
50	**introduction to HTML**		
51	interacting with remote HTML server,		
52	running html-based queries, downloading pages;		
53	CGI programming, programming a simple CGI form.		
54	Tutorial		

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