SRK INSTITUTE OF TECHNOLOGY, ENIKEPADU, VIJAYAWADA -521108
Approved by AICTE, Affiliated to JNTUK, Kakinada
ISO 9001:2015 Certified Institution
Accredited with NAAC 'A' grade
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

TENTATIVE LESSON PLAN

Course/Code: Mathematics - III / R202101

Year / Semester : II/I **A.Y:** 2022-23

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT – I: VECTOR CALCULUS **CO1: To Interpret the physical meaning of different operators such as gradient, curl and divergence. Estimate the work done against a field, circulation and flux using vector calculus.** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
1	**Vector Differentiation:** Introduction	From: 05/09/2022 To 22/09/2022	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 apply the Laplace transform for solving differential equations** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
22	Laplace Transforms: Definitions, Existence		
23	Laplace Transform of standard functions		

24	Linearity property; Shifting properties Change of scale property	From 23/09/2022 To 12/10/2022	Lecture interspersed with discussions
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: Find or compute the Fourier series of periodic signals. Know and be able to apply integral expressions for the forwards and inverse Fourier transform to a range of non-periodic waveforms.

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

34	Introduction	From 13/10/2022 To 22/10/2022 & From 31/10/2022 To 12/11/2022	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 identify solution methods for partial differential equations that model physical processs.

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

48	Introduction	From	Lecture interspersed
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	14/11/2022 To 26/11/2022	with discussions
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: Identify solution methods for partial differential equations that model physical processes.** **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 28/11/2022 To 17/12/2022	Lecture interspersed with discussions
62	$\sin(ax+by)$; $\cos(ax+by)$		
63	$x^m y^n$		
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 LESSONPLAN:R2021422

Course Title: OBJECT ORIENTED PROGRAMMING WITH C++		
Section:CSE -A	Date :05/9/2022	Page No : 01 of 03
Revision No : 00	Prepared by: Dr.K.CHAITANYA	Approved by : HOD

Tools: Black board, PPTs

UNIT I: Introduction to C++
CO1: Able to realize the concept of Object Oriented Programming using C++
TB: Programming in C++, Ashok N.Kamthane

No. of periods	TOPIC	Date	Mode of Delivery
1.	**Introduction to C++:** Difference between C and C++	5/9/2022	**Lecture interspersed with discussions&& BB**
2.	Evolution of C++	5/9/2022	
3.	The Object Oriented Technology	5/9/2022	
4.	Disadvantage of Conventional Programming	6/9/2022	
5.	Key Concepts of Object Oriented Programming	7/9/2022	
6.	Advantage of OOP	9/9/2022	
7.	Object Oriented Language	10/9/2022	
8.	TUTORIAL CLASS	12/9/2022	
UNIT II: Classes and Objects &Constructors and Destructor **CO 2:** Able to describe the basic concepts of C++ such as classes, objects, Overloading member Function, Constructors and Destructors. **TB:** Programming in C++, Ashok N.Kamthane			
9.	**Classes and Objects &Constructors and Destructor:** Classes in C++	13/9/2022	**Lecture interspersed with discussions&& BB**
10.	Declaring Objects	14/9/2022	
11.	Access Specifiers and their Scope	16/9/2022	
12.	Defining Member Function	16/9/2022	
13.	Overloading Member Function	17/9/2022	
14.	Programs on Member Function	19/9/2022	
15.	Nested class	20/9/2022	
16.	Constructors and Destructors Introduction	21/9/2022	
17.	Characteristics of Constructor and Destructor	23/9/2022	
18.	Application with Constructor	24/9/2022	
19.	Programs on Constructors	26/9/2022	
20.	Constructor with Arguments parameterized Constructor	27/9/2022	
21.	Destructors,	28/9/2022	
22.	Anonymous Objects	30/9/2022	
23.	Programs on Destructor and Anonymous objects	1/10/2022	
24.	TUTORIAL CLASS	10/10/2022	
UNIT III: Operator Overloading and Type Conversion & Inheritance: **CO 3:** Apply the concept of Inheritance. **TB:** Programming in C++, Ashok N.Kamthane			
25.	Overloading Unary Operator	11/10//2022	

26.	Operator Return Type	12/10/2022	**Lecture interspersed with discussions&& BB**
27.	Overloading Binary operator	13/10/2022	
28.	Program on binary overloading	14/10/2022	
29.	Overloading Assignment Operator (=)	17/10/2022	
30.	Rules for Overloading Operators	18/10/2022	
31.	Inheritance, Reusability	19/10/2022	
32.	Types of Inheritance	21/10/2022	
33.	Programs of Single Inheritance	22/10/2022	
34.	Programs of Multi-level Inheritance	24/10/2022	
35.	Programs of Multiple Inheritance	25/10/2022	
36.	Programs of Hybrid Inheritance	28/10/2022	
37.	Programs of Hierarchical Inheritance	29/10/2022	
38.	Virtual Base Classes- Object as a Class Member	1/11/2022	
39.	Programs of virtual base class	2/11/2022	
40.	Abstract Classes	4/11/2022	
41.	Advantages of Inheritance	5/11/2022	
42.	Disadvantages of Inheritance	7/11/2022	
43.	TUTORIAL CLASS	8/11/2022,9/11/2022	
UNIT IV: Pointers & Binding Polymorphisms and Virtual Functions **CO 4:** Able to implement the programs on pointers and virtual function **TB:** Programming in C++, Ashok N.Kamthane			
44.	**Pointers & Binding Polymorphisms and Virtual Functions:** Pointer	12/11/2022	**Lecture interspersed with discussions&& BB**
45.	Features of Pointers	14/11/2022	
46.	Pointer Declaration	15/11/2022	
47.	Pointer to Class	16/11/2022	
48.	Pointer Object	18/11/2022	
49.	Program on Pointers	19/11/2022	
50.	The this Pointer	21/11/2022	
51.	Program on this Pointer	22/11/2022	
52.	Pointer to Derived Classes and Base Class	23/11/2022	
53.	Program on derived and base classes	25/11/2022	
54.	Binding Polymorphisms and Virtual Functions	26/11/2022	
55.	Introduction, Binding in C++	28/11/2022	
56.	Virtual Functions	29/11/2022	
57.	Rules for Virtual Function	30/11/2022	
58.	Program on virtual function	2/12/2022	
59.	Virtual Destructor	3/12/2022	
60.	**Tutorial class**	5/12/2022,6/12/2022	
UNIT V: Generic Programming with Templates & Exception Handling **CO 5:** Able to apply object oriented or non-object-oriented techniques to solve bigger computing problems **TB:** Programming in C++, Ashok N.Kamthane			

61.	**Generic Programming with Templates & Exception Handling:** Definition of class Templates	7/12/2022	**Lecture interspersed with discussions&& BB**
62.	Normal Function Templates	9/12/2022	
63.	Programs on templates	10/12/2022	
64.	Over Loading of Template Function	12/12/2022	
65.	Programs on Template overloading	13/12/2022	
66.	Bubble Sort Using Function Templates	14/12/2022	
67.	Difference between Templates and Macros	16/12/2022	
68.	Linked Lists with Templates	17/12/2022	
69.	Programs on linked list using Templates	19/12/2022	
70.	Exception Handling	20/12/2022	
71.	Principles of Exception Handling	21/12/2022	
72.	**Tutorial class**	23/12/2022	

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TENTATIVE LESSONPLAN

TENTATIVE LESSON PLAN: R2021052

Course Title: OPERATING SYSTEMS		
Section :CSE-A	**Date :5/9/2022**	**Page No : 01 of 03**
Revision No : 01	**Prepared by:K. Jyothi**	**Approved by : HOD**

Tools: Black board, PPTs

UNIT 1: Operating Systems Overview, System Structures.

CO1 : To understand the internal operation of modern operating systems from different views and system calls generated inside the system from user and kernel.

TB: Silberschatz A, Galvin P B, and Gagne G, "**Operating System Concepts**", 9th edition, Wiley, 2013.

No. of periods	TOPIC	Expected Date	Mode of Delivery
1.	Introduction to Operating Systems and Overview,	**FROM: 5-09-2022 TO 20-09-2022**	**Black Board & PPT**
2.	Operating system functions		
3.	Operating system structure,		
4.	Operating systems operations,		
5.	Computing environments, Open-Source Operating Systems.		
6.	System Structures: Operating System Services,		
7.	User and Operating-System Interface,		
8.	Systems calls,		
9.	Types of System Calls,		
10.	system programs,		
11.	operating system structure,		
12.	operating system debugging,		
13.	System Boot, Tutorial		

UNIT 2:Process Concept, Process Scheduling, IPC.

CO2: To define, explain, processes, threads, CPU scheduling algorithms, Inter Process Communication between processes, and IPC Problems.

TB: Tanenbaum A S, "**Modern Operating Systems"**, 3rd edition, Pearson Education, 2008. (forInterprocess Communication and File systems.)

No. of periods	TOPIC	Date	Mode of Delivery
14.	Process Concept: Process scheduling	**FROM: 21-09-2022 TO: 12-10-2022**	
15.	Operations on processes,		
16.	Inter-process communication,		
17.	Communication in client server systems.		
18.	Multithreaded Programming: Multithreading models,		
19.	Thread libraries, Threading issues.		

20.	Process Scheduling: Basic concepts,		**Black Board & PPT**
21.	Scheduling criteria,		
22.	Scheduling algorithms,		
23.	Multiple processor scheduling, Thread scheduling.		
24.	Inter-process Communication: Race conditions, Critical Regions,		
25.	Mutual exclusion with busy waiting, Sleep and wakeup,		
26.	Semaphores,		
27.	Mutexes, Monitors,		
28.	Message passing, Barriers,		
29.	Classical IPC Problems - Dining philosophers problem,		
30.	Classical IPC Problems -Readers and writers problem.		
31.	Tutorial		

UNIT 3:Memory-Management Strategies, Virtual Memory Management.

CO 3: To understand the memory management, how to create dynamic memory and different memory allocation techniques.
TB: Silberschatz A, Galvin P B, and Gagne G, "**Operating System Concepts**", 9th edition, Wiley, 2013

No. of periods	TOPIC	Date	Mode of Delivery
32.	Memory-Management Strategies: Introduction,	**FROM: 13-10-2022 TO: 11-11-2022**	**Black Board & PPT**
33.	Swapping,		
34.	Contiguous memory allocation,		
35.	Paging,		
36.	Segmentation.		
37.	Virtual Memory Management: Introduction, Demand paging,		
38.	Copy on-write,		
39.	Page replacement,		
40.	Page replacement algorithms		
41.	Frame allocation, Thrashing,		
42.	Memory-mapped files, Kernel memory allocation.		
43.	Tutorial		

UNIT 4: Deadlocks, File Systems, Secondary-Storage Structure.

CO4: To understand Deadlock and recovery, Input Output Management in file system and use of Device Driver and Secondary Storage (Disk) Mechanism.
TB: Silberschatz A, Galvin P B, and Gagne G, "**Operating System Concepts**", 9th edition, Wiley, 2013

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No. of periods	TOPIC	Date	Mode of Delivery
44.	Deadlocks: Resources, Conditions for resource deadlocks,		
45.	Deadlock avoidance		
46.	Deadlock prevention		
47.	Deadlock detection and recovery and Ostrich algorithm,		
48.	Deadlock prevention.		
49.	File Systems: Files,	**FROM:**	
50.	Directories,		
51.	File system implementation,	**14-11-2022**	**Black Board & PPT**
52.	File- Management and optimization.		
53.	Secondary-Storage Structure: Overview of disk structure,	**TO:**	
54.	Disk Attachment, Disk scheduling	**30-11-2022**	
55.	Disk scheduling algorithms		
56.	RAID Structure,		
57.	Stable storage implementation.		
58.	Tutorial		

UNIT 5: System Protection, System Security

CO5: To analyze Security and Protection Mechanism in Operating System from various views.

TB: Silberschatz A, Galvin P B, and Gagne G, "**Operating System Concepts**", 9th edition, Wiley, 2013

No. of periods	TOPIC	Date	Mode of Delivery
59.	System Protection: Goals of protection,		
60.	Principles and domain of protection,		
61.	Access matrix,		
62.	Access control, Revocation of access rights.		
63.	System Security: Introduction,	**FROM:**	
64.	Program threats	**1-12-2022**	**Black Board & PPT**
65.	System and network threats,		
66.	Cryptography for security,	**TO:**	
67.	User authentication,	**17-12-2022**	
68.	Implementing security defenses,		
69.	Firewall to protect systems and networks,		
70.	Computer security classification,		
71.	Tutorial		

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TENTATIVE LESSONPLAN

TENTATIVE LESSON PLAN: R2021053

Course Title: SOFTWARE ENGINEERING		
Section :CSE-A	Date :05/09/2022	Page No : 01 of 03
Revision No : 01	Prepared by:D.Sailaja	Approved by : HOD

Tools: Black board, PPTs

UNIT 1: Software Engineering Overview, Process Models

CO1 :GiveexposuretophasesofSoftwareDevelopment,commonprocessmodelsincluding Waterfall, and the Unified Process, and hands-on experience with elementsoftheagileprocess.
TB:"SoftwareEngineeringapractitioner'sapproach",RogerS.Pressman,SeventhEdition,McGraw HillHigherEducation.

No. of periods	TOPIC	Expected Date	Mode of Delivery
1.	TheNatureofSoftware	**FROM: 05-09-2022 TO 22-09-2022**	**Black Board & PPT**
2.	TheUniqueNatureofWebApps		
3.	Software Engineering- A Layered Technology		
4.	The Software Process		
5.	Software Engineering Practice		
6.	Software Myths		
7.	A Generic Process Model		
8.	Process Assessment and Improvement		
9.	Prescriptive Process Models		
10.	Specialized Process Models		
11.	The Unified Process		
12.	Personal and Team Process Models		
13.	Process Technology		

UNIT 2:Agile Process, Requirements Engineering

CO2: Give exposure to a variety of Software Engineering practices such as requirementsanalysis and specification, code analysis, code debugging, testing, traceability, andversioncontrol.
TB: "SoftwareEngineering",IanSommerville,NinthEdition,Pearson.

No. of periods	TOPIC	Date	Mode of Delivery
14.	Agility, Agility and the Cost of Change		**Black Board**

15.	Agile Process	**FROM: 23-09-2022 TO: 11-10-2022**	**& PPT**
16.	Extreme Programming(XP)		
17.	Other Agile Process Models		
18.	A toolset for the Agile Process		
19.	Software Engineering Knowledge		
20.	Core Principles		
21.	Principles that Guide Each Framework Activity		
22.	Requirements Engineering		
23.	Establishing the Groundwork		
24.	Eliciting Requirements		
25.	Developing Use Cases		
26.	Building the Requirements Model		
27.	Negotiating Requirements		
28.	Validating Requirements		

UNIT 3:Requirements Model, Requirements Modeling Strategies

CO 3: GiveexposuretoSoftwareDesigntechniques
TB: "SoftwareEngineeringapractitioner'sapproach",RogerS.Pressman,Seventh Edition,McGraw HillHigherEducation.

No. of periods	TOPIC	Date	Mode of Delivery
29.	Requirements Analysis	**FROM: 12-10-2022 TO: 31-10-2022**	**Black Board & PPT**
30.	Scenario-Based Modeling		
31.	UML Models that Supplement the Use Case		
32.	Data Modeling Concepts		
33.	Class-Based Modeling		
34.	Requirements Modeling Strategies		
35.	Flow-Oriented Modeling		
36.	Creating a Behavioral Model		
37.	Patterns for Requirements Modeling		
38.	Requirements Modeling for WebApps		

UNIT 4: Design, Architectural Mapping using Data Flow

CO4: Give exposure to Design concepts, Architectural Designs through the components and component-based development.

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TB: "SoftwareEngineering",IanSommerville,NinthEdition,Pearson.

No. of periods	TOPIC	Date	Mode of Delivery
39.	Design within the context of the Software Engineering	**FROM: 01-11-2022 TO: 25-11-2022**	**Black Board & PPT**
40.	The Design Process		
41.	Design Concepts		
42.	The Design Model		
43.	Software Architecture		
44.	Architectural Genres		
45.	Architectural Styles		
46.	Assessing Alternative Architectural Designs		
47.	Architectural Mapping using Data Flow		
48.	Components		
49.	Designing Class Based Components		
50.	Conducting Component-Level Design		
51.	Component-Level Design for WebApps		
52.	Designing Traditional Components		
53.	Component-Based Development		

UNIT 5: The Golden Rules, SQA, Strategic Approaches

CO5: To analyzeInterfaces, Webapp Interface Design and SQA for Test Strategies such as internal and externa views of testing.

TB: "SoftwareEngineeringapractitioner'sapproach",RogerS.Pressman,Seventh Edition,McGraw HillHigherEducation.

No. of periods	TOPIC	Date	Mode of Delivery
54.	The Golden Rules	**FROM: 26-11-2022 TO:**	**Black Board & PPT**
55.	User Interface Analysis and Design		
56.	Interface Analysis		
57.	Interface Design Steps		
58.	WebApp Interface Design		
59.	Design Evaluation		
60.	Elements of Software Quality Assurance		
61.	SQA Tasks		
62.	Goals and Metrics		
63.	Statistical SQA		
64.	Software Reliability		
65.	A Strategic approach to Software Testing		
66.	Strategic Issues		

67.	Test Strategies for Conventional Software	17-12-2022	
68.	Test Strategies for Object Oriented Software		
69.	Test Strategies for WebApps		
70.	Validation Testing		
71.	System Testing		
72.	The Art of Debugging		
73.	Software Testing Fundamentals		
74.	Internal and External views of Testing		
75.	White-Box Testing		
76.	Basis Path Testing		

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TENTATIVE LESSON PLAN: R2021054

MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE

Course Title: MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE		
Section: CSE -A	Date : 05-09-2022	Page No : 01 of 03
Revision No :00	Prepared By: V.V.M.Srividya	Approved By : HOD
Tools: Black board. PPT		

No. of Periods	TOPIC	DATE	Mode of Delivery
UNIT- I : MATHEMATICAL LOGIC **CO1: Student will be able to demonstrate skills in solving mathematical problems.** TB: Discrete mathematics with applications to computer science, J.P.Trembly, p.Manohar ,Tata mc graw hill			
1.	Statements, Notations, Connectives, Well defined Formulas	05-09-2022	Lecture interspersed with discussions
2.	Truth tables, Tautologies	06-09-2022 06-09-2022	
3.	Equivalence of formulas	07-09-2022	
4.	Duality law, Tautological Implications	09-09-2022	
5.	Normal forms	12-09-2022 13-09-2022	
6.	Tutorial class	14-09-2022	
7.	Theory of inference for statement calculus	16-09-2022	
8.	Consistency of premises	17-09-2022	
9.	Indirect method of proof	19-09-2022	
10.	Predicative Logic, statement functions	20-09-2022	
11.	Tutorial class	20-09-2022	
12.	Variables and Quantifiers, free & bound variables	21-09-2022	
13.	Inference theory of predicate calculus Formulas	23-09-2022 24-09-2022	
UNIT-II: SET THEORY & ALGEBRAIC STRUCTURES **CO2: Student will be able to demonstrate knowledge of mathematical modeling and proficiency in using mathematical software. Students will be able to manipulate and analyze data numerically using Appropriate software.** TB: Discrete mathematics with applications to computer science, J.P.Trembly,p.Manohar,Tata mc graw hill			

14.	Introduction to sets, operations on Binary sets	26-09-2022	Lecture interspersed with discussions
15.	Principle of Inclusion and Exclusion	27-09-2022	
16.	Relations, Properties of binary relations	27-09-2022	
17.	Relation matrix and Digraph	28-09-2022	
18.	Partition and covering, transitive closure	30-09-2022	
19.	Tutorial class	01-10-2022	
20.	Equivalence relations, compatibility relations,	03-10-2022	
21.	Partial ordering relations, Hasse diagram	04-10-2022	
22.	Bijective Functions and composition of functions	04-10-2022	
23.	Inverse functions, recursive functions, permutation functions	07-10-2022	
24.	Equivalence relations, compatibility relations,	10-10-2022	
25.	Algebraic structures: algebraic systems, examples and properties	11-10-2022	
26.	Semi groups and monoids, group definitions, examples.	11-10-2022	
27.	Homomorphism, Isomorphism	12-10-2022	
28.	groups, sub group definitions, examples	14-10-2022	
29.	Group, Subgroup, Abelian Group, Homomorphism, Isomorphism		
30.	Tutorial class	15-10-2022	
UNIT-3: COMBINATORICS & NUMBER THEORY **CO3: Student will be able to communicate effectively mathematical ideas results verbally or in Wrting** TB: Discrete mathematics with applications to computer science, J.P.Trembly,p.Manohar,Tata mc graw hill			
31.	Basics of counting, permutations	17-10-2022	Lecture interspersed with discussions
32.	Permutations with Repetitions	18-10-2022	
33.	Circular Permutations, Restricted Permutations	18-10-2022	
34.	Combinations, Restricted Combinations	19-10-2022	
35.	Tutorial Class	21-10-2022	
36.	Generating functions of permutations and combinations	22-10-2022	
37.	Binomial and multinomial coefficients	25-10-2022	
38.	Binomial and multinomial theorems	25-10-2022	
39.	Coloring and chromatic numbers	26-10-2022	
40.	Pigeonhole Principle and its allpications	28-10-2022	
41.	Revision	29-10-2022	

42.	Number Theory: Properties of integers, division theorem	31-10-2022 01-11-2022	
43.	GCD, Euclidean algorithm	01-11-2022 02-11-2022	
44.	LCM, Testing for prime numbers	03-11-2022 04-11-2022	
45.	The fundamental theorem of Arithmetic	05-11-2022 07-11-2022	
46.	Modular Arithmetic, Euler and Fermat's theorems	08-11-2022 08-11-2022 09-11-2022	
47.	Tutorial class	11-11-2022	

UNIT-4: RECURRENCE RELATIONS

CO4: Student will be able to manipulate and analyze data generatically and recurrencingly

TB: Discrete mathematics with applications to computer science, J.P.Trembly,p.Manohar,Tata mc graw hill

48.	Generating Functions	14-11-2022	Lecture interspersed with discussions
49.	Function of Sequences	15-11-2022	
50.	Partial Fractions	15-11-2022	
51.	Coefficient of generating functions	16-11-2022	
52.	Recurrence relations	18-11-2022	
53.	Formulation as recurrence relations	19-11-2022	
54.	Recurrence relations by substitution	21-11-2022	
55.	Recurrence relations by Generating functions	22-11-2022	
56.	Tutorial class	22-11-2022	
57.	Recurrence relations by method of characteristics roots	23-11-2022 25-11-2022	
58.	Inhomogeneous Recurrence relations	26-11-2022 28-11-2022	
59.	Recurrence relations by Generating functions	29-11-2022 29-12-2022	

		30-11-2022	

UNIT-5: GRAPH THEORY

CO5: Student will be able to manipulate and analyze data graphically using Appropriate software.

TB: Discrete mathematics with applications to computer science, J.P.Trembly,p.Manohar,Tata mc graw hill

60.	Basic concepts of graphs, sub graphs	02-12-2022	Lecture interspersed with discussions
61.	Representation of graphs: Adjacency, Incidence matrices	03-12-2022	
62.	Isomorphic graphs	05-12-2022	
63.	Paths.circuits, Elerian and Hamiltonian graphs	06-12-2022 06-12-2022	
64.	Multi graphs, Problems	07-12-2022	
65.	Tutorial class	09-12-2022	
66.	Planar graphs, Euler's formula	12-12-2022	
69.	Chromatic numbers	13-12-2022	
70.	Spanning trees, Algorithms for spanning trees.	13-12-2022	
71.	Breadth first search algorithms	14-12-2022	
72.	Depth first search algorithm	16-12-2022	
73.	Krushkal,s algorithm	17-12-2022	
74.	Prims algorithm		

V.V.M. Srividya.

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ISO 9001:2015 Certified Institution
Accredited with NAAC 'A' grade
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

TENTATIVE LESSON PLAN

Course/Code: Mathematics - III / R202101

Year / Semester : II/I

A.Y: 2022-23

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT – I: VECTOR CALCULUS **CO1: To Interpret the physical meaning of different operators such as gradient, curl and divergence. Estimate the work done against a field, circulation and flux using vector calculus.** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
1	**Vector Differentiation:** Introduction	From: 05/09/2022 To 22/09/2022	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 apply the Laplace transform for solving differential equations** **TB:" Engineering Mathematics", Dr. T.K.V.Iyengar; S.Chand publications**			
22	Laplace Transforms: Definitions, Existence		
23	Laplace Transform of standard functions		

24	Linearity property; Shifting properties Change of scale property	From 23/09/2022 To 12/10/2022	Lecture interspersed with discussions
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: Find or compute the Fourier series of periodic signals. Know and be able to apply integral expressions for the forwards and inverse Fourier transform to a range of non-periodic waveforms.

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

34	Introduction	From 13/10/2022 To 22/10/2022 & From 31/10/2022 To 12/11/2022	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 identify solution methods for partial differential equations that model physical processs.

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

48	Introduction	From	Lecture interspersed
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	14/11/2022 To 26/11/2022	with discussions
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: Identify solution methods for partial differential equations that model physical processes.** **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 28/11/2022 To 17/12/2022	Lecture interspersed with discussions
62	$\sin(ax+by)$; $\cos(ax+by)$		
63	$x^m y^n$		
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 LESSONPLAN:R2021422

Course Title: OBJECT ORIENTED PROGRAMMING WITH C++		
Section:CSE -B	Date :05/9/2022	Page No : 01 of 02
Revision No : 00	Prepared by: Dr.K.CHAITANYA	Approved by : HOD

Tools: Black board, PPTs

UNIT I: Introduction to C++
CO1: Able to realize the concept of Object Oriented Programming using C++
TB: Programming in C++, Ashok N.Kamthane

No. of periods	TOPIC	Date	Mode of Delivery
1.	**Introduction to C++:** Difference between C and C++	5/9/2022	**Lecture interspersed with discussions&& BB**
2.	Evolution of C++	5/9/2022	
3.	The Object Oriented Technology	5/9/2022	
4.	Disadvantage of Conventional Programming	6/9/2022	
5.	Key Concepts of Object Oriented Programming	6/9/2022	
6.	Advantage of OOP	6/9/2022	
7.	Object Oriented Language	6/9/2022	
8.	TUTORIAL CLASS	7/9/2022	
UNIT II: Classes and Objects &Constructors and Destructor **CO 2:** Able to describe the basic concepts of C++ such as classes, objects, Overloading member Function, Constructors and Destructors. **TB:** Programming in C++, Ashok N.Kamthane			
9.	**Classes and Objects &Constructors and Destructor:** Classes in C++	8/9/2022	**Lecture interspersed with discussions&& BB**
10.	Declaring Objects	8/9/2022	
11.	Access Specifiers and their Scope	8/9/2022	
12.	Defining Member Function	9/9/2022	
13.	Overloading Member Function	9/9/2022	
14.	Programs on Member Function	12/9/2022	
15.	Nested class	13/9/2022	
16.	Constructors and Destructors Introduction	14/9/2022	
17.	Characteristics of Constructor and Destructor	15/9/2022	
18.	Application with Constructor	16/9/2022	
19.	Programs on Constructors	19/9/2022	
20.	Constructor with Arguments parameterized Constructor	20/9/2022	
21.	Destructors,	21/9/2022	
22.	Anonymous Objects	23/9/2022	
23.	Programs on Destructor and Anonymous objects	26/9/2022	
24.	TUTORIAL CLASS	27/9/2022, 28/9/2022	
UNIT III: Operator Overloading and Type Conversion & Inheritance: **CO 3:** Apply the concept of Inheritance. **TB:** Programming in C++, Ashok N.Kamthane			
25.	Overloading Unary Operator	29/9/2022	

26.	Operator Return Type	30/9/2022	**Lecture interspersed with discussions&& BB**
27.	Overloading binary operator	10/10/2022	
28.	Program on binary operator	11/10/2022	
29.	Overloading Assignment Operator (=)	12/10/2022	
30.	Rules for Overloading Operators	13/10/2022	
31.	Inheritance, Reusability	14/10/2022	
32.	Types of Inheritance	17/10/2022	
33.	Programs of Single Inheritance	18/10/2022	
34.	Programs of Multi-level Inheritance	19/10/2022	
35.	Programs of Multiple Inheritance	20/10/2022	
36.	Programs of Hybrid Inheritance	21/10/2022	
37.	Programs of Hierarchical Inheritance	1/11/2022	
38.	Virtual Base Classes- Object as a Class Member	2/11/2022	
39.	Programs of virtual base class	3/11/2022	
40.	Abstract Classes	4/11/2022	
41.	Advantages of Inheritance	7/11/20222	
42.	Disadvantages of Inheritance	8/11/2022	
43.	TUTORIAL CLASS	9/11/2022,10/11/2022	
UNIT IV: Pointers & Binding Polymorphisms and Virtual Functions **CO 4:** Able to implement the programs on pointers and virtual function **TB:** Programming in C++, Ashok N.Kamthane			
44.	**Pointers & Binding Polymorphisms and Virtual Functions:** Pointer	11/11/2022	**Lecture interspersed with discussions&& BB**
45.	Features of Pointers	14/11/2022	
46.	Pointer Declaration	15/11/2022	
47.	Pointer to Class	16/11/2022	
48.	Pointer Object	17/11/2022	
49.	Program on Pointers	18/11/2022	
50.	The this Pointer	21/11/2022	
51.	Program on this Pointer	22/11/2022	
52.	Pointer to Derived Classes and Base Class	23/11/2022	
53.	Program on derived and base classes	24/11/2022	
54.	Binding Polymorphisms and Virtual Functions	25/11/2022	
55.	Introduction, Binding in C++	28/11/2022	
56.	Virtual Functions	29/11/2022	
57.	Rules for Virtual Function	30/11/2022	
58.	Program on virtual function	1/12/2022	
59.	Virtual Destructor	2/12/2022	
60.	**Tutorial class**	5/12/2022, 6/12/2022	
UNIT V: Generic Programming with Templates & Exception Handling **CO 5:** Able to apply object oriented or non-object-oriented techniques to solve bigger computing problems **TB:** Programming in C++, Ashok N.Kamthane			

61.	**Generic Programming with Templates & Exception Handling:** Definition of class Templates	7/12/2022	**Lecture interspersed with discussions&& BB**
62.	Normal Function Templates	8/12/2022	
63.	Programs on templates	9/12/2022	
64.	Over Loading of Template Function	12/12/2022	
65.	Programs on Template overloading	9/12/2022	
66.	Bubble Sort Using Function Templates	12/12/2022	
67.	Difference between Templates and Macros	13/12/2022	
68.	Linked Lists with Templates	14/12/2022	
69.	Programs on linked list using Templates	15/12/2022	
70.	Exception Handling	16/12/2022	
71.	Principles of Exception Handling	19/12/2022	
72.	**Tutorial class**	20/12/2022,21/12/2022	

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TENTATIVE LESSONPLAN

TENTATIVE LESSON PLAN: R2021052

Course Title: OPERATING SYSTEMS		
Section :CSE-B	**Date : 5/9/2022**	**Page No : 01 of 03**
Revision No : 01	**Prepared by:K. Jyothi**	**Approved by : HOD**

Tools: Black board, PPTs

UNIT 1: Operating Systems Overview, System Structures.

CO1 : To understand the internal operation of modern operating systems from different views and system calls generated inside the system from user and kernel.

TB:Silberschatz A, Galvin P B, and Gagne G, **"Operating System Concepts"**, 9th edition, Wiley, 2013.

No. of periods	TOPIC	Expected Date	Mode of Delivery
1.	Introduction to Operating Systems and Overview,	**FROM: 5-09-2022 TO 20-09-2022**	**Black Board & PPT**
2.	Operating system functions		
3.	Operating system structure,		
4.	Operating systems operations,		
5.	Computing environments, Open-Source Operating Systems.		
6.	System Structures: Operating System Services,		
7.	User and Operating-System Interface,		
8.	Systems calls,		
9.	Types of System Calls,		
10.	system programs,		
11.	operating system structure,		
12.	operating system debugging,		
13.	System Boot, Tutorial		

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TENTATIVE LESSONPLAN

UNIT 2:Process Concept, Process Scheduling, IPC.

CO2: To define, explain, processes, threads, CPU scheduling algorithms, Inter Process Communication between processes, and IPC Problems.

TB: Tanenbaum A S, "**Modern Operating Systems**", 3rd edition, Pearson Education, 2008. (forInterprocess Communication and File systems.)

No. of periods	TOPIC	Date	Mode of Delivery
14.	Process Concept: Process scheduling		
15.	Operations on processes,	**FROM:**	
16.	Inter-process communication,	**21-09-2022**	
17.	Communication in client server systems.		
18.	Multithreaded Programming: Multithreading models,	**TO:**	
19.	Thread libraries, Threading issues.	**12-10-2022**	
20.	Process Scheduling: Basic concepts,		
21.	Scheduling criteria,		
22.	Scheduling algorithms,		**Black Board & PPT**
23.	Multiple processor scheduling, Thread scheduling.		
24.	Inter-process Communication: Race conditions, Critical Regions,		
25.	Mutual exclusion with busy waiting, Sleep and wakeup,		
26.	Semaphores,		
27.	Mutexes, Monitors,		
28.	Message passing, Barriers,		
29.	Classical IPC Problems - Dining philosophers problem,		
30.	Classical IPC Problems -Readers and writers problem.		
31.	Tutorial		

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TENTATIVE LESSONPLAN

UNIT 3:Memory-Management Strategies, Virtual Memory Management.

CO 3: To understand the memory management, how to create dynamic memory and different memory allocation techniques.

TB: Silberschatz A, Galvin P B, and Gagne G, "**Operating System Concepts**", 9th edition, Wiley, 2013

No. of periods	TOPIC	Date	Mode of Delivery
32.	Memory-Management Strategies: Introduction,		
33.	Swapping,		
34.	Contiguous memory allocation,	**FROM:**	
35.	Paging,		
36.	Segmentation.		**Black Board & PPT**
37.	Virtual Memory Management: Introduction, Demand paging,	**13-10-2022**	
38.	Copy on-write,		
39.	Page replacement,	**TO:**	
40.	Page replacement algorithms	**11-11-2022**	
41.	Frame allocation, Thrashing,		
42.	Memory-mapped files, Kernel memory allocation.		
43.	Tutorial		

UNIT 4: Deadlocks, File Systems, Secondary-Storage Structure.

CO4: To understand Deadlock and recovery, Input Output Management in file system and use of Device Driver and Secondary Storage (Disk) Mechanism.

TB: Silberschatz A, Galvin P B, and Gagne G, "**Operating System Concepts**", 9th edition, Wiley, 2013

No. of periods	TOPIC	Date	Mode of Delivery

44.	Deadlocks: Resources, Conditions for resource deadlocks,	FROM: 14-11-2022 TO: 30-11-2022	Black Board & PPT
45.	Deadlock avoidance		
46.	Deadlock prevention		
47.	Deadlock detection and recovery and Ostrich algorithm,		
48.	Deadlock prevention.		
49.	File Systems: Files,		
50.	Directories,		
51.	File system implementation,		
52.	File- Management and optimization.		
53.	Secondary-Storage Structure: Overview of disk structure,		
54.	Disk Attachment, Disk scheduling		
55.	Disk scheduling algorithms		
56.	RAID Structure,		
57.	Stable storage implementation.		
58.	Tutorial		

UNIT 5: System Protection, System Security

CO5: To analyze Security and Protection Mechanism in Operating System from various views.

TB: Silberschatz A, Galvin P B, and Gagne G, "**Operating System Concepts**", 9th edition, Wiley, 2013

No. of periods	TOPIC	Date	Mode of Delivery
59.	System Protection: Goals of protection,	FROM:	Black Board
60.	Principles and domain of protection,		
61.	Access matrix,		
62.	Access control, Revocation of access rights.		
63.	System Security: Introduction,		

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TENTATIVE LESSONPLAN

64.	Program threats	1-12-2022 TO: 17-12-2022	& PPT
65.	System and network threats,		
66.	Cryptography for security,		
67.	User authentication,		
68.	Implementing security defenses,		
69.	Firewall to protect systems and networks,		
70.	Computer security classification,		
71.	Tutorial		

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TENTATIVE LESSONPLAN

TENTATIVE LESSON PLAN: R2021053

Course Title: SOFTWARE ENGINEERING		
Section :CSE-B	Date :05/09/2022	Page No : 01 of 03
Revision No : 01	Prepared by:D.Sailaja	Approved by : HOD

Tools: Black board, PPTs

UNIT 1: Software Engineering Overview, Process Models

CO1 :GiveexposuretophasesofSoftwareDevelopment,commonprocessmodelsincluding Waterfall, and the Unified Process, and hands-on experience with elementsoftheagileprocess.
TB:"SoftwareEngineeringapractitioner'sapproach",RogerS.Pressman,SeventhEdition,McGraw HillHigherEducation.

No. of periods	TOPIC	Expected Date	Mode of Delivery
1.	TheNatureofSoftware	**FROM: 05-09-2022 TO 22-09-2022**	**Black Board & PPT**
2.	TheUniqueNatureofWebApps		
3.	Software Engineering- A Layered Technology		
4.	The Software Process		
5.	Software Engineering Practice		
6.	Software Myths		
7.	A Generic Process Model		
8.	Process Assessment and Improvement		
9.	Prescriptive Process Models		
10.	Specialized Process Models		
11.	The Unified Process		
12.	Personal and Team Process Models		
13.	Process Technology		

UNIT 2:Agile Process, Requirements Engineering

CO2: Give exposure to a variety of Software Engineering practices such as requirementsanalysis and specification, code analysis, code debugging, testing, traceability, andversioncontrol.
TB: "SoftwareEngineering",IanSommerville,NinthEdition,Pearson.

No. of periods	TOPIC	Date	Mode of Delivery
14.	Agility, Agility and the Cost of Change		**Black Board**

15.	Agile Process	FROM: 23-09-2022 TO: 11-10-2022	& PPT
16.	Extreme Programming(XP)		
17.	Other Agile Process Models		
18.	A toolset for the Agile Process		
19.	Software Engineering Knowledge		
20.	Core Principles		
21.	Principles that Guide Each Framework Activity		
22.	Requirements Engineering		
23.	Establishing the Groundwork		
24.	Eliciting Requirements		
25.	Developing Use Cases		
26.	Building the Requirements Model		
27.	Negotiating Requirements		
28.	Validating Requirements		

UNIT 3:Requirements Model, Requirements Modeling Strategies

CO 3: GiveexposuretoSoftwareDesigntechniques
TB: "SoftwareEngineeringapractitioner'sapproach",RogerS.Pressman,Seventh Edition,McGraw HillHigherEducation.

No. of periods	TOPIC	Date	Mode of Delivery
29.	Requirements Analysis	FROM: 12-10-2022 TO: 31-10-2022	Black Board & PPT
30.	Scenario-Based Modeling		
31.	UML Models that Supplement the Use Case		
32.	Data Modeling Concepts		
33.	Class-Based Modeling		
34.	Requirements Modeling Strategies		
35.	Flow-Oriented Modeling		
36.	Creating a Behavioral Model		
37.	Patterns for Requirements Modeling		
38.	Requirements Modeling for WebApps		

UNIT 4: Design, Architectural Mapping using Data Flow

CO4: Give exposure to Design concepts, Architectural Designs through the components and component-based development.

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TB: "SoftwareEngineering",IanSommerville,NinthEdition,Pearson.

No. of periods	TOPIC	Date	Mode of Delivery
39.	Design within the context of the Software Engineering	**FROM: 01-11-2022 TO: 25-11-2022**	**Black Board & PPT**
40.	The Design Process		
41.	Design Concepts		
42.	The Design Model		
43.	Software Architecture		
44.	Architectural Genres		
45.	Architectural Styles		
46.	Assessing Alternative Architectural Designs		
47.	Architectural Mapping using Data Flow		
48.	Components		
49.	Designing Class Based Components		
50.	Conducting Component-Level Design		
51.	Component-Level Design for WebApps		
52.	Designing Traditional Components		
53.	Component-Based Development		

UNIT 5: The Golden Rules, SQA, Strategic Approaches

CO5: To analyzeInterfaces, Webapp Interface Design and SQA for Test Strategies such as internal and externa views of testing.

TB: "SoftwareEngineeringapractitioner'sapproach",RogerS.Pressman,Seventh Edition,McGraw HillHigherEducation.

No. of periods	TOPIC	Date	Mode of Delivery
54.	The Golden Rules	**FROM: 26-11-2022 TO:**	**Black Board & PPT**
55.	User Interface Analysis and Design		
56.	Interface Analysis		
57.	Interface Design Steps		
58.	WebApp Interface Design		
59.	Design Evaluation		
60.	Elements of Software Quality Assurance		
61.	SQA Tasks		
62.	Goals and Metrics		
63.	Statistical SQA		
64.	Software Reliability		
65.	A Strategic approach to Software Testing		
66.	Strategic Issues		

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TENTATIVE LESSONPLAN

67.	Test Strategies for Conventional Software	17-12-2022	
68.	Test Strategies for Object Oriented Software		
69.	Test Strategies for WebApps		
70.	Validation Testing		
71.	System Testing		
72.	The Art of Debugging		
73.	Software Testing Fundamentals		
74.	Internal and External views of Testing		
75.	White-Box Testing		
76.	Basis Path Testing		

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TENTATIVE LESSON PLAN: R2021054

MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE

Course Title: MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE		
Section: CSE -B	Date : 05-09-2022	Page No : 01 of 03
Revision No :00	Prepared By: V.V.M.Srividya	Approved By : HOD
Tools: Black board. PPT		

No. of Periods	TOPIC	DATE	Mode of Delivery
UNIT- I : MATHEMATICAL LOGIC **CO1: Student will be able to demonstrate skills in solving mathematical problems.** TB: Discrete mathematics with applications to computer science, J.P.Trembly, p.Manohar ,Tata mc graw hill			
1.	Statements, Notations, Connectives, Well defined Formulas	05-09-2022	Lecture interspersed with discussions
2.	Truth tables, Tautologies	06-09-2022 06-09-2022	
3.	Equivalence of formulas	07-09-2022	
4.	Duality law, Tautological Implications	09-09-2022	
5.	Normal forms	12-09-2022 13-09-2022	
6.	Tutorial class	14-09-2022	
7.	Theory of inference for statement calculus	16-09-2022	
8.	Consistency of premises	17-09-2022	
9.	Indirect method of proof	19-09-2022	
10.	Predicative Logic, statement functions	20-09-2022	
11.	Tutorial class	20-09-2022	
12.	Variables and Quantifiers, free & bound variables	21-09-2022	
13.	Inference theory of predicate calculus Formulas	23-09-2022 24-09-2022	
UNIT-II: SET THEORY & ALGEBRAIC STRUCTURES **CO2: Student will be able to demonstrate knowledge of mathematical modeling and proficiency in using mathematical software. Students will be able to manipulate and analyze data numerically using Appropriate software.** TB: Discrete mathematics with applications to computer science, J.P.Trembly,p.Manohar,Tata mc graw hill			

14.	Introduction to sets, operations on Binary sets	26-09-2022	Lecture interspersed with discussions
15.	Principle of Inclusion and Exclusion	27-09-2022	
16.	Relations, Properties of binary relations	27-09-2022	
17.	Relation matrix and Digraph	28-09-2022	
18.	Partition and covering, transitive closure	30-09-2022	
19.	Tutorial class	01-10-2022	
20.	Equivalence relations, compatibility relations,	03-10-2022	
21.	Partial ordering relations, Hasse diagram	04-10-2022	
22.	Bijective Functions and composition of functions	04-10-2022	
23.	Inverse functions, recursive functions, permutation functions	07-10-2022	
24.	Equivalence relations, compatibility relations,	10-10-2022	
25.	Algebraic structures: algebraic systems, examples and properties	11-10-2022	
26.	Semi groups and monoids, group definitions, examples.	11-10-2022	
27.	Homomorphism, Isomorphism	12-10-2022	
28.	groups, sub group definitions, examples	14-10-2022	
29.	Group, Subgroup, Abelian Group, Homomorphism, Isomorphism		
30.	Tutorial class	15-10-2022	
UNIT-3: COMBINATORICS & NUMBER THEORY **CO3: Student will be able to communicate effectively mathematical ideas results verbally or in Wrting** TB: Discrete mathematics with applications to computer science, J.P.Trembly,p.Manohar,Tata mc graw hill			
31.	Basics of counting, permutations	17-10-2022	Lecture interspersed with discussions
32.	Permutations with Repetitions	18-10-2022	
33.	Circular Permutations, Restricted Permutations	18-10-2022	
34.	Combinations, Restricted Combinations	19-10-2022	
35.	Tutorial Class	21-10-2022	
36.	Generating functions of permutations and combinations	22-10-2022	
37.	Binomial and multinomial coefficients	25-10-2022	
38.	Binomial and multinomial theorems	25-10-2022	
39.	Coloring and chromatic numbers	26-10-2022	
40.	Pigeonhole Principle and its allpications	28-10-2022	
41.	Revision	29-10-2022	

42.	Number Theory: Properties of integers, division theorem	31-10-2022 01-11-2022	
43.	GCD, Euclidean algorithm	01-11-2022 02-11-2022	
44.	LCM, Testing for prime numbers	03-11-2022 04-11-2022	
45.	The fundamental theorem of Arithmetic	05-11-2022 07-11-2022	
46.	Modular Arithmetic, Euler and Fermat's theorems	08-11-2022 08-11-2022 09-11-2022	
47.	Tutorial class	11-11-2022	

UNIT-4: RECURRENCE RELATIONS

CO4: Student will be able to manipulate and analyze data generatically and recurrencingly

TB: Discrete mathematics with applications to computer science, J.P.Trembly,p.Manohar,Tata mc graw hill

48.	Generating Functions	14-11-2022	Lecture interspersed with discussions
49.	Function of Sequences	15-11-2022	
50.	Partial Fractions	15-11-2022	
51.	Coefficient of generating functions	16-11-2022	
52.	Recurrence relations	18-11-2022	
53.	Formulation as recurrence relations	19-11-2022	
54.	Recurrence relations by substitution	21-11-2022	
55.	Recurrence relations by Generating functions	22-11-2022	
56.	Tutorial class	22-11-2022	
57.	Recurrence relations by method of characteristics roots	23-11-2022 25-11-2022	
58.	Inhomogeneous Recurrence relations	26-11-2022 28-11-2022	
59.	Recurrence relations by Generating functions	29-11-2022 29-12-2022	

		30-11-2022	

UNIT-5: GRAPH THEORY

CO5: Student will be able to manipulate and analyze data graphically using Appropriate software.

TB: Discrete mathematics with applications to computer science, J.P.Trembly,p.Manohar,Tata mc graw hill

60.	Basic concepts of graphs, sub graphs	02-12-2022	Lecture interspersed with discussions
61.	Representation of graphs: Adjacency, Incidence matrices	03-12-2022	
62.	Isomorphic graphs	05-12-2022	
63.	Paths.circuits, Elerian and Hamiltonian graphs	06-12-2022 06-12-2022	
64.	Multi graphs, Problems	07-12-2022	
65.	Tutorial class	09-12-2022	
66.	Planar graphs, Euler's formula	12-12-2022	
69.	Chromatic numbers	13-12-2022	
70.	Spanning trees, Algorithms for spanning trees.	13-12-2022	
71.	Breadth first search algorithms	14-12-2022	
72.	Depth first search algorithm	16-12-2022	
73.	Krushkal,s algorithm	17-12-2022	
74.	Prims algorithm		

V.V.M. Srividya

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SRK INSTITUTE OF TECHNOLOGY

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Department of Computer Science Engineering

TENTATIVE LESSONPLAN

TENTATIVE LESSON PLAN: R2031051

Course Title: COMPUTER NETWORKS		
Section :CSE-A	Date :05/09/2022	Page No : 01 of 04
Revision No : 01	Prepared by:J.Siva Naga Jyothi	Approved by : HOD

Tools: Black board, PPTs

UNIT 1:Introduction And Physical Layer

CO1: Demonstrate different network models for networking links OSI, TCP/IP, B-ISDN, N-BISDN and getknowledge about various communication techniques, methods and protocol standards.
Discuss different transmission media and different switching networks.
TB: Computer Networks — Andrew S Tanenbaum, Fifth Edition. Pearson Education/PHI.

No. of periods	TOPIC	Expected Date	Mode of Delivery
1.	Network Types,	**FROM: 04-08-2022 TO 22-08-2022**	**Black Board & PPT**
2.	LAN, MAN, WAN,		
3.	Network Topologies		
4.	The OSIReference Model		
5.	The TCP/IP Reference Model		
6.	A Comparison of the OSI and TCP/IP Reference Models		
7.	OSI Vs TCP/IP,		
8.	Lack of OSI models success,		
9.	Internet History.		
10.	Introduction to Guided Media		
11.	Twisted-pair cable		
12.	Coaxial cable and Fiber optic cable		
13.	unguided media: Wireless-Radio waves,		
14.	microwaves, infrared.		

UNIT 2:Data link layer

CO2: Discuss different transmission media and different switching networks.
Data link layer services, functions and protocols like HDLC and PPP.
TB: Computer Networks — Andrew S Tanenbaum, Fifth Edition. Pearson Education/PHI.

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No. of periods	TOPIC	Date	Mode of Delivery
15.	Design issues,	FROM: 23-08-2022 TO: 11-09-2022	Black Board & PPT
16.	Framing: fixed size framing,		
17.	variable size framing,		
18.	flow control, errorcontrol,		
19.	Error detection and correction codes		
20.	CRC, Checksum: idea, one's complement internet checksum		
21.	services provided to Network Layer,		
22.	Elementary Data Link Layer protocols: simplex protocol,		
23.	Simplex stop and wait, Simplex protocol for Noisy Channel.		
24.	Sliding window protocol: One bit,		
25.	Go back N, Selective repeat-Stop and wait protocol,		
26.	Data link layer in HDLC: configuration and transfer modes, frames, control field,		
27.	point to point protocol (PPP): framing transition phase		
28.	Multiplexing		
29.	Multiplexing PPP		

UNIT 3:Media Access Control

CO 3: Compare and Classify medium access control protocols like ALOHA, CSMA, CSMA/CD, CSMA/CA, Polling, Token passing, FDMA, TDMA, CDMA protocols

TB: Data Communications and Networks – Behrouz A. Forouzan, Fifth Edition TMH.

No. of periods	TOPIC	Date	Mode of Delivery
30.	Media Access Control: Random Access: ALOHA	FROM: 12-09-2022 TO: 24-09-2022	Black Board & PPT
31.	Carrier sense multiple access (CSMA), CSMA with Collision Detection, CSMA with Collision Avoidance,		
32.	Controlled Access: Reservation, Polling, Token Passing		
33.	Channelization: frequency division multiple Access(FDMA),		

34.	TDMA		
35.	CDMA		
36.	Ethernet, Ethernet Protocol,		
37.	Standard Ethernet, Fast Ethernet(100 Mbps		
38.	Gigabit Ethernet,		
39.	10Gigabit Ethernet,		

UNIT 4: The Network Layer Design Issues

CO4: Determine Various Routing Algorithms and Congestion Control Algorithms.
TB: Data Communications and Networks – Behrouz A. Forouzan, Fifth Edition TMH.

No. of periods	TOPIC	Date	Mode of Delivery
40.	Store and Forward Packet Switching-Services Provided to the Transport layer	**FROM: 10-10-2022**	**Black Board & PPT**
41.	Implementation of Connectionless Service		
42.	Implementation of Connection Oriented Service		
43.	Comparison of Virtual Circuit and Datagram Networks,		
44.	Routing Algorithms-The Optimality principle-Shortest path, Flooding,		
45.	Distance vector, Link state, Hierarchical,		
46.	Congestion Control Algorithms		
47.	General principles of congestion control, Congestion prevention polices,		
48.	Approaches to Congestion Control-Traffic Aware Routing		
49.	Admission Control-Traffic Throttling		
50.	Load Shedding.		
51.	TrafficControl Algorithm- Leaky bucket& Token bucket	**TO: 04-11-2022**	
52.	Tunnelling, internetwork routing		
53.	Fragmentation, network layer in the internet		
54.	IP protocols-IP Version 4		
55.	IPV4 Header Format, IP addresses, Class full Addressing		
56.	CIDR, NAT		

57.	Subnets-IP Version 6		
58.	The main IPV6 header,		
59.	Transition from IPV4 to IPV6		
60.	Comparison of IPV4 & IPV6		

UNIT 5:The Transport LayerAnd Application Layer

CO5: Determine application layer services and client server protocols working with the client server paradigms like WWW, HTTP, FTP, e-mail and SNMP etc.
TB: Data Communications and Networks – Behrouz A. Forouzan, Fifth Edition TMH.

No. of periods	TOPIC	Date	Mode of Delivery
61.	Transport layer protocols: Introduction-services		
62.	port number-User data gram protocol-		
63.	User datagram		
64.	UDP services-UDP applications		
65.	Transmission control protocol: TCP services		
66.	TCP features- Segment		
67.	A TCP connection- windows in TCP	**FROM: 05-11-2022**	
68.	flow control, Error control, Congestion control in TCP.		
69.	World Wide Web: HTTP		**Black Board & PPT**
70.	Electronic mail-Architecture-		
71.	web based mail		
72.	Email security		
73.	TELENET-local versus remote Logging		
74.	Domain Name System: Name Space, DNS in Internet	**TO: 16-11-2022**	
75.	Resolution-Caching		
76.	- Resource Record		
77.	DNS messages		
78.	Registrars-security of DNS Name Servers, SNMP.		

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TENTATIVE LESSON PLAN: R1932053

DESIGN AND ANALYSIS OF ALGORITHMS

Course Title: DESIGN AND ANALYSIS OF ALGORITHMS		
Section : CSE -A	Date : 01/08/2022	Page No : 1 to 3
Revision No : 00	Prepared By : Dr.A.Radhika	Approved By : HOD

Tools: Black board

S.NO.	TOPIC	Date	Mode of Delivery
UNIT-I Introduction of Algorithm CO1 Analyze the performance of algorithm and denote its time complexity using the asymptotic notation. **TB1:** Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran, " Fundamentals of Computer Algorithms", 2nd Edition, Universities Press			
1	Introduction: Algorithm Definition	From: 01/08/2022 To: 22/08/2022	Lecture interspersed with discussions
2	Algorithm Specification		
3	performance Analysis		
4	Performance measurement		
5	Asymptotic notation		
6	Randomized Algorithms		
7	Sets & Disjoint set union		
8	Tutorial class		
UNIT-II Divide and Conquer **CO2:** List and describe various algorithmic approaches **TB1: :** Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran, " Fundamentals of Computer Algorithms", 2nd Edition, Universities Press			
9	Divide and Conquer	From 23/08/2022 To 19/09/2022	Lecture interspersed with discussions
10	General Method		
11	Defective chessboard		
12	Binary Search		
13	Finding the maximum and minimum		
14	Merge sort		
15	Quick sort		
16	Greedy Method, knapsack problem		
17	Minimum Cost Spanning Tree		
18	Optimal Merge Patterns		
19	Single Source Shortest Path		
20	Tutorial		

UNIT-III Dynamic Programming

CO3: Solve problems using dynamic programming, backtracking and branch and bound algorithmic approaches

TB1: : Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran, " Fundamentals of Computer Algorithms", 2nd Edition, Universities Press

21	Dynamic Programming, The general method	From 20/09/2022 To 24/09/2022 And From 10/10/2022 To 31/10/2022	Lecture interspersed with discussions
22	multistage graphs		
23	Single source shortest paths		
24	All pairs-shortest paths		
25	Optimal Binary search trees		
26	0/1 knapsack		
27	The traveling salesperson problem		
28	Tutorial class		

UNIT-IV Backtracking

CO4 : Apply graph search algorithms to real world problems

TB1:: Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran, " Fundamentals of Computer Algorithms", 2nd Edition, Universities Press

29	Backtracking, The General Method	From 01/11/2022 To 14/11/2022	Lecture Interspersed with discussions
30	The 8-Queens problem		
31	sum of subsets		
32	Graph coloring		
33	Hamiltonian cycles		
34	knapsack problem, Traveling salesperson problem		
35	Tutorial class		

UNIT-V NP-Hard and NP-Complete problems

CO5: Demonstrate an understanding of NP- Completeness theory and lower bound theory

TB1: : Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran, " Fundamentals of Computer Algorithms", 2nd Edition, Universities Press

36	NP-Hard and NP-Complete problems, Basic concepts	From: 15/11/2022 To: 26/11/2022	Lecture interspersed with discussions
37	Nondeterministic algorithm		
38	NP-Complete Classes		
39	Cooks Theorem		
40	Tutorial class		

TB1: Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran, " Fundamentals of Computer Algorithms", 2nd Edition, Universities Press

TB2: Introduction to Algorithms Thomas H. Cormen, PHI Learning

TB2: Harsh Bhasin, " Algorithms Design & Analysis", Oxford University Press.

Radhika 1/8/22

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TENTETIVELESSON PLAN–R203105E
OPTIMIZATION IN OPERATIONS RESEARCH

SRK INSTITUTE OF TECHNOLOGY

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Department of Computer Science Engineering

TENTATIVE LESSONPLAN

TENTATIVE LESSON PLAN: R2031053

Course Title: DATAWAREHOUSING AND DATAMINING (R2031053)		
Section :CSE-A	Date :05/09/2022	Page No : 01 of 04
Revision No : 01	Prepared by:R.Lakshmi	Approved by : HOD

Tools: Black board, PPTs

UNIT 1: Data warehousing and online analytical processing:

CO1 : The main objective of the course is to
 Introduce basic concepts and techniques of data warehousing and data mining .
Discuss different transmission media and different switching networks.
TB: Introduction to Data Mining: Pang-Ning Tan & Michael Steinbach, Vipin Kumar, **Pearson,2012.**

No. of periods	TOPIC	Expected Date	Mode of Delivery
1.	Introduce basic concepts and techniques of data warehousing and data mining.	FROM: 04-08-2022 TO 23-08-2022	Black Board & PPT
2.	Data Warehouse Modelling: Data Cube and OLAP.		
3.	Data Warehouse Design and Usage, Data Warehouse Implementation.		
4.	Introduction: Why and What is data mining,		
5.	What kinds of data need to be mined and patterns can be mined.		
6.	Which technologies are used.		
7.	Which kinds of applications are targeted.		

UNIT 2: Data Pre-processing:

CO2: Examine the types of the data to be mined and apply pre-processing methods on raw data.
TB: Data Mining Techniques and Applications: An Introduction, Hongbo Du, Cengage Learning.

No. of periods	TOPIC	Date	Mode of Delivery
8.	An Overview, Data Cleaning.	FROM: 24-08-2022 TO: 12-09-2022	Black Board & PPT
9.	Data Integration.		
10.	Data Reduction.		
11.	DataTransformation and Data Discretization.		

UNIT 3: Classification:

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TENTATIVE LESSONPLAN

CO 3: Illustrate the importance of Data Warehousing, Data Mining and its functionalities and Design schema for real time data warehousing applications
TB: Data Mining: VikramPudi and P. Radha Krishna, Oxford Publisher.

No. of periods	TOPIC	Date	Mode of Delivery
12.	Basic Concepts, General Approach to solving a classification problem.	FROM: 13-09-2022 TO: 26-09-2022	Black Board & PPT
13.	Decision Tree Induction: Attribute Selection Measures.		
14.	Tree Pruning,.		
15.	Scalability and Decision Tree Induction.		
16.	Visual Mining for Decision Tree Induction.		

UNIT 4: Association Analysis:
CO4: Demonstrate on various Data Preprocessing Techniques viz. data cleaning, data integration, data transformation and data reduction and Process raw data to make it suitable for various data mining algorithms.
TB:. Data Mining and Analysis - Fundamental Concepts and Algorithms; Mohammed J. Zaki, Wagner Meira, Jr, Oxford.

No. of periods	TOPIC	Date	Mode of Delivery
17.	Problem Definition	FROM: 27-10-2022 TO: 09-11-2022	Black Board & PPT
18.	Frequent Item set Generation.		
19.	Rule Generation:Confident Based Pruning.		
20.	Rule Generation in Apriori Algorithm.		
21.	Compact Representation of frequent item sets.		
22.	FP- Growth Algorithm.		
23.	IPV4 Header Format, IP addresses, Class full Addressing		

UNIT 5: Cluster Analysis:
CO5: Identify and apply various clustering algorithm (with open source tools), interpret, evaluate and report the result.
TB: Data Warehousing Data Mining & OLAP, Alex Berson, Stephen Smith, TMH..

No. of periods	TOPIC	Date	Mode of Delivery
24.	Cluster Analysis: Overview.	FROM:	Black Board & PPT
25.	Clustering techniques.		
26.	Different Types of Clusters		

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Department of Computer Science Engineering

TENTATIVE LESSONPLAN

27.	Basics and Importance of Cluster Analysis.	10-11-2022	
28.	K-means: The Basic K-means Algorithm.		
29.	K-means Additional Issues.	TO:	
30.	Bi-secting K Means.	23-11-2022	

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TENTETIVELESSON PLAN–R203105E
OPTIMIZATION IN OPERATIONS RESEARCH

Course Title: OPTIMIZATION IN OPERATIONS RESEARCH		
Section : CSE A	**Date : 01-08-2022**	**Page No :** 01 of 04
Revision No : 00	**Prepared By :**G.Koteswaramma	**Approved By : HOD**

Tools : Black board, PPT

No. of Periods	TOPIC	Date	Mode of Delivery
	UNIT- I : INTRODUCTION AND CLASSICAL OPTIMIZATION TECHNIQUES		
	CO1: To define an objective function and constraint functions in terms of design variables, and then statethe optimization problem.To state single variable and multi variable optimization Problems, without and with constraints.		
	TB1 : ENGINEERING OPTIMIZATION – THEORY AND PRACTICE, S.S.RAO, NEW AGE INTERNATIONAL (P) LIMITED, 3RD EDITION,1998.		
	TB2:OPERATIONS RESEARCH By S.D. SHARMA – KEDARNATH.		
1.	**Introduction:**Statement of an Optimization problem, design vector	01-08-2022	Lecture interspersed with discussions
2.	Design constraints, constraint surface	02-08-2022	
3.	Objective function, objective function surfaces	04-08-2022	
4.	Classification of Optimization problems.	05-08-2022	
5.	**Classical Optimization Techniques:** Single variable Optimization- Algorithm, Problems	06-08-2022	
6.	Multi variable Optimization without constraints - Algorithm, Problems	06-08-2022	
7.	Tutorial Class	08-08-2022	
8.	Necessary and Sufficient conditions for minimum/maximum	09-08-2022	
9.	Multivariable Optimization with equality constraints - Algorithm, Problems	11-08-2022 12-08-2022	
10.	Solution by method of Lagrange multipliers - Algorithm, Problems	16-08-2022 18-08-2022 19-08-2022	
11.	Multivariable Optimization with inequality constraints–One Constraint Algorithm, Problems	20-08-2022 20-08-2022	
12.	Tutorial Class	22-08-2022	
13.	Multivariable Optimization with inequality constraints – Two Constraint Algorithm, Problems	23-08-2022 25-08-2022	
14.	Kuhn – Tucker conditions–one constraint Algorithm, Problems	26-08-2022 26-08-2022	
15.	Kuhn – Tucker conditions – Two constraint Algorithm, Problems	27-08-2022 27-08-2022	
	UNIT- II : LINEAR PROGRAMMING		
	CO2: To explain linear programming technique to an optimization problem, define slack and surplusvariables, by using Simplex method, Dual Simplex method, Big-M method, Two Phase Method.		

TB1 : ENGINEERING OPTIMIZATION – THEORY AND PRACTICE, S.S.RAO, NEW AGE INTERNATIONAL (P) LIMITED, 3RD EDITION,1998.
TB2: OPERATIONS RESEARCH By S.D. SHARMA – KEDARNATH.

16.	Standard form of a linear programming problem	29-08-2022	Lecture interspersed with discussions
17.	Geometry of linear programming problems	30-08-2022	
18.	Definitions and Theorems	01-09-2022	
19.	Solution of a system of linear simultaneous equations	02-09-2022	
20.	Pivotal reduction of a general system of equations	03-09-2022	
21.	Tutorial Class	03-09-2022	
22.	Motivation to the Simplex method	05-09-2022	
23.	Simplex Algorithm - Problems	06-09-2022	
24.	Problems	08-09-2022	
25.	Duality in Linear Programming	09-09-2022	
26.	Dual Simplex method		
27.	Big –M method	12-09-2022	
28.	Problems	13-09-2022	
29.	Two – Phase method	15-09-2022	
30.	Problems	16-09-2022	
31.	Tutorial Class	17-09-2022	

UNIT III- TRANSPORTATION PROBLEM

CO3 :To state transportation and assignment problem as a linear programming problem to determineSimplex method.

TB1 : ENGINEERING OPTIMIZATION – THEORY AND PRACTICE, S.S.RAO, NEW AGE INTERNATIONAL (P) LIMITED, 3RD EDITION,1998.
TB2: OPERATIONS RESEARCH By S.D. SHARMA – KEDARNATH.

32.	Introduction to Transportation Problem	17-09-2022	Lecture interspersed with discussions
33.	Finding initial basic feasible solution by north west corner rule - Problems	19-09-2022	
34.	Least Cost Method - Problems	20-09-2022	
35.	Vogel's Approximation Method - Problems	19-09-2022 22-09-2022	
36.	Tutorial Class	23-09-2022	
37.	Testing for optimality in Balanced Transportation Problem	24-09-2022	
38.	MODI Method - Problems	24-09-2022 26-09-2022	
39.	Special cases in Transportation Problem- Unbalanced Transportation Problem	26-09-2022 27-09-2022	
40.	Degeneracy on Transportation Problem	29-09-2022 30-09-2022	

41.	Assignment Problems- Balanced Assignment Problems	01-10-2022	
42.	Assignment Problems - Unbalanced Assignment Problems	01-10-2022	
43.	Problems	03-10-2022	
44.	Travelling Salesman Problems	06-10-2022 07-10-2022	
45.	Problems	10-10-2022	
46.	Tutorial Class	11-10-2022	

UNIT – IV NON-LINEAR PROGRAMMING

CO4 : To study and explain nonlinear programming techniques, unconstrained or constrained, and define exterior and interior penalty functions for optimization problems.

TB1 : ENGINEERING OPTIMIZATION – THEORY AND PRACTICE, S.S.RAO, NEW AGE INTERNATIONAL (P) LIMITED, 3RD EDITION,1998.
TB2: OPERATIONS RESEARCH By S.D. SHARMA – KEDARNATH.

47.	Unconstrained cases, One dimensional minimization methods	13-10-2022 14-10-2022	Lecture interspersed with discussions
48.	Classifications	15-10-2022	
49.	Fibonacci Method	15-10-2022	
50.	Quadratic Interpolation Method	17-10-2022	
51.	Univariate Method	18-10-2022	
52.	Powell's Method	20-10-2022	
53.	Steepest descent method	21-10-2022	
54.	Tutorial Class	22-10-2022	
55.	Constrained cases Characteristics of a constrained problem	24-10-2022	
56.	Classification	25-10-2022	
57.	Basic approach of PenaltyFunction method	27-10-2022	
58.	Basic approaches of Interior and Exterior penalty function methods	28-10-2022 29-10-2022	
59.	Introduction to Convex Programming Problem	29-10-2022	
60.	Tutorial Class	01-11-2022	

UNIT –V DYNAMIC PROGRAMMING

CO 5: To understand the optimal control problem for dynamic systems using Bellman's principle of Optimality.

TB1 : ENGINEERING OPTIMIZATION – THEORY AND PRACTICE, S.S.RAO, NEW AGE INTERNATIONAL (P) LIMITED, 3RD EDITION,1998.
TB2: OPERATIONS RESEARCH By S.D. SHARMA – KEDARNATH.

61.	Dynamic programming multistage decision processes, types	03-11-2022 04-11-2022	Lecture interspersed with discussions
62.	Problems	05-11-2022	

63.	Conceptof sub optimization and the principle of optimality	05-11-2022	
64.	Problems	07-11-2022	
65.	Computational procedure in dynamic programming	08-11-2022 10-11-2022	
66.	Problems	11-11-2022 14-11-2022	
67.	Examples illustrating the calculus method of solution	15-11-2022 17-11-2022 18-11-2022	
68.	Problems	19-11-2022 19-11-2022	
69.	Examples illustrating the tabular method of solution	21-11-2022 22-11-2022 24-11-2022	
70.	Problems	25-11-2022 26-11-2022	
71.	Tutorial Class	26-11-2022	

G. Koteswaramma
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Approved by AICTE, Affiliated to JNTUK, Kakinada
(ISO 9001:2015 Certified Institution)
Department of Computer Science and Engineering

TENTATIVE LESSON PLAN: R203105B

Course Title: Software Project Management (R203105B)		
Section: III CSE-A	Date:01/08/2022	Page No: 01 of 04
Revision No:	Prepared By: Ch.Ambedkar	Approved By: HOD

Tools: Black Board, PowerPoint Presentations

No. of Periods	Topic	Date	Mode of Delivery
UNIT I	**: Conventional Software Management, Evolution of Software Economics, Improving Software Economics, The old way and the new**		
CO 1	: Understand why majority of the software projects fails and how that failure probability can be reduced effectively		
Text Book	**: Software Project Management, Walker Royce: Pearson Education**		
1	Conventional Software Management:	1-8-2022	Lecture interspersed with discussions
2,3	The waterfall model - In theory - In practice	2,3-8-2022	
4	Conventional Software Management performance	4-8-2022	
5	Evolution of Software Economics:	5-8-2022	
6	Software Economics	6-8-2022	
7	Pragmatic software cost Estimation	8-8-2022	
8	Improving Software Economics:	9-8-2022	
9	Reducing Software product size	10-8-2022	
10	Improving software Processes	11-8-2022	
11	Improving team effectiveness	12-8-2022	
12	Improving automation through software environments	13-8-2022	
13	Achieving required Quality	16-8-2022	
14	The old way and the new:	17-8-2022	
15,16	The principles of conventional software Engineering	18,20-8-2022	

17,18	Principles of modern software management	22,23-8-2022	
19	Tutorial	24-8-2022	
No. of Periods	**Topic**	**Date**	**Mode of Delivery**
UNIT II : **Life cycle phases, Artifacts of the process** **CO 2** : Apply software metrics and attain economics in a project and understand conventional and modern software engineering principles. **Text Book** : **Software Project Management, Walker Royce: Pearson Education.**			
20	Life cycle phases:	25-8-2022	Lecture interspersed with discussions
21	Engineering and Production stages	26-8-2022	
22	Inception Phase	27-8-2022	
23	Elaboration Phase	29-8-2022	
24	Construction Phase	30-8-2022	
25	Transition Phase	1-9-2022	
26	The artifact sets	2-9-2022	
27	Management artifacts	3-9-2022	
28	Engineering Artifacts	5-9-2022	
29	Pragmatic artifacts	6-9-2022	
30	Tutorial	7-9-2022	
No. of Periods	**Topic**	**Date**	**Mode of Delivery**
UNIT III : **Model based software architectures, Checkpoints of the process, Iterative Process Planning** **CO 3** : Will have good knowledge of various phases in modern software management and artifacts of process and Understand the software architecture perspectives **Text Book** : **Software Project Management, Walker Royce: Pearson Education**			
31	A Management perspective	8-9-2022	Lecture interspersed with discussions
32	A Technical Perspective	9-9-2022	
33	Software process workflows	10-9-2022	
34	Iteration workflows.	12-9-2022	
35	Major mile stones	13-9-2022	

36	Minor Milestones	14-9-2022	Lecture interspersed with discussions
37	Periodic status Assessments	15-9-2022	
38	Iterative Process Planning	16-9-2022	
39	Work breakdown structures Conventional WBS Issues	17-9-2022	
40	Evolutionary WBS	19-9-2022	
41	Planning guidelines	20-9-2022	
42	The cost &Schedule estimating process	21-9-2022	
43	The Iteration planning process	23-9-2022	
44	Pragmatic planning.	10-10-2022	
45	Tutorial	11-10-2022	
No. of Periods	**Topic**	12-10-2022	**Mode of Delivery**

UNIT IV : Project Organizations and Responsibilities, Project Control and Process instrumentation

CO 4 : Understand the Project Organizations and Responsibilities of teams Understand the milestones ,Project planning and Project Scheduling

Text Book : Software Project Management, Walker Royce: Pearson Education

46	Line-of-Business Organizations	14-10-2022	Lecture interspersed with discussions
47,48	Project Organizations	15,17-10-2022	
49	Evolution of Organizations	18-10-2022	
50	Tools-Automation Building blocks	19-10-2022	
51	The Project Environment	20-10-2022	
52	Project Control and Process instrumentation:	25-10-2022	
53,54	The seven core Metrics	26-10-2022	
55	Management Indicators	27,28-10-2022	
56	Quality indicators	29-10-2022	
57	Life cycle expectation	31-10-2022	
58	Pragmatic Software Metrics	1-11-2022	

59	Metrics automation	2-11-2022	
60	Tutorial	3-11-2022	
No. of Periods	**Topic**	**Date**	**Mode of Delivery**
UNIT V CO 4	**: Agile Methodology, Fundamentals of DevOps** : Understand the Agile Project Management process that enable planning, management and control Understand best practices in Continuous Development, Configuration Management, Continuous Integration, and finally, Continuous Monitoring of software throughout its development life cycle.		
61	Agile Methodology	4-11-2022	Lecture interspersed with discussions
62	ADAPTing to Scrum	5-11-2022	
63	Patterns for Adopting Scrum	8-11-2022	
64	Iterating towards Agility	10-11-2022	
65	Fundamentals of DevOps: Architecture	11-11-2022	
66	Deployments, Orchestration	14-11-2022	
67	Need, Instance of applications, DevOps delivery pipeline	15-11-2022	
68	DevOps eco system. DevOps adoption in projects	18-11-2022	
69	Technology aspects, Agiling capabilities	21-11-2022	
70	Tool stack implementation, People aspect, processes	23-11-2022	
71	Tutorial	25-11-2022	
72	Tutorial	26-11-2022	

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TENTATIVE LESSONPLAN

TENTATIVE LESSON PLAN: R2031051

Course Title: COMPUTER NETWORKS		
Section :CSE-B	Date :05/09/2022	Page No : 01 of 04
Revision No : 01	Prepared by:J.Siva Naga Jyothi	Approved by : HOD

Tools: Black board, PPTs

UNIT 1:Introduction And Physical Layer

CO1: Demonstrate different network models for networking links OSI, TCP/IP, B-ISDN, N-BISDN and getknowledge about various communication techniques, methods and protocol standards.
Discuss different transmission media and different switching networks.
TB: Computer Networks — Andrew S Tanenbaum, Fifth Edition. Pearson Education/PHI.

No. of periods	TOPIC	Expected Date	Mode of Delivery
1.	Network Types,	**FROM: 04-08-2022 TO 22-08-2022**	**Black Board & PPT**
2.	LAN, MAN, WAN,		
3.	Network Topologies		
4.	The OSIReference Model		
5.	The TCP/IP Reference Model		
6.	A Comparison of the OSI and TCP/IP Reference Models		
7.	OSI Vs TCP/IP,		
8.	Lack of OSI models success,		
9.	Internet History.		
10.	Introduction to Guided Media		
11.	Twisted-pair cable		
12.	Coaxial cable and Fiber optic cable		
13.	unguided media: Wireless-Radio waves,		
14.	microwaves, infrared.		

UNIT 2:Data link layer

CO2: Discuss different transmission media and different switching networks.
Data link layer services, functions and protocols like HDLC and PPP.
TB: Computer Networks — Andrew S Tanenbaum, Fifth Edition. Pearson Education/PHI.

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No. of periods	TOPIC	Date	Mode of Delivery
15.	Design issues,	FROM: 23-08-2022 TO: 11-09-2022	Black Board & PPT
16.	Framing: fixed size framing,		
17.	variable size framing,		
18.	flow control, errorcontrol,		
19.	Error detection and correction codes		
20.	CRC, Checksum: idea, one's complement internet checksum		
21.	services provided to Network Layer,		
22.	Elementary Data Link Layer protocols: simplex protocol,		
23.	Simplex stop and wait, Simplex protocol for Noisy Channel.		
24.	Sliding window protocol: One bit,		
25.	Go back N, Selective repeat-Stop and wait protocol,		
26.	Data link layer in HDLC: configuration and transfer modes, frames, control field,		
27.	point to point protocol (PPP): framing transition phase		
28.	Multiplexing		
29.	Multiplexing PPP		

UNIT 3:Media Access Control

CO 3: Compare and Classify medium access control protocols like ALOHA, CSMA, CSMA/CD, CSMA/CA, Polling, Token passing, FDMA, TDMA, CDMA protocols

TB: Data Communications and Networks – Behrouz A. Forouzan, Fifth Edition TMH.

No. of periods	TOPIC	Date	Mode of Delivery
30.	Media Access Control: Random Access: ALOHA	FROM: 12-09-2022 TO: 24-09-2022	Black Board & PPT
31.	Carrier sense multiple access (CSMA), CSMA with Collision Detection, CSMA with Collision Avoidance,		
32.	Controlled Access: Reservation, Polling, Token Passing		
33.	Channelization: frequency division multiple Access(FDMA),		

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TENTATIVE LESSONPLAN

No. of periods	TOPIC	Date	Mode of Delivery
15.	Design issues,	FROM: 23-08-2022 TO: 11-09-2022	Black Board & PPT
16.	Framing: fixed size framing,		
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23.	Simplex stop and wait, Simplex protocol for Noisy Channel.		
24.	Sliding window protocol: One bit,		
25.	Go back N, Selective repeat-Stop and wait protocol,		
26.	Data link layer in HDLC: configuration and transfer modes, frames, control field,		
27.	point to point protocol (PPP): framing transition phase		
28.	Multiplexing		
29.	Multiplexing PPP		

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33.	Channelization: frequency division multiple Access(FDMA),		

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34.	TDMA		
35.	CDMA		
36.	Ethernet, Ethernet Protocol,		
37.	Standard Ethernet, Fast Ethernet(100 Mbps		
38.	Gigabit Ethernet,		
39.	10Gigabit Ethernet,		

UNIT 4: The Network Layer Design Issues

CO4: Determine Various Routing Algorithms and Congestion Control Algorithms.
TB: Data Communications and Networks – Behrouz A. Forouzan, Fifth Edition TMH.

No. of periods	TOPIC	Date	Mode of Delivery
40.	Store and Forward Packet Switching-Services Provided to the Transport layer	FROM: 10-10-2022	Black Board & PPT
41.	Implementation of Connectionless Service		
42.	Implementation of Connection Oriented Service		
43.	Comparison of Virtual Circuit and Datagram Networks,		
44.	Routing Algorithms-The Optimality principle-Shortest path, Flooding,		
45.	Distance vector, Link state, Hierarchical,		
46.	Congestion Control Algorithms		
47.	General principles of congestion control, Congestion prevention polices,		
48.	Approaches to Congestion Control-Traffic Aware Routing		
49.	Admission Control-Traffic Throttling		
50.	Load Shedding.		
51.	TrafficControl Algorithm- Leaky bucket& Token bucket		
52.	Tunnelling, internetwork routing	TO: 04-11-2022	
53.	Fragmentation, network layer in the internet		
54.	IP protocols-IP Version 4		
55.	IPV4 Header Format, IP addresses, Class full Addressing		
56.	CIDR, NAT		

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57.	Subnets-IP Version 6		
58.	The main IPV6 header,		
59.	Transition from IPV4 to IPV6		
60.	Comparison of IPV4 & IPV6		

UNIT 5:The Transport LayerAnd Application Layer

COS: Determine application layer services and client server protocols working with the client server paradigms like WWW, HTTP, FTP, e-mail and SNMP etc.

TB: Data Communications and Networks – Behrouz A. Forouzan, Fifth Edition TMH.

No. of periods	TOPIC	Date	Mode of Delivery
61.	Transport layer protocols: Introduction-services	FROM: 05-11-2022	Black Board & PPT
62.	port number-User data gram protocol-		
63.	User datagram		
64.	UDP services-UDP applications		
65.	Transmission control protocol: TCP services		
66.	TCP features- Segment		
67.	A TCP connection- windows in TCP		
68.	flow control, Error control, Congestion control in TCP.		
69.	World Wide Web: HTTP		
70.	Electronic mail-Architecture-		
71.	web based mail		
72.	Email security		
73.	TELENET-local versus remote Logging		
74.	Domain Name System: Name Space, DNS in Internet	TO: 16-11-2022	
75.	Resolution-Caching		
76.	- Resource Record		
77.	DNS messages		
78.	Registrars-security of DNS Name Servers, SNMP.		

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TENTATIVE LESSON PLAN: R1932053

DESIGN AND ANALYSIS OF ALGORITHMS

Course Title: DESIGN AND ANALYSIS OF ALGORITHMS		
Section : CSE -B	Date : 01/08/2022	Page No : 1 to 3
Revision No : 00	Prepared By : Dr.A.Radhika	Approved By : HOD

Tools: Black board

S.NO.	TOPIC	Date	Mode of Delivery
UNIT-I Introduction of Algorithm **CO1** Analyze the performance of algorithm and denote its time complexity using the asymptotic notation. **TB1:** Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran, " Fundamentals of Computer Algorithms", 2nd Edition, Universities Press			
1	Introduction: Algorithm Definition	From: 01/08/2022 To: 22/08/2022	Lecture interspersed with discussions
2	Algorithm Specification		
3	performance Analysis		
4	Performance measurement		
5	Asymptotic notation		
6	Randomized Algorithms		
7	Sets & Disjoint set union		
8	Tutorial class		
UNIT-II Divide and Conquer **CO2:** List and describe various algorithmic approaches **TB1: :** Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran, " Fundamentals of Computer Algorithms", 2nd Edition, Universities Press			
9	Divide and Conquer	From 23/08/2022 To 19/09/2022	Lecture interspersed with discussions
10	General Method		
11	Defective chessboard		
12	Binary Search		
13	Finding the maximum and minimum		
14	Merge sort		
15	Quick sort		
16	Greedy Method, knapsack problem		
17	Minimum Cost Spanning Tree		
18	Optimal Merge Patterns		
19	Single Source Shortest Path		
20	Tutorial		

UNIT-III Dynamic Programming

CO3: Solve problems using dynamic programming, backtracking and branch and bound algorithmic approaches

TB1: : Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran, " Fundamentals of Computer Algorithms", 2nd Edition, Universities Press

21	Dynamic Programming, The general method	From 20/09/2022 To 24/09/2022 From 10/10/2022 To 31/10/2022	Lecture interspersed with discussions
22	multistage graphs		
23	Single source shortest paths		
24	All pairs-shortest paths		
25	Optimal Binary search trees		
26	0/1 knapsack		
27	The traveling salesperson problem		
28	Tutorial class		

UNIT-IV Backtracking

CO4 : Apply graph search algorithms to real world problems

TB1:: Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran, " Fundamentals of Computer Algorithms", 2nd Edition, Universities Press

29	Backtracking, The General Method	From 01/11/2022 To 14/11/2022	Lecture Interspersed with discussions
30	The 8-Queens problem		
31	sum of subsets		
32	Graph coloring		
33	Hamiltonian cycles		
34	knapsack problem, Traveling salesperson problem		
35	Tutorial class		

UNIT-V NP-Hard and NP-Complete problems

CO5: Demonstrate an understanding of NP- Completeness theory and lower bound theory

TB1: : Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran, " Fundamentals of Computer Algorithms", 2nd Edition, Universities Press

36	NP-Hard and NP-Complete problems, Basic concepts	From: 15/11/2022 To: 26/11/2022	Lecture interspersed with discussions
37	Nondeterministic algorithm		
38	NP-Complete Classes		
39	Cooks Theorem		
40	Tutorial class		

TB1: Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran, " Fundamentals of Computer Algorithms", 2nd Edition, Universities Press

TB2: Introduction to Algorithms Thomas H. Cormen, PHI Learning

TB2: Harsh Bhasin, " Algorithms Design & Analysis", Oxford University Press.

Radhika 1/8/22

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TENTATIVE LESSONPLAN

TENTATIVE LESSON PLAN: R2031053

Course Title: DATAWAREHOUSING AND DATAMINING (R2031053)		
Section :CSE-B	Date :05/09/2022	Page No : 01 of 04
Revision No : 01	Prepared by:R.Lakshmi	Approved by : HOD

Tools: Black board, PPTs

UNIT 1: Data warehousing and online analytical processing:

CO1 : The main objective of the course is to
- Introduce basic concepts and techniques of data warehousing and data mining .

Discuss different transmission media and different switching networks.
TB: Introduction to Data Mining: Pang-Ning Tan & Michael Steinbach, Vipin Kumar, Pearson,2012.

No. of periods	TOPIC	Expected Date	Mode of Delivery
1.	Introduce basic concepts and techniques of data warehousing and data mining.	FROM: 04-08-2022 TO 23-08-2022	Black Board & PPT
2.	Data Warehouse Modelling: Data Cube and OLAP.		
3.	Data Warehouse Design and Usage, Data Warehouse Implementation.		
4.	Introduction: Why and What is data mining.		
5.	What kinds of data need to be mined and patterns can be mined.		
6.	Which technologies are used.		
7.	Which kinds of applications are targeted.		

UNIT 2: Data Pre-processing:

CO2: Examine the types of the data to be mined and apply pre-processing methods on raw data.
TB: Data Mining Techniques and Applications: An Introduction, Hongbo Du, Cengage Learning.

No. of periods	TOPIC	Date	Mode of Delivery
8.	An Overview, Data Cleaning.	FROM: 24-08-2022 TO: 12-09-2022	Black Board & PPT
9.	Data Integration.		
10.	Data Reduction.		
11.	DataTransformation and Data Discretization.		

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UNIT 3: Classification:

CO 3: Illustrate the importance of Data Warehousing, Data Mining and its functionalities and Design schema for real time data warehousing applications

TB: Data Mining: VikramPudi and P. Radha Krishna, Oxford Publisher.

No. of periods	TOPIC	Date	Mode of Delivery
12.	Basic Concepts, General Approach to solving a classification problem.	FROM: 13-09-2022 TO: 26-09-2022	Black Board & PPT
13.	Decision Tree Induction: Attribute Selection Measures.		
14.	Tree Pruning,.		
15.	Scalability and Decision Tree Induction.		
16.	Visual Mining for Decision Tree Induction.		

UNIT 4: Association Analysis:

CO4: Demonstrate on various Data Preprocessing Techniques viz. data cleaning, data integration, data transformation and data reduction and Process raw data to make it suitable for various data mining algorithms.

TB:. Data Mining and Analysis - Fundamental Concepts and Algorithms; Mohammed J. Zaki, Wagner Meira, Jr, Oxford.

No. of periods	TOPIC	Date	Mode of Delivery
17.	Problem Definition	FROM: 27-10-2022 TO: 09-11-2022	Black Board & PPT
18.	Frequent Item set Generation.		
19.	Rule Generation:Confident Based Pruning.		
20.	Rule Generation in Apriori Algorithm.		
21.	Compact Representation of frequent item sets.		
22.	FP- Growth Algorithm.		
23.	IPV4 Header Format, IP addresses, Class full Addressing		

UNIT 5: Cluster Analysis:

CO5: Identify and apply various clustering algorithm (with open source tools), interpret, evaluate and report the result.

TB: Data Warehousing Data Mining & OLAP, Alex Berson, Stephen Smith, TMH..

No. of periods	TOPIC	Date	Mode of Delivery
24.	Cluster Analysis: Overview.		

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TENTATIVE LESSONPLAN

25.	Clustering techniques.		
26.	Different Types of Clusters	**FROM: 10-11-2022**	
27.	Basics and Importance of Cluster Analysis.		
28.	K-means: The Basic K-means Algorithm.	**TO: 23-11-2022**	**Black Board & PPT**
29.	K-means Additional Issues.		
30.	Bi-secting K Means.		

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TENTETIVELESSON PLAN–R203105E
OPTIMIZATION IN OPERATIONS RESEARCH

Course Title: OPTIMIZATION IN OPERATIONS RESEARCH		
Section : CSE B	Date : 01-08-2022	Page No : 01 of 04
Revision No : 00	Prepared By :G.Koteswaramma	Approved By : HOD

Tools : Black board, PPT

No. of Periods	TOPIC	Date	Mode of Delivery
	UNIT- I : INTRODUCTION AND CLASSICAL OPTIMIZATION TECHNIQUES		
	CO1: To define an objective function and constraint functions in terms of design variables, and then statethe optimization problem.To state single variable and multi variable optimization Problems, without and with constraints.		
	TB1 : ENGINEERING OPTIMIZATION – THEORY AND PRACTICE, S.S.RAO, NEW AGE INTERNATIONAL (P) LIMITED, 3RD EDITION,1998.		
	TB2:OPERATIONS RESEARCH By S.D. SHARMA – KEDARNATH.		
1.	**Introduction:**Statement of an Optimization problem, design vector	01-08-2022	Lecture interspersed with discussions
2.	Design constraints, constraint surface	01-08-2022	
3.	Objective function, objective function surfaces	02-08-2022	
4.	Classification of Optimization problems.	03-08-2022	
5.	**Classical Optimization Techniques:** Single variable Optimization- Algorithm, Problems	04-08-2022	
6.	Multi variable Optimization without constraints - Algorithm, Problems	05-08-2022	
7.	Tutorial Class	08-08-2022	
8.	Necessary and Sufficient conditions for minimum/maximum	08-08-2022	
9.	Multivariable Optimization with equality constraints - Algorithm, Problems	09-08-2022 10-08-2022	
10.	Solution by method of Lagrange multipliers - Algorithm, Problems	11-08-2022 12-08-2022 16-08-2022	
11.	Multivariable Optimization with inequality constraints–One Constraint Algorithm, Problems	17-08-2022 18-08-2022	
12.	Tutorial Class	19-08-2022	
13.	Multivariable Optimization with inequality constraints – Two Constraint Algorithm, Problems	22-08-2022 23-08-2022	
14.	Kuhn – Tucker conditions–one constraint Algorithm, Problems	25-08-2022 26-08-2022	
15.	Kuhn – Tucker conditions – Two constraint Algorithm, Problems	29-08-2022 29-08-2022	
	UNIT- II : LINEAR PROGRAMMING		
	CO2: To explain linear programming technique to an optimization problem, define slack and surplusvariables, by using Simplex method, Dual Simplex method, Big-M method, Two Phase Method.		

TB1 : ENGINEERING OPTIMIZATION – THEORY AND PRACTICE, S.S.RAO, NEW AGE INTERNATIONAL (P) LIMITED, 3RD EDITION,1998.
TB2: OPERATIONS RESEARCH By S.D. SHARMA – KEDARNATH.

16.	Standard form of a linear programming problem	30-08-2022	Lecture interspersed with discussions
17.	Geometry of linear programming problems	01-09-2022	
18.	Definitions and Theorems	02-09-2022	
19.	Solution of a system of linear simultaneous equations	05-09-2022	
20.	Pivotal reduction of a general system of equations	05-09-2022	
21.	Tutorial Class	06-09-2022	
22.	Motivation to the Simplex method	07-09-2022	
23.	Simplex Algorithm - Problems	08-09-2022	
24.	Problems	09-09-2022	
25.	Duality in Linear Programming	12-09-2022	
26.	Dual Simplex method		
27.	Big –M method	12-09-2022	
28.	Problems	13-09-2022	
29.	Two – Phase method	14-09-2022	
30.	Problems	15-09-2022	
31.	Tutorial Class	16-09-2022	

UNIT III- TRANSPORTATION PROBLEM

CO3 :To state transportation and assignment problem as a linear programming problem to determineSimplex method.

TB1 : ENGINEERING OPTIMIZATION – THEORY AND PRACTICE, S.S.RAO, NEW AGE INTERNATIONAL (P) LIMITED, 3RD EDITION,1998.
TB2: OPERATIONS RESEARCH By S.D. SHARMA – KEDARNATH.

32.	Introduction to Transportation Problem	19-09-2022	Lecture interspersed with discussions
33.	Finding initial basic feasible solution by north west corner rule - Problems	19-09-2022	
34.	Least Cost Method - Problems	20-09-2022	
35.	Vogel's Approximation Method - Problems	21-09-2022 22-09-2022	
36.	Tutorial Class	23-09-2022	
37.	Testing for optimality in Balanced Transportation Problem	26-09-2022	
38.	MODI Method - Problems	27-09-2022 28-09-2022	
39.	Special cases in Transportation Problem- Unbalanced Transportation Problem	29-09-2022 30-09-2022	
40.	Degeneracy on Transportation Problem	03-10-2022 03-10-2022	

41.	Assignment Problems- Balanced Assignment Problems	04-10-2022	
42.	Assignment Problems - Unbalanced Assignment Problems	05-10-2022	
43.	Problems	06-10-2022	
44.	Travelling Salesman Problems	07-10-2022 10-10-2022	
45.	Problems	10-10-2022	
46.	Tutorial Class	11-10-2022	

UNIT – IV NON-LINEAR PROGRAMMING

CO4 : To study and explain nonlinear programming techniques, unconstrained or constrained, and define exterior and interior penalty functions for optimization problems.

TB1 : ENGINEERING OPTIMIZATION – THEORY AND PRACTICE, S.S.RAO, NEW AGE INTERNATIONAL (P) LIMITED, 3RD EDITION,1998.
TB2: OPERATIONS RESEARCH By S.D. SHARMA – KEDARNATH.

47.	Unconstrained cases, One dimensional minimization methods	12-10-2022 13-10-2022	Lecture interspersed with discussions
48.	Classifications	14-10-2022	
49.	Fibonacci Method	15-10-2022	
50.	Quadratic Interpolation Method	17-10-2022	
51.	Univariate Method	17-10-2022	
52.	Powell's Method	18-10-2022	
53.	Steepest descent method	19-10-2022	
54.	Tutorial Class	20-10-2022	
55.	Constrained cases Characteristics of a constrained problem	21-10-2022	
56.	Classification	24-10-2022	
57.	Basic approach of PenaltyFunction method	24-10-2022	
58.	Basic approaches of Interior and Exterior penalty function methods	25-10-2022 26-10-2022	
59.	Introduction to Convex Programming Problem	27-10-2022	
60.	Tutorial Class	28-10-2022	

UNIT –V DYNAMIC PROGRAMMING

CO 5: To understand the optimal control problem for dynamic systems using Bellman's principle of Optimality.

TB1 : ENGINEERING OPTIMIZATION – THEORY AND PRACTICE, S.S.RAO, NEW AGE INTERNATIONAL (P) LIMITED, 3RD EDITION,1998.
TB2: OPERATIONS RESEARCH By S.D. SHARMA – KEDARNATH.

61.	Dynamic programming multistage decision processes, types	31-10-2022 31-10-2022	Lecture interspersed with discussions
62.	Problems	01-11-2022	

[illegible]	Conceptof sub optimization and the principle of optimality	02-11-2022 03-11-2022	
64.	Problems	04-11-2022 07-11-2022	
65.	Computational procedure in dynamic programming	07-11-2022 08-11-2022	
66.	Problems	09-11-2022 10-11-2022	
67.	Examples illustrating the calculus method of solution	11-11-2022 14-11-2022 14-11-2022	
68.	Problems	15-11-2022 16-11-2022	
69.	Examples illustrating the tabular method of solution	17-11-2022 18-11-2022 21-11-2022	
70.	Problems	22-11-2022 23-11-2022 24-11-2022	
71.	Tutorial Class	25-11-2022	

G. Koteswaramma
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Enikepadu, Vijayawada, 521108
Approved by AICTE, Affiliated to JNTUK, Kakinada
(ISO 9001:2015 Certified Institution)
Department of Computer Science and Engineering

TENTATIVE LESSON PLAN: R203105B

Course Title: Software Project Management (R203105B)		
Section: III CSE-B	Date: 01/08/2022	Page No: 01 of 04
Revision No:	Prepared By: Ch.Ambedkar	Approved By: HOD

Tools: Black Board, PowerPoint Presentations

No. of Periods	Topic	Date	Mode of Delivery
UNIT I : **Conventional Software Management, Evolution of Software Economics, Improving Software Economics, The old way and the new**			
CO 1 : Understand why majority of the software projects fails and how that failure probability can be reduced effectively			
Text Book : Software Project Management, Walker Royce: Pearson Education			
1	Conventional Software Management:	1-8-2022	Lecture interspersed with discussions
2,3	The waterfall model - In theory - In practice	2,3-8-2022	
4	Conventional Software Management performance	4-8-2022	
5	Evolution of Software Economics:	5-8-2022	
6	Software Economics	6-8-2022	
7	Pragmatic software cost Estimation	8-8-2022	
8	Improving Software Economics:	9-8-2022	
9	Reducing Software product size	10-8-2022	
10	Improving software Processes	11-8-2022	
11	Improving team effectiveness	12-8-2022	
12	Improving automation through software environments	13-8-2022	
13	Achieving required Quality	16-8-2022	
14	The old way and the new:	17-8-2022	
15,16	The principles of conventional software Engineering	18,20-8-2022	

17,18	Principles of modern software management	22,23-8-2022	
19	Tutorial	24-8-2022	
No. of Periods	**Topic**	**Date**	**Mode of Delivery**
UNIT II : **Life cycle phases, Artifacts of the process** **CO 2** : Apply software metrics and attain economics in a project and understand conventional and modern software engineering principles. **Text Book** : **Software Project Management, Walker Royce: Pearson Education.**			
20	Life cycle phases:	25-8-2022	Lecture interspersed with discussions
21	Engineering and Production stages	26-8-2022	
22	Inception Phase	27-8-2022	
23	Elaboration Phase	29-8-2022	
24	Construction Phase	30-8-2022	
25	Transition Phase	1-9-2022	
26	The artifact sets	2-9-2022	
27	Management artifacts	3-9-2022	
28	Engineering Artifacts	5-9-2022	
29	Pragmatic artifacts	6-9-2022	
30	Tutorial	7-9-2022	
No. of Periods	**Topic**	**Date**	**Mode of Delivery**
UNIT III : **Model based software architectures, Checkpoints of the process, Iterative Process Planning** **CO 3** : Will have good knowledge of various phases in modern software management and artifacts of process and Understand the software architecture perspectives **Text Book** : **Software Project Management, Walker Royce: Pearson Education**			
31	A Management perspective	8-9-2022	Lecture interspersed with discussions
32	A Technical Perspective	9-9-2022	
33	Software process workflows	10-9-2022	
34	Iteration workflows.	12-9-2022	
35	Major mile stones	13-9-2022	

36	Minor Milestones	14-9-2022	Lecture interspersed with discussions
37	Periodic status Assessments	15-9-2022	
38	Iterative Process Planning	16-9-2022	
39	Work breakdown structures Conventional WBS Issues	17-9-2022	
40	Evolutionary WBS	19-9-2022	
41	Planning guidelines	20-9-2022	
42	The cost &Schedule estimating process	21-9-2022	
43	The Iteration planning process	23-9-2022	
44	Pragmatic planning.	10-10-2022	
45	Tutorial	11-10-2022	
No. of Periods	**Topic**	12-10-2022	**Mode of Delivery**

UNIT IV : Project Organizations and Responsibilities, Project Control and Process instrumentation

CO 4 : Understand the Project Organizations and Responsibilities of teams Understand the milestones ,Project planning and Project Scheduling

Text Book : Software Project Management, Walker Royce: Pearson Education

46	Line-of-Business Organizations	14-10-2022	Lecture interspersed with discussions
47,48	Project Organizations	15,17-10-2022	
49	Evolution of Organizations	18-10-2022	
50	Tools-Automation Building blocks	19-10-2022	
51	The Project Environment	20-10-2022	
52	Project Control and Process instrumentation:	25-10-2022	
53,54	The seven core Metrics	26-10-2022	
55	Management Indicators	27,28-10-2022	
56	Quality indicators	29-10-2022	
57	Life cycle expectation	31-10-2022	
58	Pragmatic Software Metrics	1-11-2022	

59	Metrics automation	2-11-2022	
60	Tutorial	3-11-2022	
No. of Periods	**Topic**	**Date**	**Mode of Delivery**
UNIT V	**: Agile Methodology, Fundamentals of DevOps**		
CO 4	: Understand the Agile Project Management process that enable planning, management and control Understand best practices in Continuous Development, Configuration Management, Continuous Integration, and finally, Continuous Monitoring of software throughout its development life cycle.		
61	Agile Methodology	4-11-2022	Lecture interspersed with discussions
62	ADAPTing to Scrum	5-11-2022	
63	Patterns for Adopting Scrum	8-11-2022	
64	Iterating towards Agility	10-11-2022	
65	Fundamentals of DevOps: Architecture	11-11-2022	
66	Deployments, Orchestration	14-11-2022	
67	Need, Instance of applications, DevOps delivery pipeline	15-11-2022	
68	DevOps eco system. DevOps adoption in projects	18-11-2022	
69	Technology aspects, Agiling capabilities	21-11-2022	
70	Tool stack implementation, People aspect, processes	23-11-2022	
71	Tutorial	25-11-2022	
72	Tutorial	26-11-2022	

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TENTATIVE LESSON PLAN: R1941052
UML & DESIGN PATTERNS

Course Title: UML & DESIGN PATTERNS (R1941052)		
Section : CSE A	Date : 04/08/2022	Page No : 01 of 03
Revision No : 00	Prepared By : CH. PAVANI	Approved By : HOD

Tools: Black board, PPTs, Moodle, Google Meet

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I Introduction to UML **Structural Modeling** **CO 1: Describes to understand the fundamentals of object modeling.** **TB1: The unified Modeling language user guide by Grady Booch, James Rumbaugh, Ivar Jacobson, Pearson**			
1	Introduction to UML	From: **04/08/222** To: **15/08/22**	Lecture Interspersed With discussions
2	Importance of modeling, principles of modeling		
3	Object oriented modeling, conceptual model of the UML		
4	Architecture		
5	Software Development Life Cycle		
6	Structural Modeling: Classes		
7	Relationships		
8	Common Mechanisms, and diagrams		
9	Advanced classes, advanced relationships		
10	Object diagrams		
11	Common modeling techniques		
12	Tutorial		
UNIT-II Behavioral Modeling **CO2: Describes to understand and differentiate Unified Process from other approaches** **TB1: The unified Modeling language user guide by Grady Booch, James Rumbaugh, Ivar Jacobson, Pearson**			
13	Behavioural Modeling		Lecture interspersed
14	Interactions		
15	Interaction diagrams		
16	Use cases, Use case Diagrams		

17	Activity Diagrams		with discussions
18	Activity Diagrams Examples	From: **16/08/22**	
19	Events and signals		
20	State machines	To: **26/08/22**	
21	State chart diagrams		
22	State chart diagrams Examples		
23	Tutorial		
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
UNIT-III Advanced Behavioral Modeling, Design Patterns **CO3: Describes to design with static UML diagrams** **TB1: The unified Modeling language user guide by Grady Booch, James Rumbaugh, Ivar Jacobson, Pearson** **TB2: Design Patterns, Erich Gamma, Pearson**			
24	Advanced Behavioral Modeling		
25	Architectural Modeling		
26	Components		
27	Deployment		
28	Component diagrams and Deployment diagrams	From: **27/08//22**	
29	Common modeling techniques for component		
30	Common modeling techniques for deployment diagrams	To: **20/09/22**	
31	Design Pattern		Lecture interspersed with discussions
32	Introduction of design patterns		
33	Design Patterns in Smalltalk MVC		
34	Describing Design Patterns		
35	The Catalog of Design Patterns		
36	Organizing the Catalog		
37	How Design Patterns Solve Design Problems		
38	How to Select a Design Pattern, Using a Design Pattern		
39	Tutorial		
UNIT-IV Creational Patterns, Structural Patterns			

CO4: Describes to improve the software design with design patterns TB1: Design Patterns, Erich Gamma, Pearson			
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
40	Creational Patterns	From: **21/09/22** To: **14/10/22**	Lecture interspersed with discussions
41	Abstract Factory		
42	Builder		
43	Factory Method		
44	Prototype		
45	Singleton		
46	Structural Patterns		
47	Adapter		
48	Bridge, Composite		
49	Decorator		
50	Façade, Flyweight		
51	Proxy		
52	Tutorial		
UNIT-V Behavioral Pattern **CO5: To test the software against its requirements specification** **TB1: Design Patterns, Erich Gamma, Pearson**			
53	Behavioral Patterns	From: **15/10/22** To: **24/10/22**	
54	Chain of Responsibility		
55	Command, Interpreter		
56	Iterator		
57	Mediator		
58	Memento		
59	Observer, Strategy		
60	Template Method,		
61	What to Expect from Design Patterns		
62	Tutorial		

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TENTATIVE LESSON PLAN: R1941053
MACHINE LEARNING

Course Title: MACHINE LEARNING		
Section : CSE A	**Date : 04/08/2022**	**Page No :** 01 of 03
Revision No : 00	**Prepared By : DR.D.ANUSHA**	**Approved By : HOD**

Tools: Black board, PPTs, Moodle, Google Meet

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I Introduction **CO 1: Identify machine learning techniques suitable for a given problem** **TB1: T.M. Mitchell, "Machine Learning", McGraw-Hill, 1997**			
1	Definition of learning systems,	From: **04/08/222** To: **15/08/22**	Lecture Interspersed With discussions
2	Aspects of developing a learning system: training data, concept representation:		
3	The concept learning task		
4	Concept learning as search through a hypothesis space		
5	General-to-specific ordering of hypotheses		
6	Finding maximally specific hypotheses		
7	Version spaces and the candidate elimination algorithm		
8	Learning conjunctive concepts		
9	The importance of inductive bias		
10	Goals and applications of machine learning		
11	Common modeling techniques		
12	Tutorial		
UNIT-II Decision Tree Learning **CO2:** Solve the problems using various machine learning techniques **TB1:** Ethern Alpaydin, "Introduction to Machine Learning", MIT Press, 2004			
13	Decision Tree Learning: Representing concepts as decision trees		
14	Recursive induction of decision trees		
15	Picking the best splitting attribute: entropy and information gain		

16	Searching for simple trees and computational complexity	From: **16/08/22** To: **26/08/22**	Lecture interspersed with discussions
17	Occam's razor, Overfitting, noisy data, and pruning		
18	Experimental Evaluation of Learning Algorithms: Measuring the accuracy of learned hypotheses.		
19	Comparing learning algorithms: cross-validation		
20	learning curveS		
21	statistical hypothesis testing		
22	Examples		
23	Tutorial		
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
UNIT-III Computational Learning Theory: **CO3: Apply Dimensionality reduction techniques** **TB1: Ethern Alpaydin, "Introduction to Machine Learning", MIT Press, 2004**			
24	Advanced Behavioral Modeling Computational Learning Theory:	From: **27/08//22** To: **20/09/22**	Lecture interspersed with iscussions
25	learning in the limit; probably approximately correct (PAC) learning		
26	Sample complexity for infinite hypothesis spaces		
27	Vapnik-Chervonenkis dimension		
28	Rule Learning: Propositional and First-Order		
29	Translating decision trees into rule		
30	Heuristic rule induction using separate and conquer and information gain		
31	First-order Horn-clause induction (Inductive Logic Programming) and Foil		
32	Learning recursive rules		
33	Inverse resolution		
34	Golem, and Progol		
35	Models of learnability		
36	First-Order lOGIC		

37	Examples		
38	Applications		
39	Tutorial		
UNIT-IV Artificial Neural Networks **CO4: Design application using machine learning techniques** **TB1: Ethern Alpaydin, "Introduction to Machine Learning", MIT Press, 2004**			
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
40	Artificial Neural Networks: Neurons and biological motivation	From: **21/09/22** To: **14/10/22**	Lecture interspersed with discussions
41	Linear threshold units. Perceptrons: representational limitation and		
42	gradient descent training		
43	Multilayer networks and backpropagation		
44	Hidden layers and constructing intermediate		
45	distributed representations. Overfitting		
46	learning network structure		
47	recurrent networks. Support Vector Machines: Maximum margin linear separators		
48	Quadractic programming solution to finding maximum margin separators		
49	Kernels for learning non-linear functions.		
50	Maximum margin linear separators		
51	Applications of Kernel		
52	Tutorial		
UNIT-V Bayesian Learning **CO5: To learn about support vector machine algorithms** **TB1: Ethern Alpaydin, "Introduction to Machine Learning", MIT Press, 2004**			
53	Bayesian Learning: Probability theory and Bayes rule.	From: **15/10/22** To: **29/10/22**	Lecture interspersed with discussions
54	Naive Bayes learning algorithm		
55	Parameter smoothing		
56	Generative vs. discriminative training		
57	Logisitic regression		
58	Bayes nets and Markov nets for representing dependencies.		
60	k-Nearest-neighbor algorithm		

61	Case-based learning.		
62	Tutorial		

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TENTATIVE LESSON PLAN: R1941049

Course Title: EMBEDDED SYSTEMS (R1941049)		
Section : A	**Date : 12/07/2022**	**Page No :** 01 of 03
Revision No : 00	**Prepared By : S.L.V.S.Jyothi**	**Approved By : HOD**

Tools: Black board, PPTs

UNIT –I INTRODUCTION

CO1: Understand the building blocks of typical embedded systems and different memory technology and memory types.

TB : Embedded Systems by Shibu k.v.

No. of Periods	TOPIC	Date	Mode of Delivery
1.	Embedded vs. General computing Systems, History of Embedded Systems.	**From: 12/07/2022 To: 23/07/2022**	Lecture interspersed with discussions
2.	Classifications of Embedded Systems		
3.	major applications of Embedded Systems		
4.	The Typical Embedded System-Core of the Embedded Systems		
5.	Memory		
6.	Passive System and other system Components		
7.	Sensors and Actuators		
8.	Embedded Firmware		
10.	Domain Specific Examples of an Embedded Systems		
11.	Communication Interface		
12.	Characteristics and Quality attributes of an Embedded Systems Application Specific Embedded System-Washing Machine		

UNIT –II EMBEDDED HARDWARE DESIGN

CO2: Student can understand the principles and the implementation of various communication devices.

TB: EMBEDDED SYSTEMS BY RAJ KAMAL SECOND EDITION.

No. of Periods	TOPIC	Date	Mode of Delivery
14.	Analog and Digital Electronic Components	**From: 25/07/2022 To:**	Lecture interspersed
15.	I/O Types and Examples		
16.	Serial Communication Devices		
17.	Parallel Device Ports		

18.	Wireless Devices	**13/08/2022**	with discussions
19.	Timer and Counting devices		
20.	Real time Clock, Watchdog Timer		

UNIT –III EMBEDDED FIRMWARE DESIGN

CO3: Student can understand the concept of firmware design approaches, ISR concept and interrupt sources.

TB : EMBEDDED SYSTEMS BY RAJ KAMAL SECOND EDITION.

No. of Periods	TOPIC	Date	Mode of Delivery
21.	Embedded Firmware design approaches	**From: 16/08/2022 To: 17/09/2022**	Lecture interspersed with discussions
22.	Embedded Firmware development languages		
23.	ISR concept, Interrupt Sources		
24.	Interrupt Servicing mechanisms		
25.	Multiple Interrupts		
26.	DMA		
27.	Device Driver Programming		
28.	Concepts of C vs Embedded C , Compiler vs Cross Compiler		

UNIT –IV REAL TIME OPERATIONG SYSTEM AND HARDWARE SOFTWARE CO DESIGN

CO4: Student can understand the os basics and rtos and also the design of hardware and software interfaces

TB1: Embedded systems by Shibu k.v.

TB2: Embedded systems by Rajkamal second edition.

No. of Periods	TOPIC	Date	Mode of Delivery
29.	Operating Systems Basics	**From: 19/09/2022 To: 08/09/2022**	Lecture interspersed with discussions
30.	Types of Operating Systems		
31.	Task, Process and Threads		
32.	Multiprocessing, Multitasking		
33.	Device Drivers		
34.	Task Scheduling		
35.	Threads processes scheduling		
36.	Task Communication		
37.	Task Synchronization, How to choose an RTOS		
38.	Fundamental Issues in Hardware Software Co-		

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	Design		
39.	Computational Models in Embedded design		
40.	Hardware Software Trade-Offs		
41.	Integration of Hardware and Firmware, ICE		

UNIT –V EMBEDDED SYSTEM DEVELOPMENT, IMPLEMENTATION AND TESTING

CO5: Student can understand the concept of IDE and Hardware debugging.

CO6: Student can understand the debugging tools and testing tools

TB1: EMBEDDED SYSTEMS ARCHITECTURE BY TAMMY NEORGAARD.

TB2: Embedded systems by Rajkamal second edition.

No. of Periods	TOPIC	Date	Mode of Delivery
42.	The Integrated development Environment	**From: 10/10/2022 To: 26/10/2022**	Lecture interspersed with discussions
43.	Types of files generated on Cross-Compilation		
44.	Dissemblers / Decompiler		
45.	Embedded tools		
46.	Simulators, Emulators, Debugging		
47.	Target Hardware debugging		
48.	Boundary Scan		
49.	Embedded Software Development process and tools		
50.	The Main Software Utility Tool		
51.	CAD and the Hardware		
52.	Translation tools pre-processors		
53.	Debugging Tools		
54.	Quality assurance and Testing of the design		
55.	Testing on host machine		
56.	Simulators		
57.	Laboratory Tools		
58.	TUTORIAL		

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TENTATIVE LESSON PLAN: R1941052
UML & DESIGN PATTERNS

Course Title: UML & DESIGN PATTERNS (R1941052)		
Section : CSE B	Date : 04/08/2022	Page No : 01 of 03
Revision No : 00	Prepared By : CH. PAVANI	Approved By : HOD

Tools: Black board, PPTs, Moodle, Google Meet

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I Introduction to UML **Structural Modeling** **CO 1: Describes to understand the fundamentals of object modeling.** **TB1: The unified Modeling language user guide by Grady Booch, James Rumbaugh, Ivar Jacobson, Pearson**			
1	Introduction to UML	From: **04/08/222** To: **15/08/22**	Lecture Interspersed With discussions
2	Importance of modeling, principles of modeling		
3	Object oriented modeling, conceptual model of the UML		
4	Architecture		
5	Software Development Life Cycle		
6	Structural Modeling: Classes		
7	Relationships		
8	Common Mechanisms, and diagrams		
9	Advanced classes, advanced relationships		
10	Object diagrams		
11	Common modeling techniques		
12	Tutorial		
UNIT-II Behavioral Modeling **CO2: Describes to understand and differentiate Unified Process from other approaches** **TB1: The unified Modeling language user guide by Grady Booch, James Rumbaugh, Ivar Jacobson, Pearson**			
13	Behavioural Modeling		Lecture interspersed
14	Interactions		
15	Interaction diagrams		
16	Use cases, Use case Diagrams		

17	Activity Diagrams	From: **16/08/22** To: **26/08/22**	with discussions
18	Activity Diagrams Examples		
19	Events and signals		
20	State machines		
21	State chart diagrams		
22	State chart diagrams Examples		
23	Tutorial		
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
UNIT-III Advanced Behavioral Modeling, Design Patterns **CO3: Describes to design with static UML diagrams** **TB1: The unified Modeling language user guide by Grady Booch, James Rumbaugh, Ivar Jacobson, Pearson** **TB2: Design Patterns, Erich Gamma, Pearson**			
24	Advanced Behavioral Modeling	From: **27/08//22** To: **20/09/22**	Lecture interspersed with discussions
25	Architectural Modeling		
26	Components		
27	Deployment		
28	Component diagrams and Deployment diagrams		
29	Common modeling techniques for component		
30	Common modeling techniques for deployment diagrams		
31	Design Pattern		
32	Introduction of design patterns		
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34	Describing Design Patterns		
35	The Catalog of Design Patterns		
36	Organizing the Catalog		
37	How Design Patterns Solve Design Problems		
38	How to Select a Design Pattern, Using a Design Pattern		
39	Tutorial		
UNIT-IV Creational Patterns, Structural Patterns			

CO4: Describes to improve the software design with design patterns **TB1: Design Patterns, Erich Gamma, Pearson**			
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
40	Creational Patterns	From: **21/09/22** To: **14/10/22**	Lecture interspersed with discussions
41	Abstract Factory		
42	Builder		
43	Factory Method		
44	Prototype		
45	Singleton		
46	Structural Patterns		
47	Adapter		
48	Bridge, Composite		
49	Decorator		
50	Façade, Flyweight		
51	Proxy		
52	Tutorial		
UNIT-V Behavioral Pattern **CO5: To test the software against its requirements specification** **TB1: Design Patterns, Erich Gamma, Pearson**			
53	Behavioral Patterns	From: **15/10/22** To: **24/10/22**	
54	Chain of Responsibility		
55	Command, Interpreter		
56	Iterator		
57	Mediator		
58	Memento		
59	Observer, Strategy		
60	Template Method,		
61	What to Expect from Design Patterns		
62	Tutorial		

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TENTATIVE LESSON PLAN: R1941053

MACHINE LEARNING

Course Title: MACHINE LEARNING		
Section : CSE B	**Date : 04/08/2022**	**Page No :** 01 of 03
Revision No : 00	**Prepared By : DR.D.ANUSHA**	**Approved By : HOD**

Tools: Black board, PPTs, Moodle, Google Meet

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I Introduction **CO 1: Identify machine learning techniques suitable for a given problem** **TB1: T.M. Mitchell, "Machine Learning", McGraw-Hill, 1997**			
1	Definition of learning systems,	From: **04/08/222** To: **15/08/22**	Lecture Interspersed With discussions
2	Aspects of developing a learning system: training data, concept representation:		
3	The concept learning task		
4	Concept learning as search through a hypothesis space		
5	General-to-specific ordering of hypotheses		
6	Finding maximally specific hypotheses		
7	Version spaces and the candidate elimination algorithm		
8	Learning conjunctive concepts		
9	The importance of inductive bias		
10	Goals and applications of machine learning		
11	Common modeling techniques		
12	Tutorial		
UNIT-II Decision Tree Learning **CO2:** Solve the problems using various machine learning techniques **TB1:** Ethern Alpaydin, "Introduction to Machine Learning", MIT Press, 2004			
13	Decision Tree Learning: Representing concepts as decision trees		
14	Recursive induction of decision trees		
15	Picking the best splitting attribute: entropy and information gain		

16	Searching for simple trees and computational complexity	From: **16/08/22** To: **26/08/22**	Lecture interspersed with discussions
17	Occam's razor, Overfitting, noisy data, and pruning		
18	Experimental Evaluation of Learning Algorithms: Measuring the accuracy of learned hypotheses.		
19	Comparing learning algorithms: cross-validation		
20	learning curveS		
21	statistical hypothesis testing		
22	Examples		
23	Tutorial		
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
UNIT-III Computational Learning Theory: **CO3: Apply Dimensionality reduction techniques** **TB1: Ethern Alpaydin, "Introduction to Machine Learning", MIT Press, 2004**			
24	Advanced Behavioral Modeling Computational Learning Theory:	From: **27/08//22** To: **20/09/22**	Lecture interspersed with iscussions
25	learning in the limit; probably approximately correct (PAC) learning		
26	Sample complexity for infinite hypothesis spaces		
27	Vapnik-Chervonenkis dimension		
28	Rule Learning: Propositional and First-Order		
29	Translating decision trees into rule		
30	Heuristic rule induction using separate and conquer and information gain		
31	First-order Horn-clause induction (Inductive Logic Programming) and Foil		
32	Learning recursive rules		
33	Inverse resolution		
34	Golem, and Progol		
35	Models of learnability		
36	First-Order lOGIC		

37	Examples		
38	Applications		
39	Tutorial		

UNIT-IV Artificial Neural Networks
CO4: Design application using machine learning techniques
TB1: Ethern Alpaydin, "Introduction to Machine Learning", MIT Press, 2004

No. of Periods	TOPIC	Date	Mode of Delivery
40	Artificial Neural Networks: Neurons and biological motivation	From: **21/09/22** To: **14/10/22**	Lecture interspersed with discussions
41	Linear threshold units. Perceptrons: representational limitation and		
42	gradient descent training		
43	Multilayer networks and backpropagation		
44	Hidden layers and constructing intermediate		
45	distributed representations. Overfitting		
46	learning network structure		
47	recurrent networks. Support Vector Machines: Maximum margin linear separators		
48	Quadractic programming solution to finding maximum margin separators		
49	Kernels for learning non-linear functions.		
50	Maximum margin linear separators		
51	Applications of Kernel		
52	Tutorial		

UNIT-V Bayesian Learning
CO5: To learn about support vector machine algorithms
TB1: Ethern Alpaydin, "Introduction to Machine Learning", MIT Press, 2004

53	Bayesian Learning: Probability theory and Bayes rule.	From: **15/10/22** To: **29/10/22**	Lecture interspersed with discussions
54	Naive Bayes learning algorithm		
55	Parameter smoothing		
56	Generative vs. discriminative training		
57	Logisitic regression		
58	Bayes nets and Markov nets for representing dependencies.		
60	k-Nearest-neighbor algorithm		

61	Case-based learning.		
62	Tutorial		

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TENTATIVE LESSON PLAN: R1941049

Course Title: EMBEDDED SYSTEMS (R1941049)		
Section : B	Date : 12/07/2022	Page No : 01 of 03
Revision No : 00	Prepared By : S.L.V.S.Jyothi	Approved By : HOD

Tools: Black board, PPTs

UNIT –I INTRODUCTION

CO1: Understand the building blocks of typical embedded systems and different memory technology and memory types.

TB : Embedded Systems by Shibu k.v.

No. of Periods	TOPIC	Date	Mode of Delivery
1.	Embedded vs. General computing Systems, History of Embedded Systems.	From: 12/07/2022 To: 23/07/2022	Lecture interspersed with discussions
2.	Classifications of Embedded Systems		
3.	major applications of Embedded Systems		
4.	The Typical Embedded System-Core of the Embedded Systems		
5.	Memory		
6.	Passive System and other system Components		
7.	Sensors and Actuators		
8.	Embedded Firmware		
10.	Domain Specific Examples of an Embedded Systems		
11.	Communication Interface		
12.	Characteristics and Quality attributes of an Embedded Systems Application Specific Embedded System-Washing Machine		

UNIT –II EMBEDDED HARDWARE DESIGN

CO2: Student can understand the principles and the implementation of various communication devices.

TB: EMBEDDED SYSTEMS BY RAJ KAMAL SECOND EDITION.

No. of Periods	TOPIC	Date	Mode of Delivery
14.	Analog and Digital Electronic Components	From: 25/07/2022 To:	Lecture interspersed
15.	I/O Types and Examples		
16.	Serial Communication Devices		
17.	Parallel Device Ports		

18.	Wireless Devices	**13/08/2022**	with discussions
19.	Timer and Counting devices		
20.	Real time Clock, Watchdog Timer		

UNIT –III EMBEDDED FIRMWARE DESIGN

CO3: Student can understand the concept of firmware design approaches, ISR concept and interrupt sources.

TB : EMBEDDED SYSTEMS BY RAJ KAMAL SECOND EDITION.

No. of Periods	TOPIC	Date	Mode of Delivery
21.	Embedded Firmware design approaches	**From: 16/08/2022 To: 17/09/2022**	Lecture interspersed with discussions
22.	Embedded Firmware development languages		
23.	ISR concept, Interrupt Sources		
24.	Interrupt Servicing mechanisms		
25.	Multiple Interrupts		
26.	DMA		
27.	Device Driver Programming		
28.	Concepts of C vs Embedded C , Compiler vs Cross Compiler		

UNIT –IV REAL TIME OPERATIONG SYSTEM AND HARDWARE SOFTWARE CO DESIGN

CO4: Student can understand the os basics and rtos and also the design of hardware and software interfaces

TB1: Embedded systems by Shibu k.v.

TB2: Embedded systems by Rajkamal second edition.

No. of Periods	TOPIC	Date	Mode of Delivery
29.	Operating Systems Basics	**From: 19/09/2022 To: 08/09/2022**	Lecture interspersed with discussions
30.	Types of Operating Systems		
31.	Task, Process and Threads		
32.	Multiprocessing, Multitasking		
33.	Device Drivers		
34.	Task Scheduling		
35.	Threads processes scheduling		
36.	Task Communication		
37.	Task Synchronization, How to choose an RTOS		
38.	Fundamental Issues in Hardware Software Co-		

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TENTATIVE LESSONPLAN

	Design		
39.	Computational Models in Embedded design		
40.	Hardware Software Trade-Offs		
41.	Integration of Hardware and Firmware, ICE		

UNIT –V EMBEDDED SYSTEM DEVELOPMENT, IMPLEMENTATION AND TESTING

CO5: Student can understand the concept of IDE and Hardware debugging.

CO6: Student can understand the debugging tools and testing tools

TB1: EMBEDDED SYSTEMS ARCHITECTURE BY TAMMY NEORGAARD.

TB2: Embedded systems by Rajkamal second edition.

No. of Periods	TOPIC	Date	Mode of Delivery
42.	The Integrated development Environment	**From: 10/10/2022 To: 26/10/2022**	Lecture interspersed with discussions
43.	Types of files generated on Cross-Compilation		
44.	Dissemblers / Decompiler		
45.	Embedded tools		
46.	Simulators, Emulators, Debugging		
47.	Target Hardware debugging		
48.	Boundary Scan		
49.	Embedded Software Development process and tools		
50.	The Main Software Utility Tool		
51.	CAD and the Hardware		
52.	Translation tools pre-processors		
53.	Debugging Tools		
54.	Quality assurance and Testing of the design		
55.	Testing on host machine		
56.	Simulators		
57.	Laboratory Tools		
58.	TUTORIAL		

Signature of the Faculty

Signature of the HOD