



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : NAVEEN V
COURSE CODE/TITLE : 21MAT31/TRANSFORM CALCULUS, FOURIER SERIES AND NUMERICAL TECHNIQUES
YEAR/ SEMESTER/SECTION : II / III
BRANCH : AI&ML

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: Laplace Transform						
1	Definition and Laplace transforms of elementary functions	L+D	BB	1	1	31/10/2022
2	Shifting property and examples	L+D	BB	1	2	3/11/2022
3	Multiplication by 't' property and examples	L+D	BB	1	3	4/11/2022
4	Division by 't' property and examples	L+D	BB	1	4	7/11/2022
5	Laplace transforms of Periodic functions	L+D	BB	1	5	8/11/2022
6	unit-step function	L+D	BB	1	6	10/11/2022
7	Inverse Laplace Transform: Definition and problems	L+D	BB	1	7	12/11/2022
8	Inverse Laplace Transform by perfect square	L+D	BB	1	8	14/11/2022
9	Inverse Laplace Transform by partial fractions, logarithmic functions	L+D	BB	1	9	15/11/2022

10	Convolution theorem to find the inverse Laplace transforms	L+D	BB	1	10	17/11/2022
11	Solution of linear differential equations using Laplace transforms	L+D	BB	1	11	18/11/2022
Module 2: Fourier Series						
14	Periodic functions, Dirichlet's condition	L+D	BB	1	12	21/11/2022
15	Fourier series of periodic functions for the period $(0, 2\pi)$	L+D	BB	1	13	22/11/2022
16	Fourier series of periodic functions for an arbitrary period $(0, 2l)$	L+D	BB	1	14	24/11/2022
17	Fourier series in $(-\pi, \pi)$	L+D	BB	1	15	25/11/2022
18	Fourier series in $(-l, l)$	L+D	BB	1	16	26/11/2022
19	Fourier half range series in $(0, \pi)$	L+D	BB	1	17	1/12/2022
20	Fourier half range series in $(0, l)$	L+D	BB	1	18	2/12/2022
21	Practical Harmonic analysis	L+D	BB	2	20	5/12/2022, 6/12/2022
22	Miscellaneous problems	L+D	BB	1	21	8/12/2022
Module 3: Infinite Fourier Transforms and Z-Transforms						
24	Infinite Fourier transforms	L+D	BB	1	22	9/12/2022
25	Fourier Sine Transforms	L+D	BB	1	23	10/12/2022
26	Fourier Cosine Transforms	L+D	BB	1	24	12/12/2022
27	Inverse Fourier transforms	L+D	BB	1	25	13/12/2022
28	Basics, Standard functions of Z – Transforms	L+D	BB	1	26	15/12/2022
29	Damping and shifting rules	L+D	BB	1	27	16/12/2022
30	Problems on Z – Transforms	L+D	BB	1	28	19/12/2022
31	Inverse Z – Transforms	L+D	BB	2	30	20/12/2022, 22/12/2022

32	Solution of difference equations	L+D	BB	1	31	23/12/2022
33	Miscellaneous problems	L+D	BB	1	32	24/12/2022
Module 4: Numerical Solution of Partial Differential Equations						
34	Classifications of second-order partial differential equations	L+D	BB	2	34	26/12/2022,27/12/2022,
35	finite difference approximations to derivatives	L+D	BB	2	36	29/12/2022,30/12/2022
36	Solution of Laplace's equation using standard five-point formula	L+D	BB	2	38	31/12/2022,5/01/2023
37	Solution of heat equation by Schmidt explicit formula and Crank- Nicholson method	L+D	BB	2	40	6/01/2023,9/01/2023
38	Solution of the Wave equation	L+D	BB	1	41	10/01/2023
39	Miscellaneous problems	L+D	BB	1	42	12/01/2023
Module 5 : Numerical Solution of Second Order ODE's and Calculus of Variations						
40	Solution of second order D.E Introduction: Solution of second order D.E Runge – Kutta method	L+D	BB	1	43	13/01/2023
41	Solution of second order D.E by Milne's predictor and corrector method	L+D	BB	2	45	16/01/2023,17/01/2023
42	Variation of function and functional, variational problems	L+D	BB	2	47	19/01/2023,20/01/2023
43	Derivation of Euler's equation & problems	L+D	BB	2	49	23/01/2023,24/01/2023
44	Problems on Euler's equation	L+D	BB	1	50	27/01/2023
45	Geodesics on a plane	L+D	BB	1	51	28/01/2023
46	Miscellaneous problems	L+D	BB	1	52	30/01/2023
47	Written Quiz	L+D	BB	1	53	31/01/2023
48	Poster Presentation Assignment	L+D	BB	1	54	7/02/2023
49	Revision	L+D	BB	3	57	9/02/2023,10/02/2023, 11/02/2023

Text Books:

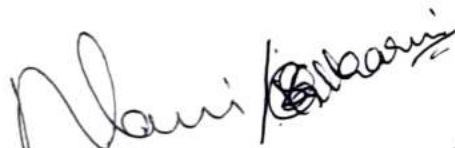
- B. S. Grewal: "Higher Engineering Mathematics", Khanna publishers, 44th Ed. 2018
- E. Kreyszig: "Advanced Engineering Mathematics", John Wiley & Sons, 10th Ed. (Reprint), 2016.

Reference Books:

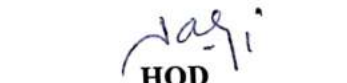
- V. Ramana: "Higher Engineering Mathematics" McGraw-Hill Education, 11th Ed.
- Srimanta Pal & Subodh C. Bhunia: "Engineering Mathematics" Oxford University Press, 3rd Reprint, 2016.

Details of the teaching aids:

1. BLACK BOARD USAGE
2. SELF STUDY


Course In charge


Module coordinator


HOD
Head of the Department
Dept. of Science and Humanitie
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K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING
LESSON PLAN 2022-22 ODD SEMESTER

NAME OF THE STAFF : Dr. AMULYASHREE S

SUBJECT CODE/NAME : 21CS32/ DATA STRUCTURES AND APPLICATIONS

SEMESTER/YEAR : III A/ II

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Basic Data structures Concepts and application						
1	Data Structures , Classifications (Primitive & Non Primitive), Data structure Operations, Review of Arrays, Structures	L+D	BB	2	2	2/11/2022
2	Self-Referential Structures	L+ D	BB	1	3	3/11/2022
3	Dynamic Memory Allocation Functions	L+ D	BB	1	4	8/11/2022
4	Representation of Linear Arrays in Memory, Dynamically allocated arrays	L+D	BB	2	6	9/11/2022 9/11/2022
5	Array Operations: Traversing, inserting, deleting, searching, and sorting.	L+D	BB	2	8	10/11/2022 12/11/2022
6	Multidimensional Arrays	L+D	BB	2	10	12/11/2022 15/11/2022
7	Representation of Polynomials with arrays	L+D	BB	2	12	16/11/2022
8	Sparse Matrices with arrays	L+D	BB	2	14	17/11/2022 22/11/2022
9	Revision	L+D	BB	1	15	23/11/2022
10	Data Structures , Classifications (Primitive & Non Primitive), Data structure Operations, Review of Arrays, Structures	L+D	BB	2	2	2/11/2022
MODULE 2: Stacks and Queues						
11	Stacks: Definition, Stack Operations and Array Representation of Stacks	L+D	BB	2	17	23/11/2022 24/11/2022

12	Stack Applications: evaluation of postfix expression	L+D	BB	1	18	25/11/2022
13	Infix to postfix conversion,	L+ D	BB	2	20	26/11/2022
IA-I (28/11/2022)						
14	Infix to prefix conversion Stacks using Dynamic Arrays	L+D	BB	2	22	1/12/2022 6/12/2022
15	Recursion - Factorial, GCD, Fibonacci Sequence	L+D	BB	1	22	7/12/2022
16	Tower of Hanoi, Ackerman's function	L+D	BB	1	23	7/12/2022
17	Queues: Definition, Array Representation and Queue Operations	L+D	BB	2	25	8/12/2022 13/12/2022
18	Circular Queues	L+D	BB	1	26	14/12/2022
19	Circular queues using Dynamic arrays	L+D	BB	1	27	14/12/2022
20	Dequeues, Priority Queues	L+D	BB	2	29	15/12/2022 20/12/2022
21	Revision	L+D	BB	1	30	21/12/2022
MODULE 3: Linked Lists						
22	Definition and classification of linked lists.	L+D	BB	1	31	21/12/2022
23	Representation of different types of linked list in memory	L+D	BB	1	32	22/12/2022
24	Linked list operations: Traversing, Searching, Insertion, and Deletion	L+D	BB	3	35	24/12/2022 24/12/2022 27/12/2022
25	Doubly Linked lists	L+D	BB	2	37	28/12/2022 28/12/2022
26	Circular linked lists	L+D	BB	1	38	29/12/2022
27	Circular linked lists	L+D	BB	1	39	28/12/2022
28	Header linked lists	L+D	BB	1	40	29/12/2022
29	Linked Stacks and Queues Applications of Linked lists	L+D	BB	1	41	30/12/2022
MODULE 4: Trees						
34	Terminology, Binary Trees, Properties of Binary trees	L+D	BB	1	42	31/12/2022
35	Array and linked Representation of Binary Trees	L+D	BB	1	43	31/12/2022
IA-II (2/12/2022)						
36	Binary Tree Traversals - Inorder, postorder and preorder	L+D	BB	1	44	6/1/2023
37	Threaded binary trees	L+D	BB	1	45	10/1/2023
38	Threaded binary trees	L+D	BB	1	46	11/1/2023
39	Binary Search Trees – Definition, Insertion, Deletion, Traversal, Searching	L+D	BB	1	47	11/1/2023
40	Application of tree – Evaluation of expression	L+D	BB	1	48	12/1/2023

MODULE 5: Graphs						
41	Trees 2: AVL tree	L+D	BB	2	50	17/1/2023 18/1/2023
42	Red-black tree	L+D	BB	2	52	18/1/2023 19/1/2023
43	Splay tree	L+D	BB	2	54	24/1/2023 25/1/2023
44	B-tree	L+D	BB	2	56	28/1/2023 28/1/2023
45	Definitions, Terminologies, Matrix and Adjacency List Representation Of Graphs	L+D	BB	1	57	30/1/2023
46	Elementary Graph operations, Traversal methods: Breadth First Search and Depth First Search.	L+D	BB	2	59	30/1/2023 31/1/2023
47	Hashing: Hash Table organizations, Hashing Functions, Static and Dynamic Hashing	L+D	BB	1	60	1/2/2023
IA-III (2/2/2023)						

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Basic Data structures Concepts and application						
1	Module 1 Lab Programs 1. Design, Develop and Implement a menu driven Program in C for the following Array Operations a. Creating an Array of N Integer Elements b. Display of Array Elements with Suitable Headings c. Exit. Support the program with functions for each of the above operations.	L+D, PS	BB	Lab Session-3HR	3	B1:8/11/2022 B2:2/11/2022 B3:31/10/2022
2	2. Design, Develop and Implement a menu driven Program in C for the following Array operations a. Inserting an Element (ELEM) at a given valid Position (POS) b. Deleting an Element at a given valid Position (POS)	L+D, PS	BB	Lab Session-3HR	6	B1:15/11/2022 B2:9/11/2022 B3:7/11/2022
MODULE 2: Stacks and Queues						
3	Module 2 Lab Programs 1. Design, Develop and Implement a menu driven Program in C for the following operations on STACK of Integers (Array Implementation of Stack with maximum size MAX) a. Push an Element on to Stack b. Pop an Element from Stack c. Demonstrate Overflow and Underflow situations on Stack d. Display the status of Stack e. Exit Support the program with appropriate functions for each of the above operations	L+D, PS	LCD+BB	Lab Session-3HR	9	B1:15/11/2022 B2:16/11/2022 B3:14/11/2022
4	Module 2 Lab Programs 2. Design, Develop and Implement a menu driven Program in C for the following operations on STACK of Integers (Array Implementation of Stack with maximum size MAX) a. Push an Element on to Stack b. Pop an Element from Stack	L+D, PS	LCD+BB	Lab Session-3HR	12	B1:15/11/2022 B2:16/11/2022 B3:14/11/2022

	c. Demonstrate Overflow and Underflow situations on Stack d. Display the status of Stack e. Exit Support the program with appropriate functions for each of the above operations					
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MODULE 3: Linked Lists

	Module 3 Lab Programs					
5	1. Singly Linked List (SLL) of Integer Data a. Create a SLL stack of N integer. b. Display of SLL c. Linear search. d. Create a SLL queue of N Students Data e. Concatenation of two SLL of integers.	L+D	BB	Lab Session-3HR	15	B1:6/12/2022 B2:7/12/2022 B3:5/12/2022
6	2. Design, Develop and Implement a menu driven Program in C for the following operations on Doubly Linked List (DLL) of Professor Data with the fields: ID, Name, Branch, Area of specialization a. Create a DLL stack of N Professor's Data. b. Create a DLL queue of N Professor's Data c. Display the status of DLL and count the number of nodes in it.	L+D	BB	Lab Session-3HR	18	B1:13/12/2022 B2:14/12/2022 B3:12/12/2022

MODULE 4: Trees

	Module 4 Lab Programs					
7	1. Given an array of elements, construct a complete binary tree from this array in level order fashion. That is, elements from left in the array will be filled in the tree level wise starting from level 0. Ex: Input: <pre> 1 / \ 2 3 /\ /\ 4 5 6</pre> arr[] = {1, 2, 3, 4, 5, 6} Output : Root of the following tree	L+D	LCD+BB	Lab Session-3HR	21	B1:20/12/2022 B2:21/12/2022 B3:19/12/2022

8	2. Design, Develop and Implement a menu driven Program in C for the following operations on Binary Search Tree (BST) of Integers a. Create a BST of N Integers b. Traverse the BST in Inorder, Preorder and Post Order	L+D	LCD+BB	Lab Session-3HR	24	B1:27/12/2023 B2:28/12/2023 B3:26/12/2023
MODULE 5: Graphs						
9	Module 5 Lab Programs 1. Design, Develop and implement a program in C for the following operations on Graph (G) of cities a. Create a Graph of N cities using Adjacency Matrix. b. Print all the nodes reachable from a given starting node in a diagraph using DFS/BFS method.	L+D	LCD+BB	Lab Session-3HR	27	B1:10/1/2023 B2:11/1/2023 B3:9/1/2023
10	2. Design and develop a program in C that uses Hash Function $H:K \rightarrow L$ as $H(K) = K \text{ mod } m$ (remainder method) and implement hashing technique to map a given key K to the address space L. Resolve the collision (if any) using linear probing.	L+D	LCD+BB	Lab Session-3HR	30	B1:17/1/2023 B2:18/1/2023 B3:16/1/2023

Total Number of Hours for theory	60 HR
Total Number of Hours for Laboratory	30 HR
Total Number of Hours for theory and Laboratory	90 HR

Text Books:

1. Fundamentals of Data Structures in C - Ellis Horowitz and Sartaj Sahni, 2nd edition, Universities Press, 2014.
2. Data Structures - Seymour Lipschutz, Schaum's Outlines, Revised 1st edition, McGraw Hill, 2014.
3. Reema Thareja, Data Structures using C, 3rd Ed, Oxford press, 2012.

Reference Books:

1. Gilberg and Forouzan, Data Structures: A Pseudo-code approach with C, 2nd Ed, Cengage Learning, 2014.
2. Jean-Paul Tremblay & Paul G. Sorenson, An Introduction to Data Structures with Applications, 2nd Ed, McGraw Hill, 2013
3. A M Tenenbaum, Data Structures using C, PHI, 1989
4. Robert Kruse, Data Structures and Program Design in C, 2nd Ed, PHI, 1996.

Web Materials:

Weblinks and Video Lectures (e-Resources):

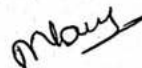
- <http://elearning.vtu.ac.in/econtent/courses/video/CSE/06CS35.html>
- <https://nptel.ac.in/courses/106/105/106105171/>
- <http://www.nptelvideos.in/2012/11/data-structures-and-algorithms.html>
Problem based learning
- <http://www.nptelvideos.in/2012/11/data-structures-and-algorithms.html>
- <https://ds1-iiith.vlabs.ac.in/exp/tree-traversal/index.html>
- <https://ds1-iiith.vlabs.ac.in/exp/tree-traversal/depth-first-traversal/dft-practice.html>

Details for the teaching Aids

Black Board and LCD



Signature of Course In-Charge



Signature of Module Coordinator



Signature of HOD



Signature of Principal

PRINCIPAL

Head of the Department
Artificial Intelligence & Machine Learning

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K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109



KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME OF THE STAFF : SAHANA SHARMA M

SUBJECT CODE/NAME : 21CS33/ ANALOG AND DIGITAL ELECTRONICS

SEMESTER/YEAR : III A/ II

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1:						
1	BJT Biasing: Fixed bias,	L+I	BB+LCD	1	1	2/11/2022
2	BJT Biasing: , voltage divider bias	L+I	BB+LCD	1	2	3/11/2022
3	Problems on BJT Biasing	L+I	BB+LCD	1	3	4/11/2022
4	Problems on BJT Biasing	L+I	BB+LCD	1	4	7/11/2022
5	Schmitt trigger-Inverting & Non inverting	L+I	BB+LCD	1	5	9/11/2022
6	Problems on Schmitt trigger-Inverting & Non inverting	L+I	BB+LCD	1	6	10/11/2022
7	Collector to base Bias	L+I	BB+LCD	1	7	14/11/2022
8	Non-Linear Amplifier, Relaxation Oscillator	L+I	BB+LCD	1	8	16/11/2022
9	Non-Linear Amplifier, Relaxation Oscillator	L+I	BB+LCD	1	9	17/11/2022
10	Operational Amplifier Application Circuits: Peak Detector	L+I	BB+LCD	1	10	18/11/2022
11	Current-to-Voltage and Voltage-to-Current Converter	L+I	BB+LCD	1	11	21/11/2022
12	D to A converters	L+I	BB+LCD	1	12	23/11/2022
13	Basic DAC Techniques	L+I	BB+LCD	1	13	24/11/2022
14	Problems on basic DAC Techniques	L+I	BB+LCD	1	14	26/11/2022
15	IA-1					29/11/2022
16	A to D converter.	L+I	BB+LCD	1	15	1/12/2022
17	Regulated Power Supply Parameters, adjustable voltage	L+I	BB+LCD	1	16	2/12/2022
18	Active Filters- First order low pass and High pass	L+I	BB+LCD	1	17	5/12/2022
19	Active Filters- First order low pass and High pass	L+I	BB+LCD	1	18	7/12/2022

20	Quiz on Module 1	I	LCD	1	19	8/12/2022
MODULE 2:						
21	Karnaugh maps: minimum forms of switching functions, two and three variable Karnaugh maps	L+I	BB+LCD	1	20	9/12/2022
22	Karnaugh maps: minimum forms of switching functions, two and three variable Karnaugh maps	L+I	BB+LCD	1	21	9/12/2022
23	Four variable Karnaugh maps, determination of minimum expressions using essential prime implicants.	L+I	BB+LCD	1	22	12/12/2022
24	Examples on three and four variable Karnaugh maps	L+I	BB+LCD	1	23	14/12/2022
25	Examples on three and four variable Karnaugh maps	L+I	BB+LCD	1	24	15/12/2022
26	Examples on three and four variable Karnaugh maps	L+I	BB+LCD	1	25	16/12/2022
27	QuineMcClusky Method: determination of prime implicants, the prime implicant chart.	L+I	BB+LCD	1	26	16/12/2022
28	Examples on QuineMcClusky Method	L+I	BB+LCD	1	27	19/12/2022
29	Examples on QuineMcClusky Method	L+I	BB+LCD	1	28	21/12/2022
30	Petricks method, simplification of incompletely specified functions,	L+I	BB+LCD	1	29	22/12/2022
31	Examples on Petricks method	L+I	BB+LCD	1	30	23/12/2022
32	Simplification using map-entered variables	L+I	BB+LCD	1	31	23/12/2022
33	Quiz on Module 2	I	LCD	1	32	24/12/2022
MODULE 3:						
34	Combinational circuit design and simulation using gates: Review of Combinational circuit design.	L+I	BB+LCD	1	33	26/12/2022
35	Design of circuits with limited Gate Fan-in, Gate delays and Timing diagrams,	L+I	BB+LCD	1	34	28/12/2022
36	Design of circuits with limited Gate Fan-in, Gate delays and Timing diagrams,		BB+LCD	1	35	29/12/2022
37	Hazards in combinational Logic	L+I	BB+LCD	1	36	30/12/2022
38	Hazards in combinational Logic	L+I	BB+LCD	1	37	30/12/2022
39	Simulation and testing of logic circuits	L+I	BB+LCD	1	38	31/12/2022

40	IA-II					3/1/2023
41	Multiplexers, Decoders	L+I	BB+LCD	1	39	5/1/2023
42	Programmable Logic Devices: Multiplexers, three state buffers,	L+I	BB+LCD	1	40	6/1/2023
43	Decoders and encoders,	L+I	BB+LCD	1	41	9/1/2023
44	Decoders and encoders,				42	11/1/2023
45	Programmable Logic devices.	L+I	BB+LCD	1	43	12/1/2023
MODULE 4:						
46	Introduction to VHDL: VHDL description of combinational circuits,	L+I	BB+LCD	1	44	13/1/2023
47	VHDL Modules.	L+I	BB+LCD	1	45	16/1/2023
48	Latches and Flip-Flops: Set Reset Latch, Gated Latches	L+I	BB+LCD	1	46	18/1/2023
49	Latches and Flip-Flops: Set Reset Latch, Gated Latches	L+I	BB+LCD	1	47	19/1/2023
50	Edge-Triggered D Flip Flop 3,SR Flip Flop,	L+I	BB+LCD	1	48	20/1/2023
51	J K Flip Flop, T Flip Flop.	L+I	BB+LCD	1	49	20/1/2023
MODULE 5:						
52	Registers and Counters: Registers and Register Transfers,	L+I	BB+LCD	1	50	23/1/2023
53	Registers and Counters: Registers and Register Transfers,	L+I	BB+LCD	1	51	25/1/2023
54	Parallel Adder with accumulator, shift registers,	L+I	BB+LCD	1	52	27/1/2023
55	Design of Binary counters, counters for other sequences	L+I	BB+LCD	1	53	28/1/2023
56	Counter design using SR and J K Flip Flops.	L+I	BB+LCD	1	54	30/1/2023
57	Revision	L+I	BB+LCD	1	55	31/1/2023
58	Revision	L+I	BB+LCD	1	56	1/2/2023
59	IA III					3/2/2023
60	Revision	L+I	BB+LCD	1	57	8/2/2023
61	Revision	L+I	BB+LCD	1	58	9/2/2023
62	Revision	L+I	BB+LCD	1	59	11/2/2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: BJT Biasing and Operational Amplifier Application Circuits						
1	Module 1 Lab Programs Simulate BJT CE voltage divider biased voltage amplifier using any suitable circuit simulator.	Instruction and demonstration.	Pspice Simulator and components	Lab Session-3HR	3	B1:7/11/22 B2:2/11/22
2	Using ua 741 Opamp, design a 1 kHz Relaxation Oscillator with 50% duty cycle	Instruction and demonstration	PSpice, Components	Lab Session-3HR	6	B1: 12/11/22 B2: 8/11/22
3	Design an astable multivibrator circuit for three cases of duty cycle (50%, 50%) using NE 555 timer IC.	Instruction and demonstration	PSpice, Components	Lab Session-3HR	9	B1: 15/11/22 B2: 14/11/22
4	Using ua 741 opamp, design a window comparator for any given UTP and LTP.	Instruction and demonstration	PSpice, Components	Lab Session-3HR	12	B1: 21/11/22 B2: 22/11/22
MODULE 2:						
5	Module 2 Lab Programs Given a 4-variable logic expression, simplify it using appropriate technique and implement the same using basic gates. : SOP using K map	Instruction and demonstration	Digital Trainer Kit and Components	Lab Session-3HR	15	B1: 5/12/22 B2: 6/12/22
6	Given a 4-variable logic expression, simplify it using appropriate technique and implement the same using basic gates. :POS using K map	Instruction and demonstration	Digital Trainer Kit and Components	Lab Session-3HR	18	B1:12/12/22 B2: 13/12/22
MODULE 3:						
7	Module 3 Lab Programs Given a 4-variable logic expression, simplify it using appropriate technique and realize the simplified logic expression using 8:1 multiplexer IC.	Instruction and demonstration	Digital Trainer Kit and Components	Lab Session-3HR	21	B1: 19/12/22 B2: 20/12/22
8	Design and implement code converter I) Binary to Gray (II) Gray to Binary Code	Instruction and demonstration	Digital Trainer Kit and Components	Lab Session-3HR	24	B1: 26/12/22 B2: 27/12/22

MODULE 4:						
9	Module 4 Lab Programs Given a 4-variable logic expression, simplify it using appropriate technique and simulate the same in HDL simulator	Instruction and demonstration	Xilinx Simulator	Lab Session-3HR	27	B1: 31/12/22 B2: 3/1/23
10	Realize a J-K Master / Slave Flip-Flop using NAND gates and verify its truth table. And implement the same in HDL.	Instruction and demonstration	Xilinx Simulator	Lab Session-3HR	30	B1: 2/1/23 B2: 17/1/23
MODULE 5:						
11	Design and implement a mod-n ($n < 8$) synchronous up counter using J-K flip flop IC and demonstrate its working.	Instruction and demonstration	Digital trainer kit and components.	Lab Session-3HR	33	B1: 16/1/23 B2: 31/1/23
12	Design and implement an asynchronous counter using decade counter IC to count up from 0 to n ($n \leq 9$) and demonstrate on 7-segment display (using IC-7447)	Instruction and demonstration	Digital trainer kit and components.	Lab Session-3HR	36	B1: 23/1/23 B2: 7/2/23
13	Revision Lab					B1: 30/1/23

Note - Mention test dates.

Total Number of Hours for theory - 59 HR

Total Number of Hours for Laboratory - 36 HR

Total Number of Hours for theory and Laboratory - 95 HR

Text Books:

1. Charles H Roth and Larry L Kinney, Raghunandan G H, Analog and Digital Electronics, Cengage Learning, 2019

Reference Books:

1. Anil K Maini, Varsha Agarwal, Electronic Devices and Circuits, Wiley, 2012.
2. Donald P Leach, Albert Paul Malvino & Goutam Saha, Digital Principles and Applications, 8th Edition, Tata McGraw Hill, 2015.
3. M. Morris Mani, Digital Design, 4th Edition, Pearson Prentice Hall, 2008.
4. David A. Bell, Electronic Devices and Circuits, 5th Edition, Oxford University Press, 2008.

Web Materials:

Web links and Video Lectures (e-Resources):

- Analog Electronic Circuits: <https://nptel.ac.in/courses/108/102/108102112/>
- Digital Electronic Circuits: <https://nptel.ac.in/courses/108/105/108105132/>
- Analog Electronics Lab: <http://vlabs.iitkgp.ac.in/be/>
- Digital Electronics Lab: <http://vlabs.iitkgp.ac.in/dec>

Details for the teaching Aids

Black Board and LCD



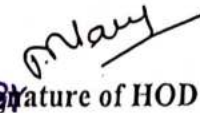
Signature of Course In-Charge



Signature of Module Coordinator



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KS INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

NAME OF THE STAFF : ANU MATHEWS

SUBJECT CODE/NAME : 21CS34/ COMPUTER ORGANIZATION & ARCHITECTURE

SEMESTER/YEAR/SEC : III A

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	Introduction: Basic Operational Concepts, Bus Structures	L+I	LCD	1	1	02/11/2022
2	Performance – Processor Clock, Basic Performance Equation, Clock Rate, Performance Measurement.	L+I	LCD	1	2	03/11/2022
3	Machine Instructions and Programs: Memory Location and Addresses, Memory Operations	L+I	LCD	1	3	04/11/2022
4	Machine Instructions and Programs: Memory Location and Addresses, Memory Operations	L+I	LCD	1	4	07/11/2022
5	Instructions and Instruction Sequencing	L+I	LCD	1	5	09/11/2022
6	Instructions and Instruction Sequencing	L+I	LCD	1	6	10/11/2022
7	Addressing Modes	L+I	LCD	1	7	14/11/2022
8	Addressing Modes	L+I	LCD	1	8	16/11/2022
MODULE 2						
9	Accessing I/O Devices	L+I	LCD	1	9	18/11/2022
10	Interrupts – Basic concepts	L+I	LCD	1	10	23/11/2022
11	Interrupt Hardware	L+I	LCD	1	11	24/11/2022
12	Interrupt Hardware (Contd...)	L+I	LCD	1	12	25/11/2022

13	Direct Memory Access	L+I	LCD	1	13	26/11/2022
14	Internal Assessment Test 1				14	30/11/2022
15	Direct Memory Access	L+I	LCD	1	15	01/12/2022
16	Direct Memory Access	L+I	LCD	1	16	02/12/2022
17	Buses	L+I	LCD	1	17	05/12/2022
18	Interface Circuits	L+I	LCD	1	18	07/12/2022
19	Interface Circuits (Contd...)	L+I	LCD	1	19	08/12/2022
20	Interface Circuits (Contd...)	L+I	LCD	1	20	09/12/2022
MODULE 3						
21	Memory System: Basic Concepts	L+I	LCD	1	21	12/12/2022
22	Semiconductor RAM Memories	L+I	LCD	1	22	14/12/2022
23	Semiconductor RAM Memories (Contd...)	L+I	LCD	1	23	15/12/2022
24	Read Only Memories, Speed, Size and Cost	L+I	LCD	1	24	16/12/2022
25	Read Only Memories, Speed, Size and Cost	L+I	LCD	1	25	19/12/2022
26	Cache Memories – Mapping Functions	L+I	LCD	1	26	21/12/2022
27	Cache Memories – Mapping Functions	L+I	LCD	1	27	22/12/2022
28	Virtual memories	L+I	LCD	1	28	23/12/2022
29	Virtual memories	L+I	LCD	1	29	24/12/2022
30	Virtual memories	L+I	LCD	1	30	26/12/2022
MODULE 4						
31	Arithmetic: Numbers, Arithmetic Operations and Characters, Addition and Subtraction of Signed Numbers	L+I	LCD	1	31	28/12/2022
32	Design of Fast Adders	L+I	LCD	1	32	29/12/2022
33	Multiplication of Positive Numbers	L+I	LCD	1	33	30/12/2022
34	Basic Processing Unit: Fundamental Concepts, Execution of a Complete Instruction	L+I	LCD	1	34	31/12/2022
35	Hardwired control	L+I	LCD	1	35	05/01/2023
36	Hardwired control	L+I	LCD	1	36	06/01/2023
37	Microprogrammed control	L+I	LCD	1	37	09/01/2023
38	Internal Assessment Test 2				38	11/01/2023
39	Microprogrammed control	L+I	LCD	1	39	12/01/2023

MODULE 5						
40	Parallel Processing	L+I	LCD	1	40	13/01/2023
41	Parallel Processing	L+I	LCD	1	41	16/01/2023
42	Pipelining	L+I	LCD	1	42	18/01/2023
43	Pipelining	L+I	LCD	1	43	19/01/2023
44	Arithmetic Pipeline	L+I	LCD	1	44	20/01/2023
45	Arithmetic Pipeline	L+I	LCD	1	45	23/01/2023
46	Instruction Pipeline	L+I	LCD	1	46	25/01/2023
47	Instruction Pipeline	L+I	LCD	1	47	27/01/2023
48	Vector Processing	L+I	LCD	1	48	28/01/2023
49	Vector Processing	L+I	LCD	1	49	30/01/2023
50	Array Processors	L+I	LCD	1	50	01/02/2023
51	Internal Assessment Test 3				51	06/02/2023
52	Array Processors	L+I	LCD	1	52	08/02/2023
53	QUIZ-Activity			1	53	09/02/2023
54	Topic Presentation-Activity			1	54	10/02/2023
55	Topic Presentation-Activity			1	55	11/02/2023

Text Books:


1. Carl Hamacher, Zvonko Vranesic, Safwat Zaky, Computer Organization, 5th Edition, Tata McGrawHill, 2002.
2. M. Morris Mano, Computer System Architecture, PHI, 3rd Edition

Reference Books:

William Stallings: Computer Organization & Architecture, 9th Edition, Pearson, 2015

Details of the teaching aids: Power Point Presentations


Course in charge


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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

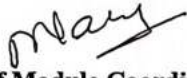


NAME OF THE STAFF: **Lakshmi K K & Prof. S Subhash Kumar**
 SUBJECT CODE/NAME: **21CSL35/ OBJECT ORIENTED PROGRAMMING**
WITH JAVA LABAROTORY
 SEMESTER/YEAR/SEC: **III/II/A**
 ACADEMIC YEAR : **2022-2023**

Sl. No.	Topic to be covered	Teaching Aid	Proposed Date
1	Program: Write a java program that prints all real solutions to the quadratic equation $ax^2+bx+c=0$. Read in a, b, c and use the quadratic formula.	Projector and Board	16/11/2022-B1 12/11/2022-B2
2	Program: Create a Java class called Student with the following details as variables within it. USN Name Branch Phone Write a Java program to create n Student objects and print the USN, Name, Branch, and Phone of these objects with suitable headings.	Projector and Board	23/11/2022-B1 21/11/2022-B2
3	A. Write a program to check prime number B. Write a program for Arithmetic calculator using switch case menu	Projector and Board	30/11/2022-B1 12/12/2022-B2
4	Design a super class called Staff with details as StaffId, Name, Phone, Salary. Extend this class by writing three subclasses namely Teaching (domain, publications), Technical (skills), and Contract (period). Write a Java program to read and display at least 3 staff objects of all three categories.	Projector and Board	07/12/2022-B1 19/12/2022-B2
5	Write a java program demonstrating Method overloading and Constructor overloading.	Projector and Board	14/12/2022-B1 26/12/2022-B2
6	Develop a java application to implement currency converter (Dollar to INR, EURO to INR, Yen to INR and vice versa), distance converter (meter to KM, miles to KM and vice versa), time converter (hours to minutes, seconds and vice versa) using packages.	Projector and Board	21/12/2022-B1 31/12/2022-B2
7	Write a program to generate the resume. Create 2 Java classes Teacher (data: personal information, qualification, experience, achievements) and Student (data: personal information, result, discipline) which implements the java interface Resume with the method blodata() .	Projector and Board	24/12/2022-B1 16/01/2023-B2
8	Program: Write a java program that implements a multi-	Projector and	11/01/2023-B1

	thread application that has three threads. First thread generates a random integer for every 1 second; second thread computes the square of the number and prints; third thread will print the value of cube of the number.	Board	19/01/2023-B2
9	Program: Write a program to perform string operations using ArrayList. Write functions for the following a. Append - add at end b. Insert - add at particular index c. Search d. List all string starts with given letter.	Projector and Board	14/01/2023-B1 23/01/2023-B2
10	Program: Write a Java program to read two integers a and b. Compute a/b and print, when b is not zero. Raise an exception when b is equal to zero.	Projector and Board	18/01/2023-B1 30/01/2023-B2
11	Write a java program that reads a file name from the user, displays information about whether the file exists, whether the file is readable, or writable, the type of file and the length of the file in bytes	Projector and Board	28/01/2023-B1 06/02/2023-B2
12	Develop an applet that displays a simple message in center of the screen. Develop a simple calculator using Swings.	Projector and Board	08/02/2023-B1 13/02/2023-B2
	REVISION		15/02/2023-B1 22/02/2023-B1 20/02/2023-B2 27/02/2023-B2
	LAB TEST		13/03/2023-B1 06/03/2023-B2 20/03/2023-B1&B2


Signature of course Incharge


Signature of Module Coordinator


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K S INSTITUTE OF TECHNOLOGY, BANGALORE
DEPARTMENT OF APPLIED SCIENCES & HUMANITIES
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : Thrimurthy R
COURSE TYPE / CODE / TITLE : Theory/21KKBK37/Balake Kannada
YEAR/ SEMESTER/SECTION : 2022-23/3rdsem
BRANCH : AI & ML

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1:						
1	Introduction, Necessity of learning a local language. Methods to learn the Kannada language.	L+D	BB	1	1	07/11/2022
2	Easy learning of Kannada Language: A few tips. Hints for correct and polite conversation, Listening and Speaking Activities	L+PPT	BB	1 1	2 3	14/11/2022 18/11/2022
3	Key to Transcription.	L+D	BB	1	4	21/11/2022
4	Personal Pronouns, Possessive Forms, Interrogative words.	L+D	BB	1	5	24/11/2022

MODULE 2:						
5	Possessive forms of nouns, dubitive question and Relative nouns	L+D	BB	1	6	12/12/2022
6	Qualitative, Quantitative and Colour Adjectives, Numerals	L+D	BB	1	7	19/12/2022
7	Predictive Forms, Locative Case	L+D	BB	1	8	26/12/2022

MODULE 3:						
8	Dative Cases, and Numerals	L+D	BB	1	9	02/01/2023
9	Ordinal numerals and Plural markers	L+D	BB	1	10	16/01/2023
10	Defective/Negative Verbs and Colour Adjectives	L+D	BB	1	11	23/01/2023

MODULE 4:						
11	Permission, Commands, encouraging and Urging words (Imperative words and sentences)	L+D	BB	1	12	13/02/2023
12	Accusative Cases and Potential Forms used in General Communication	L+D	BB	1	13	20/02/2023
13	Helping Verbs "iru and iralla", Corresponding Future and Negation Verbs	L+D	BB	1	14	27/02/2023
14	Comparative, Relationship, Identification and Negation Words	L+D	BB	1	15	03/03/2023

MODULE 5:						
15	Different types of forms of Tense, Time and Verbs	L+D	BB	1	16	06/03/2023
16	Formation of Past, Future and Present Tense Sentences with Verb Forms	L+D	BB	1	17	09/03/2023
17	Kannada Vocabulary List, Kannada Words in Conversation.	L+D	BB	1	18	11/03/2023

Text Books:

BALAKE KANNADA, Author: Dr. L. Thimmesh, Publisher: Vishveshwaraiah Technology University, Belagavi

Reference Books:

BALAKE KANNADA, Author: Dr. L. Thimmesh, Publisher: Vishveshwaraiah Technology University, Belagavi

Web Materials:

Weblinks and Video Lectures (e-Resources):

<https://dtek.karnataka.gov.in>
<https://vtu.ac.in>BKBKK107>
<https://sahyadri.edu.in>Balake>
<https://dtek.karnataka.gov.in>

Details for the teaching Aids

- BB – Black Board
- PPT Power Point Presentation
- Black Board and LCD



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Signature of HOD

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KS INSTITUTE OF TECHNOLOGY, BANGALORE -109
DEPARTMENT OF APPLIED SCIENCES & HUMANITIES
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : THRIMURTHY R
COURSE TYPE / CODE/TITLE : Theory/21KSK37/ Samskrutika Kannada
YEAR/ SEMESTER/SECTION : 2022-23/3rdsem
BRANCH : AI & ML

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No.of Periods	Proposed Date
ಘಟಕ -1 ಲೇಖನಗಳು						
1	ಕರ್ನಾಟಕ ಸಂಸ್ಕೃತಿ - ಹಂಪ ನಾಗರಾಜಯ್ಯ	L+D	BB	1	1	07/11/2022
2	ಕರ್ನಾಟಕ ಸಂಸ್ಕೃತಿ - ಹಂಪ ನಾಗರಾಜಯ್ಯ	L+ D	BB	2	2 3	14/11/2022 18/11/2022
3	ಕರ್ನಾಟಕ ಏಕೀಕರಣ: ಒಂದು ಅಪೂರ್ವ ಚರಿತ್ರೆ- ಜಿ. ವೆಂಕಟಸುಬ್ಬಯ್ಯ	L+ D	BB	1	4	21/11/2022
4	ಕರ್ನಾಟಕ ಏಕೀಕರಣ: ಒಂದು ಅಪೂರ್ವ ಚರಿತ್ರೆ- ಜಿ. ವೆಂಕಟಸುಬ್ಬಯ್ಯ	L+D	BB	1	5	24/11/2022
5	ಆಡಳಿತ ಭಾಷೆಯಾಗಿ ಕನ್ನಡ-ಡಾ.ಎಲ್. ತಿಮ್ಮೇಶ ಮತ್ತು ಪ್ರೊ.ವಿ. ಕೇಶವಮೂರ್ತಿ	L+D	BB	1	6	05/12/2022

ಘಟಕ -2 ಆಧುನಿಕ ಪೂರ್ವದ ಕಾವ್ಯ ಭಾಗ

6	ವಚನಗಳು: ಬಸವಣ್ಣ, ಅಕ್ಕಮಹಾದೇವಿ, ಅಲ್ಲಮಪ್ರಭು, ಆಯ್ದಕ್ಕಿ ಮಾರಯ್ಯ, ಜೇಡರ ದಾಸಿಮಯ್ಯ, ಆಯ್ದಕ್ಕಿ ಲಕ್ಕಮ್ಮ	L+D	BB	1	7	12/12/2022
7	ವಚನಗಳು: ಬಸವಣ್ಣ, ಅಕ್ಕಮಹಾದೇವಿ, ಅಲ್ಲಮಪ್ರಭು, ಆಯ್ದಕ್ಕಿ ಮಾರಯ್ಯ, ಜೇಡರ ದಾಸಿಮಯ್ಯ, ಆಯ್ದಕ್ಕಿ ಲಕ್ಕಮ್ಮ	L+D	BB	1	8	19/12/2022
8	ಕೀರ್ತನೆಗಳು: ಆದಲಂದೇನು ಫಲ ಇದಲಂದೇನು ಫಲ - ಪುರಂದರದಾಸರು	L+D	BB	1	9	26/12/2022
9	ಕೀರ್ತನೆಗಳು: ಆದಲಂದೇನು ಫಲ ಇದಲಂದೇನು ಫಲ - ಪುರಂದರದಾಸರು	L+D	BB	1	10	31/12/2022
10	ತಲ್ಲೇಸದಿರು ಕಂಡ್ ತಾಳು ಮನವೇ- ಕನಕದಾಸರು	L+D	BB	1	11	02/01/2023
11	ತತ್ವಪದಗಳು: ಸಾವಿರ ಕೊಡಗಳ ಸುಟ್ಟು - ಶಿಶುನಾಳ ಶರೀಫ	L+D	BB	1	12	16/01/2023

ಘಟಕ -3 ಆಧುನಿಕ ಕಾವ್ಯ ಭಾಗ

12	ಡಿವಿಜರವರ ಮಂಕುತಿಮ್ಮನ ಕಗ್ಗಂದಿ ಆಯ್ದ ಕೆಲವು ಭಾಗಗಳು	L+D	BB	1	13	
13	ಕುರುಡು ಕಾಂಚಾಣ: ದ.ರಾ. ಬೇಂದ್ರೆ	L+D	BB	1	14	30/01/2023
14	ಮೊಸಬಾಳನ ಗೀತೆ: ಕುವೆಂಪು	L+D	BB	1	15	06/02/2023

ಘಟಕ -4 ತಾಂತ್ರಿಕ ವ್ಯಕ್ತಿಗಳ ಪರಿಚಯ

15	ಡಾ. ಸರ್. ಎಂ. ವಿಶ್ವೇಶ್ವರಯ್ಯ: ವ್ಯಕ್ತಿ ಮತ್ತು ಬಿಹೈ- ಎ ಎನ್ ಮೂರ್ತಿರಾವ್	L+D	BB	1	16	13/02/2023
16	ಡಾ. ಸರ್. ಎಂ. ವಿಶ್ವೇಶ್ವರಯ್ಯ: ವ್ಯಕ್ತಿ ಮತ್ತು ಬಿಹೈ- ಎ ಎನ್ ಮೂರ್ತಿರಾವ್	L+D	BB	1	17	20/02/2023
17	ಕರಕುಶಲ ಕಲೆಗಳು ಮತ್ತು ಪರಂಪರೆಯ ವಿಜ್ಞಾನ: ಕರೀಗೌಡ ಬೀಚನಹಳ್ಳಿ	L+D	BB	1	18	27/02/2023
18	ಕರಕುಶಲ ಕಲೆಗಳು ಮತ್ತು ಪರಂಪರೆಯ ವಿಜ್ಞಾನ: ಕರೀಗೌಡ ಬೀಚನಹಳ್ಳಿ	L+D	BB	1	19	03/03/2023

ಘಟಕ -5 ಕಛೆ ಮತ್ತು ಪ್ರವಾಸ ಕಛನ

19	ಯುಗಾಡಿ: ವಸುಧೇಂದ್ರ	L+D	BB	1	20	06/03/2023
20	ಯುಗಾಡಿ: ವಸುಧೇಂದ್ರ	L+D	BB	1	21	09/03/2023
21	ಮೆಗಾಸೆ ಎಂಬ ಗಿರಿಜನ ಪರ್ವತ: ಹಿ.ಚಿ. ಬೋರಲಿಂಗಯ್ಯ	L+D	BB	1	22	11/03/2023
22	ಮೆಗಾಸೆ ಎಂಬ ಗಿರಿಜನ ಪರ್ವತ: ಹಿ.ಚಿ. ಬೋರಲಿಂಗಯ್ಯ	L+D	BB	1	23	13/03/2023

Text Books:

1. ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ, ಡಾ. ಹಿ.ಚಿ. ಬೋರಲಿಂಗಯ್ಯ ಮತ್ತು ಡಾ. ಎಲ್. ತಿಮ್ಮೇಶ, ಪ್ರಸಾರಾಂಗ, ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ.

Reference Books:

1. ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ, ಡಾ. ಹಿ.ಚಿ.ಬೋರಲಿಂಗಯ್ಯ ಮತ್ತು ಡಾ. ಎಲ್. ತಿಮ್ಮೇಶ, ಪ್ರಸಾರಾಂಗ, ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ.

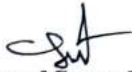
Web Materials:

Web links and Video Lectures (e-Resources):

<https://www.vtuloop.com>

<https://www.forum.universityupdates.in>

Details for the teaching Aids : Black Board, PPT and LCD



Signature of Course In-Charge



Signature of HOD

Head of the Department
Artificial Intelligence & Machine Learning
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Bengaluru - 560 109



Signature of Principal

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K S INSTITUTE OF TECHNOLOGY BENGALURU

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING



LESSON PLAN

NAME OF THE STAFF: **Prof. Lakshmi K K & Prof. Roopa K Murthy**

SUBJECT CODE/NAME: **21CSL381/Mastering Office**

SEMESTER/YEAR/SEC: **III/II/A**

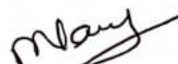
ACADEMIC YEAR : **2022-2023**

Sl. No.	Topic to be covered	Teaching Aid	Proposed Date
1	Module-1 MS-Word -Working with Files, Text – Formatting, Moving, copying and pasting text, Styles – Lists – Bulleted and numbered lists,	Projector and Board	8-11-2022
2	Nested lists, Formatting lists. Table Manipulations. Graphics – Adding clip Art, add an image from a file, editing graphics, Page formatting.	Projector and Board	12-11-2022
3	Header and footers, page numbers Protect the Document, Mail Merge, Macros – Creating & Saving web pages, Hyperlinks.	Projector and Board	22-11-2022
4	Module-2 MS-Excel - Modifying a Worksheet – Moving through cells, adding worksheets, rows and columns, resizing rows and columns,	Projector and Board	06-12-2022
5	selecting cells Moving and copying cells, freezing panes - Macros – recording and running. Linking worksheets -	Projector and Board	13-12-2022
6	Sorting and Filling, Alternating text and numbers with Auto fill Auto filling functions. Graphics – Adding clip art,	Projector and Board	20-12-2022
7	add an image from a file, Charts – Using chart Wizard, Copy a chart to Microsoft Word.	Projector and Board	27-12-2022
8	Module-3 MS-Power Point -Create a Presentation from a template- Working with Slides – Insert a new slide, applying a design template, changing slide layouts	Projector and Board	03-01-2023
9	Module-3 Resizing a text box, Text box properties, delete a text box - Video and Audio effects, Colour Schemes & Backgrounds Adding clip art, adding an image from a file, Save as a web page.	Projector and Board	07-01-2023
10	Module-4 MS-Access - Using Access database wizard, pages and projects. Creating Tables –	Projector and Board	31-01-2023

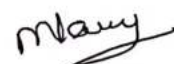
11	Module-4 Create a Table in design view. Datasheet Records – Adding, Editing, deleting records, Adding and deleting columns Resizing rows and columns.	Projector and Board	07-02-2023
12	Finding data in a table & replacing, Print a datasheet. Queries - MS-Access	Projector and Board	14-02-2023
13	Module-5 Microsoft Outlook- Introduction, Starting Microsoft Outlook	Projector and Board	21-02-2023
14	Module-5 Outlook Today, Different Views in Outlook, Outlook Data Files	Projector and Board	28-02-2023
15	IA-I		15-03-2023
16	IA-II		24-03-2023



Signature of course Incharge



Signature of Module Coordinator



Signature of HOD

Head of the Department
Artificial Intelligence & Machine Learning
K.S. Institute of Technology
Bengaluru - 560 109



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BENGALURU - 560 109.



K S INSTITUTE OF TECHNOLOGY BENGALURU

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

NAME OF THE STAFF : Dr. K V A Balaji

SUBJECT CODE/NAME : 18CS51/ Management and Entrepreneurship for IT Industry

SEMESTER/YEAR/SEC : V SEM

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Introduction						
1	Meaning, nature and characteristics of management	L+D	BB+LCD	1	1	10-10-2022
2	Scope and Functional areas of management	L+ D	BB+LCD	1	2	11-10-2022
3	Goals of management, Levels of Management	L+ D	BB+LCD	1	3	12-10-2022
4	Brief Overview of Evolution of Management	L+D	BB+LCD	1	4	13-10-2022
5	Planning - Nature, Importance	L+D	BB+LCD	1	5	17-10-2022
6	Types of Plans	L+D	BB+LCD	1	6	18-10-2022
7	Steps in Planning	L+D	BB+LCD	1	7	19-10-2022
8	Organizing - nature and purpose	L+D	BB+LCD	1	8	20-10-2022
9	Types of organization	L+D	BB+LCD	1	9	25-10-2022
10	Staffing: Meaning, Process of Recruitment and Selection	L+D	BB+LCD	1	10	27-10-2022
MODULE 2: Directing and Controlling						
11	Meaning and Nature of Directing	L+D	BB+LCD	1	11	29-10-2022
12	Leadership Styles	L+ D	BB+LCD	1	12	31-10-2022
13	Motivation Theories	L+ D	LCD	1	13	02-11-2022
14	Communication - Meaning and Importance , Coordination - Meaning and Importance	L+ D	LCD	1	15	03-11-2022
15	Controlling-Meaning	L+ D	LCD	1	16	7-11-2022

16	Steps in Controlling	L+ D	LCD	1	17	8-11-2022
17	Methods of establishing control	L+ D	LCD	1	18	9-11-2022
18	Group Discussion	L+ D	LCD	1	19	10-11-2022
FIRST INTERNALS						
MODULE 3: Entrepreneur						
19	Meaning of Entrepreneur, Characteristics of Entrepreneur	L+ D	LCD	1	21	17-11-2022
20	Classification and types of entrepreneur	L+ D	LCD	1	22	21-11-2022
21	Various Stages of entrepreneurial process	L+ D	LCD	1	23	22-11-2022
22	Role of entrepreneurs in economic development	L+ D	LCD	1	24	23-11-2022
23	Entrepreneurship in India, Barriers to Entrepreneurship	L+ D	LCD	1	25	24-11-2022
24	Identification of business opportunities	L+ D	LCD	1	26	26-11-2022
25	Market Feasibility Study	L+ D	LCD	1	27	28-11-2022
26	Technical Feasibility Study	L+ D	LCD	1	28	29-11-2022
27	Financial Feasibility Study	L+ D	LCD	1	29	30-11-2022
28	Social Feasibility Study	L+ D	LCD	1	30	01-12-2022
MODULE 4: Preparation of project and ERP						
29	Meaning of Project	L+ D	LCD	1	31	05-12-2022
30	Project Identification, Project Selection	L+ D	LCD	1	32	06-12-2022
31	Project Report, Need and Significance of Report	L+ D	LCD	1	33	07-12-2022
32	Contents, Formulation	L+ D	LCD	1	34	08-12-2022
33	Guidelines by planning commission for project report	L+ D	LCD	1	35	10-12-2022
34	Enterprise Resource Planning: Meaning and Importance	L+ D	LCD	1	36	12-12-2022
35	ERP and Functional Areas of Management - Marketing	L+ D	LCD	1	38	13-12-2022
36	Sales - Supply Chain Management	L+ D	LCD	1	39	14-12-2022
37	Finance and Accounting, Human Resources	L+ D	LCD	1	40	15-12-2022
SECOND INTERNALS						
38	Business model presentation (pedagogical Activity)	L+ D	LCD	1	41	22-12-2022
39	Types of reports and methods of report generation	L+ D	LCD	1	42	23-12-2022
MODULE 5: Micro and Small Enterprises						

40	Definition of micro and small enterprises	L+ D	LCD	1	43	24-12-2022
41	Characteristics and Advantages of Micro and Small Enterprises	L+ D	LCD	1	44	26-12-2022
42	Steps in establishing micro and small enterprises	L+ D	LCD	1	45	27-12-2022
43	Government of India industrial policy 2007 on micro and small enterprises	L+ D	LCD	1	46	28-12-2022
44	Case study (Microsoft),	L+ D	LCD	1	47	29-12-2022
45	Case study(Captain G R Gopinath)	L+ D	LCD	1	48	31-12-2022
46	Case study (N R Narayana Murthy & Infosys)	L+ D	LCD	1	49	02-01-2023
47	Institutional support: MSME-DI,	L+ D	LCD	1	50	03-01-2023
48	NSIC	L+ D	LCD	1	51	04-01-2023
49	Introduction to IPR	L+ D	LCD	1	52	05-01-2023
50	SIDBI, KIADB	L+ D	LCD	1	53	09-01-2023
51	KSSIDC	L+ D	LCD	1	54	10-01-2023
52	TECSOK	L+ D	LCD	1	54	11-01-2023
53	KSFC	L+ D	LCD	1	54	12-01-2023
54	, DIC and District level single window agency	L+ D	LCD	1	54	16-01-2023
55	Case Studies (pedagogical Activity)	L+ D	LCD	1	54	17-01-2023
THIRD INTERNALS						



Signature of course In-charge



Signature of Module Coordinator



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Bengaluru - 560 109



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DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : DR. VANEETA M

COURSE CODE/TITLE : PYTHON PROGRAMMING

YEAR/ SEMESTER/SECTION : 3rd / 5th

BRANCH : ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1						
1	Introduction to Python Programming	L+D	LCD+BB	1	1	10-10-2022
2	Python Basics, Entering Expressions into the Interactive Shell, The Integer, Floating-Point, and String Data Types	L+D	LCD+BB	1	2	11-10-2022
3	String Concatenation and Replication, Storing Values in Variables, Your First Program, Dissecting Your Program,	L+D	LCD+BB	1	3	13-10-2022
4	Flow control, Boolean Values, Comparison Operators, Boolean Operators, Mixing Boolean and Comparison Operators,	L+D	LCD+BB	1	4	14-10-2022
5	Elements of Flow Control, Program Execution, Flow Control Statements,	L+D	LCD+BB	1	5	15-10-2022
6	Practice Programs	L+D	LCD+BB	1	6	17-10-2022
7	Importing Modules, Ending a Program Early with sys.exit(),	L+D	LCD+BB	1	7	18-10-2022
8	Functions, def Statements with Parameters, Return Values and return Statements,	L+D	LCD+BB	1	8	20-10-2022
9	The None Value, Keyword Arguments and print(), Local and Global Scope	L+D	LCD+BB	1	9	21-10-2022
10	The global Statement, Exception Handling, A Short Program: guess the Number	L+D	LCD+BB	1	10	27-10-2022

Module 2						
11	Lists, The List Data Type, Working with Lists	L+D	LCD+BB	1	11	28-10-2022
12	Augmented Assignment Operators, Methods	L+D	LCD+BB	1	12	31-10-2022
13	Example Program: Magic 8 Ball with a List, List-like Types: Strings and Tuples	L+D	LCD+BB	1	13	03-11-2022
14	References, Dictionaries and Structuring Data	L+D	LCD+BB	1	14	04-11-2022
15	The Dictionary Data Type, Pretty Printing	L+D	LCD+BB	1	15	7-11-2022
16	Using Data Structures to Model Real-World Things	L+D	LCD+BB	1	16	8-11-2022
17	Manipulating Strings, Working with Strings	L+D	LCD+BB	1	17	10-11-2022
18	Useful String Methods	L+D	LCD+BB	1	18	12-11-2022
19	Project: Password Locker	L+D	LCD+BB	1	19	03-11-2022
20	Internal Assessment Test I				20	14-11-2022
21	Project: Adding Bullets to Wiki Markup	L+D	LCD+BB	1	21	17-11-2022
Module 3						
22	Pattern Matching with Regular Expressions, Finding Patterns of Text Without Regular Expressions	L+D	LCD+BB	1	22	18-11-2022
23	Finding Patterns of Text with Regular Expressions, More Pattern Matching with Regular Expressions	L+D	LCD+BB	1	23	21-11-2022
24	Greedy and Nongreedy Matching, The findall() Method	L+D	LCD+BB	1	24	22-11-2022
25	Character Classes, Making Your Own Character Classes, The Caret and Dollar Sign Characters	L+D	LCD+BB	1	25	24-11-2022
26	The Wildcard Character, Review of Regex Symbols, Case-Insensitive Matching	L+D	LCD+BB	1	26	25-11-2022
27	Substituting Strings with the sub() Method, Managing Complex Regexes,	L+D	LCD+BB	1	27	28-11-2022
28	Combining re .IGNORECASE, re .DOTALL, and re .VERBOSE, Project: Phone Number and Email Address Extractor,	L+D	LCD+BB	1	28	29-11-2022
29	Reading and Writing Files, Files and File Paths, The os.path Module,	L+D	LCD+BB	1	29	01-12-2022
30	The File Reading/Writing Process, Saving Variables with the shelve Module,	L+D	LCD+BB	1	30	02-12-2022
31	Saving Variables with the pprint.pformat() Function,	L+D	LCD+BB	1	31	5-12-2022

52	Formulas, Adjusting Rows and Columns, Charts,	L+D	LCD+BB	1	52	09-01-2023
53	Working with PDF and Word Documents , PDF Documents, Project: Combining Select Pages from Many PDFs,	L+D	LCD+BB	1	53	10-01-2023
54	Working with Word Documents,	L+D	LCD+BB	1	54	12-01-2023
55	Working with CSV files and JSON data , The csv Module, Project: Removing the Header from CSV Files,	L+D	LCD+BB	1	55	13-01-2023
56	JSON and APIs, The json Module, Project: Fetching Current Weather Data	L+D	LCD+BB	1	56	16-01-2023
57	Pedagogy: Implementation of small problem statement on web scraping, working with PDF, Word, Excel, JSON etc			1	57	17-01-2023
58	Internal Assessment Test III			1	58	18-01-2023

Text Books:

1. Al Sweigart, "Automate the Boring Stuff with Python", 1st Edition, No Starch Press, 2015.
2. Allen B. Downey, "Think Python: How to Think Like a Computer Scientist", 2nd Edition, Green Tea Press, 2015.

Reference Books:

1. Jake VanderPlas, "Python Data Science Handbook: Essential Tools for Working with Data", 1st Edition, O'Reilly Media, 2016. ISBN-13: 978-1491912058
2. Charles Dierbach, "Introduction to Computer Science Using Python", 1st Edition, Wiley India Pvt Ltd, 2015. ISBN-13: 978-8126556014
3. Wesley J Chun, "Core Python Applications Programming", 3rd Edition, Pearson Education India, 2015. ISBN-13: 978-9332555365

Details of the teaching aids:

- Black Board
- Power Point Presentation

Maus
Course Incharge

Maus
Module coordinator

Sharma
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Head of the Department
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Bengaluru - 560 109



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DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : ANU MATHEWS

COURSE CODE/TITLE : DATABASE MANAGEMENT SYSTEM /18CS53

YEAR/ SEMESTER/SECTION : 3/5/A

BRANCH : AIML

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1						
1	Introduction to Databases: Introduction, Characteristics of database approach, Advantages of using the DBMS approach, History of database applications	L+I	LCD	1	1	10/10/2022
2	Overview of Database Languages and Architectures: Data Models, Schemas, and Instances.	L+I	LCD	1	2	11/10/2022
3	Three schema architecture and data independence, database languages, and interfaces, The Database System environment.	L+I	LCD	1	3	12/10/2022
4	Conceptual Data Modelling using Entities and Relationships: Entity types, Entity sets, attributes, roles,	L+I	LCD	1	4	14/10/2022
5	Structural constraints, Weak entity types,	L+I	LCD	1	5	15/10/2022
6	ER diagram- Company Database	L+I	LCD	1	6	17/10/2022
7	ER diagram- Company Database	L+I	LCD	1	7	18/10/2022
8	ER diagrams – Examples	L+I	LCD	1	8	19/10/2022
9	ER diagrams – Examples	L+I	LCD	1	9	21/10/2022
10	Specialization and Generalization	L+I	LCD	1	10	28/10/2022

Module 2						
11	Relational Model: Relational Model Concepts,	L+I	LCD	1	11	29/10/2022
12	Relational Model Constraints and relational database schemas,	L+I	LCD	1	12	31/10/2022
13	Update operations, transactions, and dealing with constraint violations.	L+I	LCD	1	13	02/11/2022
14	Relational Algebra: Unary and Binary relational operations,	L+I	LCD	1	14	07/11/2022
15	Additional relational operations (aggregate, grouping, etc.)	L+I	LCD	1	15	08/11/2022
16	Examples of Queries in relational algebra.	L+I	LCD	1	16	09/11/2022
17	Mapping Conceptual Design into a Logical Design: Relational Database Design using ER-to-Relational mapping.	L+I	LCD	1	17	12/11/2022
18	Internal Assessment Test 1					15/11/2022
19	SQL: SQL data definition and data types, specifying constraints in SQL	L+I	LCD	1	18	25/11/2022
20	Retrieval queries in SQL, UPDATE statements in SQL	L+I	LCD	1	19	26/11/2022
21	PEDAGOGY- Activity Based Assignment	L+I	LCD	1	20	28/11/2022
Module 3						
22	SQL: Advances Queries: More complex SQL retrieval queries	L+I	LCD	1	21	29/11/2022
23	Complex SQL retrieval queries	L+I	LCD	1	22	30/11/2022
24	Specifying constraints as assertions and action triggers	L+I	LCD	1	23	02/12/2022
25	Views in SQL	L+I	LCD	1	24	05/12/2022
26	Schema change statements in SQL	L+I	LCD	1	25	06/12/2022
27	Database Application Development: Accessing databases from applications, An introduction to JDBC, JDBC classes and interfaces	L+I	LCD	1	26	07/12/2022
28	SQLJ, Stored procedures	L+I	LCD	1	27	09/12/2022
29	Case study: The internet Bookshop.	L+I	LCD	1	28	10/12/2022
30	Internet Applications: The three-Tier application architecture,	L+I	LCD	1	29	12/12/2022

31	The presentation layer, The Middle Tier	L+I	LCD	1	30	13/12/2022
Module 4						
32	Normalization: Database Design Theory – Introduction to Normalization using Functional and Multivalued Dependencies: Informal design guidelines for relation schema	L+I	LCD	1	31	14/12/2022
33	Functional Dependencies	L+I	LCD	1	32	16/12/2022
34	Internal Assessment Test 2	L+I	LCD	1	33	23/12/2022
35	Second and Third Normal Forms,	L+I	LCD	1	34	24/12/2022
36	Boyce-Codd Normal Form,	L+I	LCD	1	35	26/12/2022
37	Multivalued Dependency and Fourth Normal Form, Join Dependencies and Fifth Normal Form.	L+I	LCD	1	36	27/12/2022
38	Normalization Algorithms: Inference Rules, Equivalence, and Minimal Cover,	L+I	LCD	1	37	28/12/2022
39	Properties of Relational Decompositions	L+I	LCD	1	38	30/12/2022
40	Algorithms for Relational Database Schema Design, Nulls, Dangling tuples, and alternate Relational Designs,	L+I	LCD	1	39	31/12/2022
41	Further discussion of Multivalued dependencies and 4NF, Other dependencies and Normal Forms	L+I	LCD	1	40	02/01/2023
Module 5						
42	Transaction Processing: Introduction to Transaction Processing, Transaction and System concepts, Desirable properties of Transactions	L+I	LCD	1	41	03/01/2023
43	Characterizing schedules based on recoverability, characterizing schedules based on Serializability,	L+I	LCD	1	42	04/01/2023
44	Transaction support in SQL.	L+I	LCD	1	43	06/01/2023
45	Concurrency Control in Databases: Two-phase locking techniques for Concurrency control	L+I	LCD	1	44	09/01/2023
46	Concurrency control based on Timestamp ordering, Multiversion Concurrency control techniques	L+I	LCD	1	45	10/01/2023

47	Validation Concurrency control techniques, Granularity of Data items and Multiple Granularity Locking	L+I	LCD	1	46	11/01/2023
48	Introduction to Database Recovery Protocols: Recovery Concepts	L+I	LCD	1	47	13/01/2023
49	NO-UNDO/REDO recovery based on Deferred update,	L+I	LCD	1	48	16/01/2023
50	Recovery techniques based on immediate update, Shadow paging,	L+I	LCD	1	49	17/01/2023
51	Internal Assessment Test 3					19/01/2023
52	Database backup and recovery from catastrophic failures	L+I	LCD	1	50	27/01/2023

Text Books:

1. Fundamentals of Database Systems, RamezElmasri and Shamkant B. Navathe, 7th Edition, 2017, Pearson.
2. Database management systems, Ramakrishnan, and Gehrke, 3rd Edition, 2014, McGraw Hill


Reference Books:

1. SilberschatzKorth and Sudharshan, Database System Concepts, 6th Edition, Mc-GrawHill, 2013.
2. Coronel, Morris, and Rob, Database Principles Fundamentals of Design, Implementation and Management, Cengage Learning 2012.

Details of the teaching aids:

- Power Point presentations


Course Incharge


Module coordinator


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Head of the Department
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KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

NAME OF THE STAFF : Mr. Manoj Kumar S

SUBJECT CODE/NAME : 18CS54/ AUTOMATA THEORY & COMPUTABILITY


SEMESTER/YEAR/SEC : V/II

ACADEMIC YEAR : 2022-2023

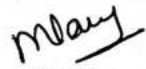
Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	Why ATC: Strings and Languages	L+I	BB	1	1	10/10/2022
2	Operations on String, Enumerations	L+I	BB	1	2	11/10/2022
3	Uniqueness, Encoding, Decision Problems	L+I	BB	1	3	12/10/2022
4	Chomsky Hierarchy, FSM, RE, CFG, PDA, Turing M	L+I	BB	1	4	13/10/2022
5	Computation, Non determinism, Intro to FSM	L+I	BB	1	5	17/10/2022
6	DFSM and Problems	L+I	BB	1	6	18/10/2022
7	DFSM Problems contd	L+I	BB	1	7	19/10/2022
8	DFSM Problems contd	L+I	BB	1	8	20/10/2022
9	DFSM Hard Problems	L+I	BB	1	9	21/10/2022
10	Into to NFSM	L+I	BB	1	10	25/10/2022
11	NFSM Contd	L+I	BB	1	11	27/10/2022
12	eNFSM and eNFSM to DFSM	L+I	BB	1	12	29/10/2022
13	NFSM to DFSM	L+I	BB	1	13	31/10/2022
14	NFSM to DFSM, Equivalence of two states, Minimization of DFSM	L+I	BB	1	14	02/11/2022

15	Minimization of DFSM Problems	L+I	BB	1	15	03/11/2022
MODULE 2						
16	Introduction to Regular Expression	L+I	BB	1	16	04/11/2022
17	Problems on RE and Identities	L+I	BB	1	17	07/11/2022
18	RE to eNFSM	L+I	BB	1	18	08/11/2022
19	RE to eNFSM	L+I	BB	1	19	09/11/2022
20	FSM to RE by eliminating states	L+I	BB	1	20	10/11/2022
21	REVISION	L+I	BB	1	21	12/11/2022
FIRST INTERNALS						
22	Kleene's Theorem & problems	L+I	BB	1	22	17/11/2022
23	Kleene's theorem problems	L+I	BB	1	23	21/11/2022
24	Regular grammar and problems, Closure Properties of RE	L+I	BB	1	24	22/11/2022
25	Pumping lemma theorem, prove L is not Regular	L+I	BB	1	25	23/11/2022
MODULE 3						
26	CFG, Problems	L+I	BB	1	26	24/11/2022
27	CFG Problems	L+I	BB	1	27	25/11/2022
28	CFG Problems, Derivations	L+I	BB	1	28	26/11/2022
29	Derivation problems, Parse Tree, Ambiguous grammar	L+I	BB	1	29	28/11/2022
30	Chomsky Normal Form	L+I	BB	1	30	29/11/2022
31	Greibach Normal Form	L+I	BB	1	31	30/11/2022
32	Pushdown Automata Introduction	L+I	BB	1	32	01/12/2022
33	Pushdown Automata Problems	L+I	BB	1	33	05/12/2022
34	Pushdown Automata Problems	L+I	BB	1	34	06/12/2022
35	Deterministic PDA	L+I	BB	1	35	07/12/2022
36	Non-Deterministic PDA	L+I	BB	1	36	08/12/2022
37	Deterministic PDA, Non-Deterministic PDA problems	L+I	BB	1	37	10/12/2022
38	Nondeterminism and Halting	L+I	BB	1	38	12/12/2022
MODULE 4						
39	Decidable questions,	L+I	BB	1	39	13/12/2022
40	Un-decidable questions.	L+I	BB	1	40	14/12/2022

41	Turing machine model Representation	L+I	BB	1	41	15/12/2022
SECOND INTERNALS						
42	Language acceptability by TM	L+I	BB	1	42	22/12/2022
43	design of TM, Techniques for TM construction	L+I	BB	1	43	24/12/2022
44	TM Problems	L+I	BB	1	44	26/12/2022
45	TM Problems	L+I	BB	1	45	27/12/2022
46	Pedagogy: QUIZ	L+I	BB	1	46	28/12/2022
47	Variants of Turing Machines (TM)	L+I	BB	1	47	29/12/2022
48	Variants of Turing Machines (TM)	L+I	BB	1	48	31/12/2022
49	The model of Linear Bounded automata.	L+I	BB	1	49	02/01/2023
50	CBS: Introduction to LEX & YACC	L+I	LCD	1	50	03/01/2023
MODULE 5						
51	Definition of an algorithm, decidability, decidable languages	L+I	LCD	1	51	04/01/2023
52	Undecidable languages	L+I	LCD	1	52	05/01/2023
53	halting problem of TM	L+I	LCD	1	53	09/01/2023
54	Post correspondence problem	L+I	LCD	1	54	10/01/2023
55	Complexity: Growth rate of functions, the classes of P and NP	L+I	LCD	1	55	11/01/2023
56	Quantum Computation: quantum computers	L+I	LCD	1	56	12/01/2023
57	Church-Turing thesis.	L+I	LCD	1	57	16/01/2023
58	Applications: G.1 Defining syntax of programming language, Appendix J: Security	L+I	LCD	1	58	17/01/2023
THIRD INTERNALS						


Course in charge


Module Coordinator


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**DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND
MACHINE LEARNING**

NAME OF THE STAFF : SAHANA SHARMA M

SUBJECT CODE/NAME : 18AI55/ PRINCIPLES OF ARTIFICIAL INTELLIGENCE

SEMESTER/YEAR/SEC : V A

ACADEMIC YEAR : 2022-2023

Sl. No	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	Introduction to AI: History, Intelligent systems, foundation and sub area of AI , applications, current trend and development of AI	L+I	BB+LCD	1	1	10-10-2022
2	Problem solving: State space search- Tic Tac Toe game playing, Approach 1, Approach2	L+I	BB+LCD	1	2	11-10-2022
3	Problem solving: state space search- Tic Tac Toe game playing Approach3	L+I	BB+LCD	1	3	12-10-2022
4	Production System: Water Jug problem	L+I	BB+LCD	1	4	13-10-2022
5	Production System: Missionaries and Cannibals	L+I	BB+LCD	1	5	17-10-2022
6	Production System: Eight puzzle problem	L+I	BB+LCD	1	6	18-10-2022
7	Exhaustive Search: BFS with water jug problem	L+I	BB+LCD	1	7	19-10-2022
8	Exhaustive Search: DFS with water jug problem	L+I	BB+LCD	1	8	20-10-2022
9	Depth First Iterative Deepening, Bidirectional Search.	L+I	BB+LCD	1	9	27-10-2022
10	Heuristic Search Techniques: Branch and Bound Search	L+I	BB+LCD	1	10	28-10-2022

Sl. No	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
11	Heuristic Search Techniques: Hill climbing.	L+I	BB+LCD	1	11	29-10-2022
12	Beam Search, Best-First Search	L+I	BB+LCD	1	12	31-10-2022
13	A* Algorithm and Optimal solution by A*Algorithm.	L+I	BB+LCD	1	13	2-11-2022
14	Iterative deepening A*	L+I	BB+LCD	1	14	3-11-2022
MODULE 2						
15	Problem reduction- And OR Graph	L+I	BB+LCD	1	15	7-11-2022
16	Game problem, Status labelling procedure in game tree.	L+I	BB+LCD	1	16	9-11-2022
17	Game problem, Status labelling procedure in game tree.	L+I	BB+LCD	1	17	10-11-2022
18	Nim Game problem.	L+I	BB+LCD	1	18	12-11-2022
19	Internal Assessment Test1				19	16-11-2022
20	Bounded look-ahead strategy using MINIMAX procedure	L+I	BB+LCD	1	20	24-11-2022
21	MINIMAX procedure				21	26-11-2022
22	Alpha-beta pruning: Refinements, Alternative to alpha beta-MINIMAX	L+I	BB+LCD	1	22	28-11-2022
23	Two-player perfect information games	L+I	BB+LCD	1	23	29-11-2022
MODULE 4						
24	Advanced problem solving paradigm: Planning: types of planning system	L+I	BB+LCD	1	24	30-11-2022
25	Block world problem	L+I	BB+LCD	1	25	1-12-2022
26	Logic based planning	L+I	BB+LCD	1	26	5-12-2022
27	Linear planning using a goal stack	L+I	BB+LCD	1	27	6-12-2022
28	Linear planning using a goal stack	L+I	BB+LCD	1	28	7-12-2022
29	Means-ends analysis	L+I	BB+LCD	1	29	8-12-2022
30	Non- linear planning strategies	L+I	BB+LCD	1	30	10-12-2022
31	Non- linear planning strategies	L+I	BB+LCD	1	31	12-12-2022
32	Learning plans	L+I	BB+LCD	1	32	13-12-2022
MODULE 5						
33	Knowledge Representation: Approaches	L+I	BB+LCD	1	33	14-12-2022
34	Knowledge representation using semantic network	L+I	BB+LCD	1	34	15-12-2022

Sl. No	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
35	Internal Assessment Test2			1	35	21-12-2022
36	Extended semantic networks for KR,	L+I	BB+LCD	1	36	22-12-2022
37	Expert system: introduction phases	L+I	BB+LCD	1	37	24-12-2022
38	Expert system architecture	L+I	BB+LCD	1	38	26-12-2022
39	ES verses Traditional system	L+I	BB+LCD	1	39	27-12-2022
MODULE 3						
40	Logic concepts and logic Programming: Propositional Calculus, Truth table, equivalence laws	L+I	BB+LCD	1	40	28-12-2022
41	Propositional logic, Natural deduction system	L+I	BB+LCD	1	41	2-1-2023
42	Semantic Tableau System in propositional logic, Semantic tableau rules		BB+LCD		42	3-1-2023
43	Semantic Tableau System , satisfiability and Un-satisfiability	L+I	BB+LCD	1	43	4-1-2023
44	Resolution refutation Propositional logic: conversion of a formula into set of clauses	L+I	BB+LCD	1	44	5-1-2023
45	Conversion of formula to its CNF, resolution of clauses.	L+I	BB+LCD	1	45	9-1-2023
46	Predicate logic: Calculus, First order predicate calculus	L+I	BB+LCD	1	46	10-1-2023
47	Interpretation of formulae in FOL	L+I	BB+LCD	1	47	11-1-2023
48	Satisfiability and Un-satisfiability in FOL	L+I	BB+LCD	1	48	12-1-2023
49	Pedagogy : Seminar - Module 3	L+I	BB+LCD	1	49	16-1-2023
50	Seminar	L+I	BB+LCD	1	50	17-1-2023
51	Internal Assessment Test3			1	51	20-1-2023

Text Books:


1. Saroj Kaushik, Artificial Intelligence, Cengage learning, 2014

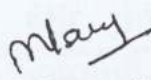
Reference Books:

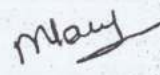
1. Elaine Rich, Kevin Knight, Artificial Intelligence, Tata McGraw Hill
2. Nils J. Nilsson, Principles of Artificial Intelligence, Elsevier, 1980
3. Stuart Russel, Peter Norvig, Artificial Intelligence: A Modern Approach, Pearson Education, 3rd Edition, 2009
4. George F Luger, Artificial Intelligence Structure and strategies for complex, Pearson Education, 5th Edition, 2011

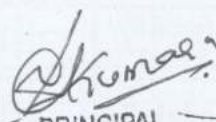
Details of the teaching aids:

- LCD
- Black Board


Course Incharge


Module coordinator


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Head of the Department
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K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING
LESSON PLAN 2022-22 ODD SEMESTER

COURSE INCHARGE : DR. AMULYASHREE S
COURSE CODE/TITLE : 18AI56 / MATHEMATICS FOR MACHINE LEARNING
YEAR/ SEMESTER/SECTION : III/V/A
BRANCH : ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1						
1	Introduction	L+D	BB	1	1	10-10-2022
2	Matrices	L+D	BB	1	2	11-10-2022
3	System of Linear Equations, Vector Spaces	L+D	BB	1	3	13-10-2022
4	Linear Dependence	L+D	BB	1	4	14-10-2022
5	Linear Independence	L+D	BB	1	5	15-10-2022
6	Gaussian Elimination	L+D	BB	1	6	17-10-2022
7	Basis and basis set	L+D	BB	1	7	18-10-2022
8	Rank, Norms	L+D	BB	1	8	20-10-2022
9	Inner Products, Lengths	L+D	BB	1	9	21-10-2022

10	Distances	L+D	BB	1	10	25-10-2022
11	Angles	L+D	BB	1	11	27-10-2022
Module 2						
12	Orthogonality	L+D	BB	1	12	28-10-2022
13	Orthonormal Basis	L+D	BB	1	13	31-10-2022
14	Orthogonal Complement	L+D	BB	1	14	3-11-2022
15	Rotations- 1D, 2D	L+D	BB	1	15	4-11-2022
16	Rotations-3D	L+D	BB	1	16	7-11-2022
17	Problem solving on orthogonality	L+D	BB	1	17	8-11-2022
18	Revision	L+D	BB	1	18	10-11-2022
19	Revision	L+D	BB	1	19	12-11-2022
20	Internal Assessment Test 1			1	20	16-11-2022
21	Determinant and Trace	L+D	BB	1	21	17-11-2022
22	Eigenvalues	L+D	BB	1	22	18-11-2022
23	Eigenvectors – its interpretations	L+D	BB	1	23	21-11-2022
24	Projections	L+D	BB	1	24	22-11-2022
25	Regressions	L+D	BB	1	25	24-11-2022
26	Diagonalization,	L+D	BB	1	26	25-11-2022
27	Singular Value Decomposition	L+D	BB	1	27	28-11-2022
28	Eigen decomposition vs Singular Value Decomposition	L+D	BB	1	28	29-11-2022
	Pedagogy Written Assignment: Solved problems on Linear Algebra					
Module 3						
20	Introduction,	L+D	BB	1	29	1-12-2022
21	Differentiation of Univariate Functions	L+D	BB	1	30	2-12-2022
22	Partial Differentiation and Gradients	L+D	BB	1	31	5-12-2022
23	Gradients of Vector-Valued Functions	L+D	BB	1	32	6-12-2022

24	Gradients of Matrices	L+D	BB	1	33	8-12-2022
25	Useful Identities for Computing Gradients	L+D	BB	1	34	9-12-2022
26	Backpropagation	L+D	BB	1	35	10-12-2022
27	Problems	L+D	BB	1	36	12-12-2022
28	Solving problems on gradients and vector-valued functions	L+D	BB	1	37	13-12-2022
30	Revision	L+D	BB	1	39	15-12-2022
Module 4						
31	Probability concepts	L+D	BB	1	40	16-12-2022
32	Internal Assessment Test 2			1	41	21-12-2022
33	Conditional probability	L+D	BB	1	42	22-12-2022
34	Bayes' Theorem	L+D	BB	1	43	23-12-2022
35	Discrete and Continuous Random Variables	L+D	BB	1	44	26-12-2022
36	Discrete distributions	L+D	BB	1	44	27-12-2022
36	Continuous distributions	L+D	BB	1	45	29-12-2022
37	Standard Discrete Distribution functions	L+D	BB	1	46	30-12-2022
38	Continuous distribution functions	L+D	BB	1	47	31-12-2022
39	Central Limit theorem	L+D	BB	1	48	2-1-2023
40	Practice problems on Central limit theorem	L+D	BB	1	49	3-1-2023
Module 5						

35	Introduction	L+D	BB	1	50	5-1-2023
36	Optimization Using Gradient Descent	L+D	BB	1	51	6-1-2023
37	Constrained Optimization	L+D	BB	1	52	9-1-2023
38	Lagrange Multipliers	L+D	BB	1	53	10-1-2023
39	Convex Optimization	L+D	BB	1	54	12-1-2023
40	Practice problems	L+D	BB	1	55	13-1-2023
41	Revision	L+D	BB	1	56	16-1-2023
42	Internal Assessment Test 3				57	20-1-2023

Text Books:

1. Marc Peter Deisenroth, A. Aldo Faisal, and Cheng Soon Ong. "Mathematics for Machine Learning", Published by Cambridge University Press, Copyright 2020.

Reference Books:

1. Sheldon Axler, "Linear Algebra Done Right" third edition, 2015, Springer
2. David C. Lay, "Linear Algebra and its Applications," 3rd edition, Pearson Education (Asia) Pte. Ltd, 2005
3. Gilbert Strang, "Linear Algebra and its Applications", 3rd edition, Thomson Learning Asia, 2003
4. D. Chatterjee, "Analytical Geometry: Two and Three Dimensions", Alpha Science International Limited, 2009.
5. Charles M. Grinstead, J. Laurie Snell, "Introduction to Probability".
6. DasGupta, Anirban, "Probability for Statistics and Machine Learning: Fundamentals and Advanced Topics", Springer, 2011
7. David Morin, "Probability: For the Enthusiastic Beginner", 2016
8. Jeyakumar, Alexander M. Rubinov, "Continuous Optimization: Current Trends and Modern Applications (Applied Optimization) 2005th Edition.
9. Kulkarni, Anand J., Satapathy, Suresh Chandra, "Optimization in Machine Learning and Applications", Springer, 2020.

Details of the teaching aids:

- Black Board


Course Incharge


Module coordinator


HOD AIML

Head of the Department
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**K S INSTITUTE OF TECHNOLOGY BENGALURU
DEPARTMENT OF ARTIFICIAL
INTELLIGENCE AND MACHINE LEARNING**



NAME OF THE STAFF: **Dr. Amulyashree S**
SUBJECT CODE/NAME: **18AIS7/ARTIFICIAL INTELLIGENCE LAB**
SEMESTER/YEAR/SEC: **V/III/A**
ACADEMIC YEAR : **2022-2023**

Sl. No.	Topic to be covered	Teaching Aid	Proposed Date
1	Practice programs in Python (Program 1 & 2)	Projector and Board	13/10/22
2	Practice programs in Python (Program 3 & 4)	Projector and Board	20/10/22
3	Practice programs in Python (Program 5)	Projector and Board	27/10/22
4	Implement and Demonstrate Depth First Search Algorithm on Water Jug Problem	Projector and Board	3/11/22
5	Implement and Demonstrate Best First Search Algorithm on any AI problem	Projector and Board	10/11/22
6	Implement AO* Search algorithm	Projector and Board	17/11/22
7	Solve 8-Queens Problem with suitable assumptions	Projector and Board	24/11/22
6	Implementation of TSP using heuristic approach	Projector and Board	1/12/22
7	Implementation of the problem solving strategies: either using Forward Chaining or Backward Chaining	Projector and Board	8/12/22
8	Implement resolution principle on FOPL related problems	Projector and Board	15/12/22
9	Implement any Game and demonstrate the Game playing strategies	Projector and Board	22/12/22
10	Pedagogy: Implement A* Search Algorithm	Projector and Board	29/12/22
11	Practice Lab	Projector and Board	5/1/23
12	Lab Internals		23/1/23

 Signature of course Incharge

 Signature of Module Coordinator

 Signature of HOD

 Signature of Principal

K.S. INSTITUTE OF TECHNOLOGY
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K S INSTITUTE OF TECHNOLOGY BENGALURU
DEPARTMENT OF ARTIFICIAL
INTELLIGENCE AND MACHINE LEARNING



NAME OF THE STAFF: Prof. Amulyashree S
 SUBJECT CODE/NAME: 18AI57/ARTIFICIAL INTELLIGENCE LAB
 SEMESTER/YEAR/SEC: V/III/A
 ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Teaching Aid	Proposed Date
1	Practice programs in Python (Program 1 & 2)	Projector and Board	14/10/22
2	Practice programs in Python (Program 3 & 4)	Projector and Board	15/10/22
3	Practice programs in Python (Program 5)	Projector and Board	21/10/22
4	Implement and Demonstrate Depth First Search Algorithm on Water Jug Problem	Projector and Board	28/10/22
5	Implement and Demonstrate Best First Search Algorithm on any AI problem	Projector and Board	4/11/22
6	Implement AO* Search algorithm	Projector and Board	18/12/22
7	Solve 8-Queens Problem with suitable assumptions	Projector and Board	2/12/22
6	Implementation of TSP using heuristic approach	Projector and Board	9/12/22
7	Implementation of the problem solving strategies: either using Forward Chaining or Backward Chaining	Projector and Board	16/12/22
8	Implement resolution principle on FOPL related problems	Projector and Board	30/12/22
9	Implement any Game and demonstrate the Game playing strategies	Projector and Board	30/12/22
10	Pedagogy: Implement A* Search Algorithm	Projector and Board	6/1/23
11	Practice Lab	Projector and Board	13/1/23
12	Lab Internals		23/1/23

Signature of course Incharge

Signature of Module Coordinator

Signature of HOD

Signature of Principal
 PRINCIPAL

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K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : ANU MATHEWS

COURSE CODE/TITLE : Database Management Systems Laboratory

YEAR/ SEMESTER/SECTION : 3/5/A

ACADEMIC YEAR : 2022-2023

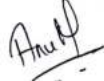
Sl. No.	Topic to be covered	Teaching Aid	Proposed Date
1	<p>Consider the following schema for a Library Database: BOOK(Book_id, Title, Publisher_Name, Pub_Year) BOOK_AUTHORS(Book_id, Author_Name) PUBLISHER(Name, Address, Phone) BOOK_COPIES(Book_id, Branch_id, No-of_Copies) BOOK_LENDING(Book_id, Branch_id, Card_No, Date_Out, Due_Date) LIBRARY_BRANCH(Branch_id, Branch_Name, Address)</p> <p>Write SQL queries to</p> <ol style="list-style-type: none">1. Retrieve details of all books in the library – id, title, name of publisher, authors, number of copies in each branch, etc.2. Get the particulars of borrowers who have borrowed more than 3 books, but from Jan 2017 to Jun 2017.3. Delete a book in BOOK table. Update the contents of other tables to reflect this data manipulation operation.4. Partition the BOOK table based on year of publication. Demonstrate its working with a simple query.5. Create a view of all books and its number of copies that are currently available in the Library.	Projector and Board	B1: 13/10/23 B2: 14/10/23

2	<p>Consider the following schema for Order Database: SALESMAN(Salesman_id, Name, City, Commission) CUSTOMER(Customer_id, Cust_Name, City, Grade, Salesman_id) ORDERS(Ord_No, Purchase_Amt, Ord_Date, Customer_id, Salesman_id)</p> <p>Write SQL queries to</p> <ol style="list-style-type: none"> 1. Count the customers with grades above Bangalore's average. 2. Find the name and numbers of all salesman who had more than one customer. 3. List all the salesman and indicate those who have and don't have customers in their cities (Use UNION operation.) 4. Create a view that finds the salesman who has the customer with the highest order of a day. 5. Demonstrate the DELETE operation by removing salesman with id 1000. All his orders must also be deleted. 	Projector and Board	B1:20/10/23 B2: 15/10/23
3	<p>Consider the schema for Movie Database: ACTOR(Act_id, Act_Name, Act_Gender) DIRECTOR(Dir_id, Dir_Name, Dir_Phone) MOVIES(Mov_id, Mov_Title, Mov_Year, Mov_Lang, Dir_id) MOVIE_CAST(Act_id, Mov_id, Role) RATING(Mov_id, Rev_Stars)</p> <p>Write SQL queries to</p> <ol style="list-style-type: none"> 1. List the titles of all movies directed by „Hitchcock“. 2. Find the movie names where one or more actors acted in two or more movies. 3. List all actors who acted in a movie before 2000 and also in a movie after 2015 (use JOIN operation). 4. Find the title of movies and number of stars for each movie that has at least one rating and find the highest number of stars that movie received. Sort the result by movie title. 5. Update rating of all movies directed by „Steven Spielberg“ to 5. 	Projector and Board	B1: 27/10/23 B2: 21/10/23
4	<p>Consider the schema for College Database: STUDENT(USN, SName, Address, Phone, Gender) SEMSEC(SSID, Sem, Sec) CLASS(USN, SSID) SUBJECT(Subcode, Title, Sem, Credits) IAMARKS(USN, Subcode, SSID, Test1, Test2, Test3, FinalIA)</p> <p>Write SQL queries to</p>	Projector and Board	B1: 03/11/23 B2: 28/10/23

	<p>1. List all the student details studying in fourth semester „C” section.</p> <p>2. Compute the total number of male and female students in each semester and in each section.</p> <p>3. Create a view of Test1 marks of student USN „1BI15CS101” in all subjects.</p> <p>4. Calculate the FinalIA (average of best two test marks) and update the corresponding table for all students.</p> <p>5. Categorize students based on the following criterion: If FinalIA = 17 to 20 then CAT = „Outstanding” If FinalIA = 12 to 16 then CAT = „Average” If FinalIA < 12 then CAT = „Weak” Give these details only for 8th semester A, B, and C section students.</p>		
5	<p>Consider the schema for Company Database: EMPLOYEE(SSN, Name, Address, Sex, Salary, SuperSSN, DNo) DEPARTMENT(DNo, DName, MgrSSN, MgrStartDate) DLOCATION(DNo, DLoc) PROJECT(PNo, PName, PLocation, DNo) WORKS_ON(SSN, PNo, Hours)</p> <p>Write SQL queries to</p> <p>1. Make a list of all project numbers for projects that involve an employee whose last name is „Scott”, either as a worker or as a manager of the department that controls the project.</p> <p>2. Show the resulting salaries if every employee working on the „IoT” project is given a 10 percent raise.</p> <p>3. Find the sum of the salaries of all employees of the „Accounts” department, as well as the maximum salary, the minimum salary, and the average salary in this department</p> <p>4. Retrieve the name of each employee who works on all the projects controlled by department number 5 (use NOT EXISTS operator).</p> <p>5. For each department that has more than five employees, retrieve the department number and the number of its employees who are making more than Rs. 6,00,000.</p>	Projector and Board	B1: 10/11/23 B2: 04/11/23
6	MINI PROJECT- ER Design Evaluation		B1: 17/11/23 B2: 18/11/23
7	MINI PROJECT- Relational Schema Design Evaluation		B1: 01/12/23 B2: 02/12/23
8	MINI PROJECT- SQL table creation with integrity constraints check.		B1: 08/12/23 B2: 09/12/23

9	MINI PROJECT- Implementation	B1: 15/12/23 B2: 16/12/23
10	MINI PROJECT- Implementation	B1: 22/12/23 B2: 23/12/23
12	MINI PROJECT- Implementation	B1: 29/12/23 B2: 30/12/23
13	MINI PROJECT- Implementation	B1: 05/01/23 B2: 06/01/23
14	MINI PROJECT-Final Evaluation	B1: 12/01/23 B2: 13/01/23
15	LAB TEST	B1: 23/01/23 B2: 24/01/23


Signature of course Incharge


Signature of Module Coordinator


Signature of HOD
Head of the Department
Artificial Intelligence & Machine Learning
K.S. Institute of Technology
Bengaluru - 560 109


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BENGALURU - 560 109



KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF CHEMISTRY

NAME OF THE FACULTY : Dr. KIRAN KUMAR S.R

SUBJECT: ENVIRONMENTAL STUDIES (18CIV59)

BRANCH: CSE

SECTION: AIML

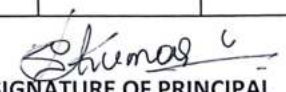
ACADEMIC YEAR : 2021-2022

Sl. No	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative	Proposed Date
					No. of Periods	
MODULE- 1: Ecosystems						
1	Ecosystems (Structure and Function): Forest, Desert, Wetlands, Riverine, Oceanic and Lake.	L	BB	1	1	13/10/2021
2	Biodiversity: Types, Value; Hot-spots; Threats and Conservation of biodiversity,	L	BB	1	2	23/10/2021
3	Forest Wealth, and Deforestation.	L	BB	1	3	27/10/2021
MODULE- 2: Advances in Energy Systems						
4	Advances in Energy Systems (Merits, Demerits, Global Status and Applications): Hydrogen, Solar, OTEC, Tidal and Wind.	L	BB	1	4	10/11/2021
5	Natural Resource Management (Concept and case-studies): Disaster Management, Sustainable Mining,	L	BB	1	5	17/11/2021

6	Cloud Seeding, and Carbon Trading.	L	BB	1	6	24/11/2021
MODULE- 3: Environmental Pollution						
7	Environmental Pollution (Sources, Impacts, Corrective and Preventive measures, Relevant Environmental Acts, Case-studies): Surface and Ground Water Pollution; Noise pollution; Soil Pollution and Air Pollution.	L	BB	1	7	1/12/2021
8	Waste Management & Public Health Aspects: Bio-medical Wastes; Solid waste; Hazardous wastes; E-wastes; Industrial and Municipal Sludge.	L	BB	1	8	8/12/2021
MODULE- 4: Global Environmental Concerns						
9	Global Environmental Concerns (Concept, policies and case-studies):Ground water depletion/recharging, Climate Change.	L	BB	1	9	15/12/2021
10	Acid Rain; Ozone Depletion; Radon and Fluoride problem in drinking water.	L	BB	1	10	22/12/2021
11	Resettlement and rehabilitation of people, Environmental Toxicology.	L	BB	1	11	29/12/2021
MODULE- 5: Latest Developments in Environmental Pollution Mitigation Tools						
12	G.I.S. & Remote Sensing, Environment Impact Assessment, Environmental Management Systems.	L	BB	1	12	5/1/2022
13	ISO14001; Environmental Stewardship- NGOs.	L	BB	1	13	12/1/2022
14	Field work: Visit to an Environmental Engineering Laboratory or Green Building or Water Treatment Plant or Waste water treatment Plant; ought to be Followed by understanding of process .	L	BB	1	14	19/1/2022


SIGNATURE OF FACULTY


SIGNATURE OF HOD
Head of the Department
Dept. of Science and Humanities
K.S. Institute of Technology
Bengaluru - 560 109


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BENGALURU - 560 109



K S INSTITUTE OF TECHNOLOGY, BANGALORE
DEPARTMENT OF APPLIED SCIENCES & HUMANITIES
LESSON PLAN 2022-23 EVENSEMESTER

COURSE INCHARGE : MAMATHA N
COURSE CODE/TITLE : 21MATCS41/ MATHEMATICAL FOUNDATIONS FOR
COMPUTING, PROBABILITY & STATISTICS
YEAR/ SEMESTER : II / IV
BRANCH : AIML

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1						
1	Introduction to Correlation and regression.	L+D,PS	BB	1	1	17/05/2023
2	Problems on Karl Pearson's coefficient of correlation.	L+D,PS	BB	2	3	18/05/2023 22/05/2023
3	Problems on coefficient of rank correlation.	L+D,PS	BB	2	5	23/05/2023 24/05/2023
4	Introduction to Regression analysis- lines of regression.	L+D,PS	BB	1	6	25/05/2023
5	Problems on lines of regression.	L+D,PS	BB	2	8	27/05/2023 29/05/2023
6	Introduction to curve fitting by the method of least squares.	L+D,PS	BB	1	9	30/05/2023
7	Problems on fitting the curves of the form- $y = ax + b$.	L+D,PS	BB	1	10	31/05/2023
8	Problems on fitting the curves of the form- $y = ax^b$	L+D,PS	BB	1	11	01/06/2023
9	Problems on fitting the curves of the form- $y = ax^2 + bx+c$.	L+D,PS	BB	1	12	05/06/2023

Module 2						
10	Introduction to basic probability theory and Random variables (discrete and continuous).	L+D,PS	BB	1	13	06/06/2023
11	Problems on discrete probability mass and density functions.	L+D,PS	BB	1	14	07/06/2023
12	Problems on mathematical expectation, mean and variance.	L+D,PS	BB	1	15	08/06/2023
13	Binomial distributions- derivations for mean and standard deviation.	L+D,PS	BB	1	16	9/06/2023
14	Problems on Binomial distributions.	L+D,PS	BB	2	18	10/06/2023 12/06/2023
15	Poisson distributions- derivations for mean and standard deviation.	L+D,PS	BB	1	19	14/06/2023
16	Problems on Poisson distributions.	L+D,PS	BB	1	20	15/06/2023
IA-1(19/06/2023-21/06/2023)						
17	Problems on continuous probability mass and density functions	L+D,PS	BB	2	22	16/06/2023 19/06/2023
18	Problems on Normal distributions	L+D,PS	BB	2	24	21/06/2023 22/06/2023
Module 3						
19	Joint Probability distribution for two discrete random variables.	L+D,PS	BB	1	25	23/06/2023
20	Expectation of Joint Probability distribution.	L+D,PS	BB	1	26	30/06/2023
21	Covariance of Joint Probability distribution.	L+D,PS	BB	1	27	03/07/2023
22	Correlation of two discrete random variables.	L+D,PS	BB	2	29	05/07/2023 06/07/2023
23	Introduction to sampling distributions.	L+D,PS	BB	1	30	07/07/2023
24	Standard error- Type-I and Type II errors.	L+D,PS	BB	2	32	08/07/2023 10/07/2023
25	Test of hypothesis for means.	L+D,PS	BB	1	33	12/07/2023
26	Student's t-distribution.	L+D,PS	BB	2	35	13/07/2023 14/07/2023
27	Chi-square distribution as a test of goodness of fit.	L+D,PS	BB	2	37	17/07/2023 19/07/2023

Module 4						
28	Fundamentals of Logic.	L+D,PS	BB	1	38	20/07/2023
29	Basic connectives and truth tables.	L+D,PS	BB	2	40	21/07/2023 24/07/2023
30	Logical equivalence – The laws of Logic.	L+D,PS	BB	2	42	26/07/2023 27/07/2023
31	Logical implication – Rules of Inference.	L+D,PS	BB	2	44	28/07/2023 03/08/2023
32	Fundamentals of Logic: The Use of Quantifiers.	L+D,PS	BB	2	46	04/08/2023 07/08/2023
IA-2(31/07/2023- 02/08/2023)						
33	Quantifiers and Definitions.	L+D,PS	BB	2	48	09/08/2023 10/08/2023
34	Proofs of Theorems.	L+D,PS	BB	2	50	11/08/2023 14/08/2023
Module 5						
35	Introduction to Cartesian Products and Relations.	L+D,PS	BB	1	51	16/08/2023
36	Functions – Plain and One-to-One and Onto Functions.	L+D,PS	BB	1	52	17/08/2023
37	Function Composition and Inverse Functions.	L+D,PS	BB	1	53	18/08/2023
38	Relations: Properties of Relations.	L+D,PS	BB	1	54	21/08/2023
39	Computer Recognition – Zero-One Matrices.	L+D,PS	BB	1	55	23/08/2023
40	Directed Graphs.	L+D,PS	BB	1	56	24/08/2023
41	Partial Orders – Hasse Diagrams.	L+D,PS	BB	1	57	25/08/2023
42	Equivalence Relations and Partitions.	L+D,PS	BB	1	58	28/08/2023
43	Introduction to Graph Theory: Definitions and Examples.	L+D,PS	BB	1	59	30/08/2023
44	Definitions and Examples of Sub-graphs.	L+D,PS	BB	1	60	31/08/2023
45	Complements.	L+D,PS	BB	1	61	31/08/2023
46	Graph Isomorphism.	L+D,PS	BB	1	62	01/09/2023
47	Vertex Degree, Euler Trails and Circuits.	L+D,PS	BB	2	64	02/09/2023 04/09/2023
IA-3(06/09/2023- 08/09/2023)						
48	Revision.	L+D,PS	BB	2	66	14/09/2023 15/09/2023

Textbooks:

1. Ralph P. Grimaldi and B V Ramana, Discrete and Combinatorial Mathematics- An Applied Introduction, Pearson Education, Asia, Fifth edition – 2007. ISBN 978-81- 7758-424-0.
2. Higher Engineering Mathematics B. S. Grewal Khanna Publishers 44th Edition, 2017

Reference Books:

- Kenneth H. Rosen, Discrete Mathematics and its Applications, Tata – McGraw Hill, Sixth Edition, Sixth reprint 2008. ISBN- (13):978-0-07-064824-1.
- Advanced Engineering Mathematics C. Ray Wylie, Louis C.Barrett McGraw-Hill 6th Edition 1995
- Higher Engineering Mathematics B. V. Ramana McGraw-Hill 11th Edition,2010

Web Materials:

List of NPTEL videos for various topics of Discrete Mathematical Structures

<https://www.youtube.com/watch?v=9AUCdsmBGmA&list=PL0862D1A947252D20&index=10>

<https://www.youtube.com/watch?v=oU60TuGHxe0&list=PL0862D1A947252D20&index=11>

<https://www.youtube.com/watch?v=0uTE24o3q-o&list=PL0862D1A947252D20&index=2>

<https://www.youtube.com/watch?v=DmClf8ypks&list=PL0862D1A947252D20&index=3>

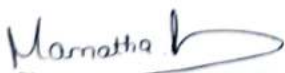
<https://www.youtube.com/watch?v=jNeISigUCo0&list=PL0862D1A947252D20&index=4>

<http://nptel.ac.in/courses.php?disciplineID=111>

[http://www.class-central.com/subject/math\(MOOCs\)](http://www.class-central.com/subject/math(MOOCs))

Details of the teaching aids:

1. BLACK BOARD USAGE
2. SELF STUDY



Signature of Course In-Charge



Signature of Module Coordinator



Signature of HOD,
Head of the Department
Dept. of Science and Humanities
K. S. Institute of Technology
Bangalore - 560 100



Signature of Principal

K. S. INSTITUTE OF TECHNOLOGY
BANGALORE - 560 100



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING
LESSON PLAN 2022-23 EVEN SEMESTER

NAME OF THE STAFF :Dr. AMULYASHREE S

SUBJECT CODE/NAME : 21CS42/ DESIGN AND ANALYSIS OF ALGORITHMS

SEMESTER/YEAR :IV A/ II

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	Introduction: What is an Algorithm? It's Properties, Algorithm Specification-using natural language,using Pseudo code convention	L+D	BB	2	2	17/05/2023
2	Fundamentals of Algorithmic Problem solving	L+ D	BB	1	3	19/05/2023
3	Analysis Framework-Time efficiency and space efficiency	L+ D	BB	2	5	23/05/2023 24/05/2023
4	Worst-case, Best-case and Average case efficiency	L+D	BB	1	6	24/05/2023
5	Performance Analysis: Estimating Space complexity and Time complexity of algorithms.	L+D	BB	2	8	26/05/2023 27/05/2023
6	Asymptotic Notations: Big-Oh notation (O), Omega notation (Ω), Theta notation (θ) with examples, Basic efficiency classes	L+D	BB	2	10	30/05/2023 31/05/2023
7	Mathematical analysis of Non-Recursive and Recursive Algorithms with Examples	L+D	BB	2	12	02/06/2023 06/06/2023
8	Brute force design technique: Selection sort, sequential search	L+D	BB	2	14	07/06/2023
9	String matching algorithm with complexity Analysis.	L+D	BB	1	15	09/06/2023
10	Revision	L+D	BB	1	16	10/06/2023
MODULE 2						
11	Divide and Conquer: General method, Recurrence equation for divide and conquer	L+D	BB	2	18	10/06/2023

12	Solving Divide and Conquer using Master's theorem	L+D	BB	2	20	13/06/2023 14/06/2023
13	Divide and Conquer algorithms and complexity Analysis of Finding the maximum & minimum	L+ D	BB	1	21	16/06/2023
IA-I(19/06/2023)						
14	Divide and Conquer algorithms and complexity Analysis of binary search	L+D	BB	1	22	10/06/2023 23/06/2023
15	Merge sort algorithm and complexity analysis	L+D	BB	2	24	24/06/2023 27/06/2023
16	Quick sort algorithm and complexity analysis	L+D	BB	2	26	28/06/2023
17	Decrease and Conquer Approach: Introduction	L+D	BB	1	27	30/06/2023
18	Insertion sort	L+D	BB	1	28	04/07/2023
19	Graph searching algorithms	L+D	BB	1	29	05/07/2023
20	Topological Sorting. It's efficiency analysis.	L+D	BB	2	31	05/07/2023 07/07/2023
21	Revision	L+D	BB	1	32	08/07/2023
MODULE 3						
22	Greedy Method: General method, Coin Change Problem	L+D	BB	2	34	08/07/2023 11/07/2023
23	Knapsack Problem, Solving Job sequencing with Deadlines problems	L+D	BB	2	36	12/07/2023
24	Minimum cost spanning trees: Prim's Algorithm, Kruskal's Algorithm with performance analysis.	L+D	BB	3	39	14/07/2023 18/07/2023 19/07/2023
25	Single source shortest paths: Dijkstra's Algorithm	L+D	BB	2	41	21/07/2023 22/07/2023
26	Optimal Tree problem: Huffiman Trees and Codes.	L+D	BB	1	42	25/07/2023
27	Transform and Conquer Approach: Introduction, Heaps and Heap Sort.	L+D	BB	2	44	26/07/2023
MODULE 4						
28	Dynamic Programming: General method with Examples, Multistage Graphs	L+D	BB	1	45	28/07/2023
IA-II(31/07/2023)						
29	Transitive Closure: Warshall's Algorithm.	L+D	BB	1	46	04/08/2023
30	All Pairs Shortest Paths: Floyd's Algorithm	L+D	BB	2	48	08/08/2023 09/08/2023
31	Knapsack problem,	L+D	BB	2	50	09/08/2023 11/08/2023
32	Bellman-Ford Algorithm	L+D	BB	2	52	16/08/2023

33	Travelling Sales Person problem	L+D	BB	1	53	18/08/2023
34	Space-Time Tradeoffs: Introduction, Sorting by Counting	L+D	BB	1	54	22/08/2023
35	Input Enhancement in String Matching- Harspool's algorithm.	L+D	BB	1	55	23/08/2023
MODULE 5						
36	Backtracking: General method, solution using backtracking to N-Queens problem	L+D	BB	2	57	25/08/2023 29/08/2023
37	Sum of subsets problem, Graph coloring, Hamiltonian cycles Problems.	L+D	BB	2	59	30/08/2023
38	Branch and Bound: Assignment Problem, Travelling Sales Person problem, 0/1 Knapsack problem	L+D	BB	3	62	01/09/2023 02/09/2023
39	NP-Complete and NP-Hard problems: Basic concepts, non- deterministic algorithms, P, NP, NP-Complete, and NP-Hard classes.	L+D	BB	2	62	02/08/2023 05/08/2023
IA-III(06/08/2023)						
40	Revision	L+D	BB	2	64	15/08/2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE1						
1	Module 1 Lab Programs Sort a given set of n integer elements using Selection Sort method and compute its time complexity. Run the program for varied values of n > 5000 and record the time taken to sort. Plot a graph of the time taken versus n. The elements can be read from a file or can be generated using the random number generator. Demonstrate using Java how the brute force method works along with its time complexity analysis: worst case, average case and best case	L+D, PS	LCD+BB	Lab Session-2HR	2	B1:23/05/2023 B2:19/05/2023 B3:18/05/2023
MODULE2						
2	Module 2 Lab Programs Sort a given set of n integer elements using Quick Sort method and compute its time complexity. Run the program for varied values of n > 5000 and record the time taken to sort. Plot a graph of the time taken versus n. The elements can be read from a file or can be generated using the random number generator. Demonstrate using Java how the divide-and-conquer method works along with its time complexity analysis: worst case, average case and best case	L+D, PS	LCD+BB	Lab Session-2HR	4	B1:30/05/2023 B2:26/05/2023 B3:25/05/2023
3	Module 2 Lab Programs Sort a given set of n integer elements using Merge Sort method and compute its time complexity. Run the program for varied values of n > 5000, and record the time taken to sort. Plot a graph of the time taken versus n. The elements can be read from a file or can be generated using the random number generator. Demonstrate using Java how the divide-and-conquer method works along with its time complexity analysis: worst case, average case and best case	L+D, PS	LCD+BB	Lab Session-2HR	6	B1:06/07/2023 B2:02/06/2023 B3:01/06/2023

MODULE3						
4	Module 3 Lab Programs Write & Execute Java Program To solve Knapsack problem using Greedy method.	L+D, PS	LCD+BB	LabSession-2HR	8	B1:06/07/2023B2:09/06/2023B3:08/06/2023
5	Write & Execute Java Program To find shortest paths to other vertices from a given vertex in a weighted connected graph, using Dijkstra's algorithm.	L+D, PS	LCD+BB	LabSession-2HR	10	B1:13/06/2023B2:16/06/2023B3:15/06/2023
6	Write & Execute Java Program To find Minimum Cost Spanning Tree of a given connected undirected graph using Kruskal's algorithm. Use Union-Find algorithms in your program.	L+D, PS	LCD+BB	LabSession-2HR	12	B1:04/07/2023B2:30/06/2023B3:06/07/2023
7	Write & Execute Java Program To find Minimum Cost Spanning Tree of a given connected undirected graph using Prim's algorithm.	L+D, PS	LCD+BB	LabSession-2HR	14	B1:11/07/2023B2:14/07/2023B3:13/07/2023
MODULE 4						
8	Module 4 Lab Programs Write & Execute Java Program To Solve All-Pairs Shortest Paths problem using Floyd's algorithm.	L+D, PS	LCD+BB	LabSession-2HR	16	B1:18/07/2023B2:21/07/2023B3:20/07/2023
9	Write & Execute Java Program To Solve All-Pairs Shortest Paths problem using Floyd's algorithm.	L+D, PS	LCD+BB	LabSession-2HR	18	B1:25/07/2023B2:28/07/2023B3:27/07/2023

10	Write & Execute Java Program To Solve 0/1 Knapsack problem using Dynamic Programming method.	L+D, PS	LCD+BB	LabSession-2HR	20	B1:08/08/2023B2:04/08/2023B3:03/08/2023
MODULE 5						
11	Module 5 Lab Programs Design and implement Java Program to find a subset of a given set $S = \{S_1, S_2, \dots, S_n\}$ of n positive integers whose SUM is equal to a given positive integer d . For example, if $S = \{1, 2, 5, 6, 8\}$ and $d = 9$, there are two solutions $\{1, 2, 6\}$ and $\{1, 8\}$. Display a suitable message, if the given problem instance doesn't have a solution.	L+D, PS	LCD+BB	LabSession-2HR	22	B1:22/08/2023B2:11/08/2023B3:10/08/2023
12	Design and implement Java Program to find all Hamiltonian Cycles in a connected undirected Graph G of n vertices using backtracking principle.	L+D, PS	LCD+BB	LabSession-2HR	24	B1:29/08/2023B2:18/08/2023B3:17/08/2023
13	Revision	L+D, PS	LCD+BB	LabSession-2HR	26	B1:29/08/2023B2:18/08/2023B3:17/08/2023

Total Number of Hours for theory	64 HR
Total Number of Hours for Laboratory	26 HR
Total Number of Hours for theory and Laboratory	90 HR

Text Books:

1. Introduction to the Design and Analysis of Algorithms, Anany Levitin: 2nd Edition, 2009. Pearson.
2. Computer Algorithms/C++, Ellis Horowitz, SatrajSahni and Rajasekaran, 2nd Edition, 2014, Universities Press.

Reference Books:

1. Introduction to Algorithms, Thomas H. Cormen, Charles E. Leiserson, Ronal L. Rivest, Clifford Stein, 3rd Edition, PHI.
2. Design and Analysis of Algorithms, S. Sridhar, Oxford (Higher Education)

Web Materials:

Weblinks and Video Lectures (e-Resources):

- <http://elearning.vtu.ac.in/econtent/courses/video/CSE/06CS43.html>
- <https://nptel.ac.in/courses/106101060>
- <http://elearning.vtu.ac.in/econtent/courses/video/FEP/ADA.html>
- <http://cse01-iiith.vlabs.ac.in/>
- <http://openclassroom.stanford.edu/MainFolder/CoursePage.php?course=IntroToAlgorithms>

Details for the teaching Aids

- Black Board
- LCD



Signature of Course In-Charge



Signature of Module Coordinator



Signature of HOD



Signature of Principal
PRINCIPAL

Head of the Department
Artificial Intelligence & Machine Learning
K.S. Institute of Technology
Bengaluru - 560 109

K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109



KS INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

NAME OF THE STAFF : SAHANA SHARMA M
SUBJECT CODE/NAME : 21CS43/ MICROCONTROLLER & EMBEDDED SYSTEMS
SEMESTER/YEAR : IV A/ II
ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1:						
1	Microprocessors versus Microcontrollers, ARM Embedded Systems,	L+I	BB+LCD	1	1	18-05-2023
2	The RISC design philosophy, The ARM Design Philosophy	L+I	BB+LCD	1	2	19-05-2023
3	Embedded System Hardware,	L+I	BB+LCD	1	3	19-05-2023
4	Embedded System Software, Pipeline	L+I	BB+LCD	1	4	22-05-2023
5	ARM Processor Fundamentals: Registers, Current Program Status Register	L+I	BB+LCD	1	5	25-05-2023
6	Exceptions, ARM data flow model with examples.	L+I	BB+LCD	1	6	29-05-2023
7	Interrupts, and the Vector Table	L+I	BB+LCD	1	7	01-06-2023
8	Core Extensions, Memory hierarchy, Tightly coupled memory.	L+I	BB+LCD	1	8	02-06-2023
9	Programming examples using Registers, Current Program Status Register	L+I	BB+LCD	1	9	02-06-2023
MODULE 2:						
10	Introduction to the ARM Instruction Set : Data Processing Instructions	L+I	BB+LCD	1	10	05-06-2023
11	Data Processing Instructions examples with barrel shifter	L+I	BB+LCD	1	11	08-06-2023
12	Compare instructions and Branch instructions	L+I	BB+LCD	1	12	09-06-2023

13	Load store instruction with single register transfer and multiple register transfer.	L+I	BB+LCD	1	13	09-06-2023
14	ARM processor addressing modes,	L+I	BB+LCD	1	14	12-06-2023
15	Program status register Instructions,				15	15-06-2023
16	Coprocessor Instructions	L+I	BB+LCD	1	16	16-06-2023
17	Software Interrupt Instructions and Loading constants.	L+I	BB+LCD	1	17	16-06-2023
18	IA1				18	20-06-2023
19	C Compilers and Optimization: :Basic C Data Types	L+I	BB+LCD	1	19	22-06-2023
20	C Looping Structures,	L+I	BB+LCD	1	20	23-06-2023
21	Register Allocation	L+I	BB+LCD	1	21	23-06-2023
22	Function Calls, Pointer Aliasing,	L+I	BB+LCD	1	22	26-06-2023
MODULE 3:						
23	C Compilers and Optimization :Structure Arrangement, Bit-fields	L+I	BB+LCD	1	23	30-06-2023
24	Unaligned Data and Endianness,	L+I	BB+LCD	1	24	30-06-2023
25	Unaligned Data and Endianness,	L+I	BB+LCD	1	25	03-07-2023
26	Division, Floating Point, Inline Functions	L+I	BB+LCD	1	26	06-07-2023
27	Division, Floating Point, Inline Functions	L+I	BB+LCD	1	27	07-07-2023
28	Inline Assembly,	L+I	BB+LCD	1	28	07-07-2023
29	Portability Issues	L+I	BB+LCD	1	29	10-07-2023
30	Portability Issues	L+I	BB+LCD	1	30	13-07-2023
31	ARM programming using Assembly language: Writing Assembly code, Profiling and cycle counting,	L+I	BB+LCD	1	31	14-07-2023
32	Instruction scheduling,	L+I	BB+LCD	1	32	14-07-2023
33	Register Allocation	L+I	BB+LCD	1	33	17-07-2023
34	Conditional Execution, Looping Constructs	L+I	BB+LCD	1	34	20-07-2023
MODULE 4:						
35	Embedded System Components: Embedded Vs General computing system, History of embedded systems, Classification of Embedded systems	L+I	BB+LCD	1	35	21-07-2023
36	Major applications areas of embedded systems, purpose of embedded systems.	L+I	BB+LCD	1	36	21-07-2023
37	Core of an Embedded System including all types of processor/controller	L+I	BB+LCD	1	37	24-07-2023
38	Memory, SRAM, DRAM	L+I	BB+LCD	1	38	27-07-2023
39	Sensors, Actuators,	L+I	BB+LCD	1	39	28-07-2023

40	IA2				40	01-08-2023
41	LED, 7 segment LED display	L+I	BB+LCD	1	41	03-08-2023
42	Stepper motor, Keyboard, Push button switch	L+I	BB+LCD	1	42	04-08-2023
43	Communication Interface (onboard and external types)	L+I	BB+LCD		43	04-08-2023
44	Communication Interface (onboard and external types)	L+I	BB+LCD	1	44	05-08-2023
45	Embedded firmware,	L+I	BB+LCD	1	45	07-08-2023
46	Other system components.	L+I	BB+LCD	1	46	10-08-2023
MODULE 5:						
47	RTOS and IDE for Embedded System Design: Operating System basics,	L+I	BB+LCD	1	47	11-08-2023
48	Types of operating systems, Task,	L+I	BB+LCD	1	48	11-08-2023
49	process and threads (Only POSIX Threads with an example program),	L+I	BB+LCD	1	49	14-08-2023
50	process and threads (Only POSIX Threads with an example program),	L+I	BB+LCD	1	50	17-08-2023
51	Thread preemption,	L+I	BB+LCD	1	51	18-08-2023
52	Thread preemption,	L+I	BB+LCD	1	52	18-08-2023
53	Multiprocessing and Multitasking,	L+I	BB+LCD	1	53	19-08-2023
54	Task Communication (without any program),	L+I	BB+LCD	1	54	21-08-2023
55	Task synchronization 03.09.2022 issues – Racing and Deadlock	L+I	BB+LCD	1	55	24-08-2023
56	Concept of Binary and counting semaphores (Mutex example without any program),	L+I	BB+LCD	1	56	25-08-2023
57	How to choose an RTOS, Integration and testing of Embedded hardware and firmware,	L+I	BB+LCD	1	57	25-08-2023
58	Embedded system Development Environment – Block diagram (excluding Keil), Disassembler/decompiler,	L+I	BB+LCD	1	58	28-08-2023
59	Simulator, emulator and debugging techniques, target hardware debugging, boundary scan.	L+I	BB+LCD	1	59	31-08-2023
60	Revision	L+I	BB+LCD	1	60	01-09-2023
61	Revision	L+I		1	61	04-09-2023
62	IA 3			1	62	07-09-2023
63	Revision	L+I	BB+LCD	1	63	14-09-2023
64	Revision	L+I	BB+LCD	1	64	16-09-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1:						
1	Module 1 Lab Programs Using Keil software, observe the various registers, dump, CPSR, with a simple ALP programme. Program to add two 32 bit numbers and view the result in register. Program to add two 32 bit numbers defined in memory and display the result in memory location.	Instruction and demonstration.	Keilµvision Software with CPU:LPC2148	Lab Session-2HR	2	B1: 17/5/2023 B2: 22/5/2023 B3: 23/5/2023
MODULE 2:						
2	Module 2 Lab Programs Write a program to find the sum of the first 10 integer numbers.	Instruction and demonstration	Keilµvision Software with CPU:LPC2148	Lab Session-2HR	4	B1: 24/5/2023 B2: 29/5/2023 B3: 30/5/2023
3	Write a program to find the factorial of a number	Instruction and demonstration	Keilµvision Software with CPU:LPC2148	Lab Session 2HR	6	B1: 24/5/2023 B2: 29/5/2023 B3: 30/5/2023
4	Write a program to add an array of 16 bit numbers and store the 32 bit result in internal RAM.	Instruction and demonstration	Keilµvision Software with CPU:LPC2148	Lab Session-2HR	8	B1: 07/6/2023 B2: 05/6/2023 B3: 06/6/2023
5	Write a program to find the square of a number (1 to 10) using a look-up table.	Instruction and demonstration	Keilµvision Software with CPU:LPC2148	Lab Session 2HR	10	B1: 07/6/2023 B2: 05/6/2023 B3: 06/6/2023
6	Write a program to find the largest or smallest number in an array of 32 numbers.	Instruction and demonstration	Keilµvision Software with CPU:LPC2148	Lab Session 2HR	12	B1: 14/6/2023 B2: 12/6/2023 B3: 13/6/2023
MODULE 3:						
7	Module 3 Lab Programs Write a program to arrange a series of 32 bit numbers in ascending/descending order.	Instruction and demonstration	Keilµvision Software with CPU:LPC2148	Lab Session 2HR	14	B1: 21/6/2023 B2: 19/6/2023 B3: 20/6/2023

8	Write a program to count the number of ones and zeros in two consecutive memory locations	Instruction and demonstration	Keilµvision Software with CPU:LPC2148	Lab Session 2HR	16	B1: 21/6/2023 B2: 19/6/2023 B3: 20/6/2023
9	Lab Test1			Lab Session 2HR	18	B1: 03/7/2023 B2: 05/7/2023 B3: 04/7/2023
10	Display "Hello World" message using Internal UART.	Instruction and demonstration	Keilµvision Software, FlashMagic, LPC2148 Microcontroller Kit	Lab Session 2HR	20	B1:08/7/2023 B2:10/7/2023 B3:11/7/2023
MODULE 4:						
11	Module 4 Lab Programs Interface and Control a DC Motor.	Instruction and demonstration	Keilµvision Software, FlashMagic, LPC2148 Microcontroller Kit DC Motor	Lab Session 2HR	22	B1: 12/7/2023 B2: 17/7/2023 B3: 18/7/2023
12	Interface a Stepper motor and rotate it in clockwise and anti-clockwise direction.	Instruction and demonstration	Keilµvision Software, FlashMagic, LPC2148 Microcontroller Kit Stepper Motor	Lab Session 2HR	24	B1: 12/7/2023 B2: 17/7/2023 B3: 18/7/2023
13	Determine Digital output for a given Analog input using the Internal ADC of the ARM controller.	Instruction and demonstration	Keilµvision Software, FlashMagic, LPC2148 Microcontroller Kit	Lab Session 2HR	26	B1: 19/7/2023 B2: 24/7/2023 B3: 22/7/2023
14	Interface a DAC and generate Triangular and Square waveforms.	Instruction and demonstration	Keilµvision Software, FlashMagic, LPC2148 Microcontroller Kit	Lab Session 2HR	28	B1: 26/7/2023 B2: 05/8/2023 B3: 25/7/2023

			Digital CRO			
15	Interface a 4x4 keyboard and display the key code on an LCD.	Instruction and demonstration	Keilµvision Software, FlashMagic, LPC2148 Microcontroller Kit	Lab Session 2HR	30	B1: 09/8/2023 B2: 07/8/2023 B3: 08/8/2023
16	Demonstrate the use of an external interrupt to toggle an LED On/Off	Instruction and demonstration	Keilµvision Software, FlashMagic, LPC2148 Microcontroller Kit	Lab Session 2HR	32	B1: 19/8/2023 B2: 14/8/2023 B3: 16/8/2023
17	Display the Hex digits 0 to F on a 7-segment LED interface, with an appropriate delay in between.	Instruction and demonstration	Keilµvision Software, FlashMagic, LPC2148 Microcontroller Kit	Lab Session 2HR	34	B1: 23/8/2023 B2: 21/8/2023 B3: 22/8/2023
18	Lab Test2			Lab Session 2HR	36	B1: 30/8/2023 B2: 28/8/2023 B3: 29/8/2023
MODULE 5:						
19	Module 5 Lab Programs Demonstration of IoT applications by using Arduino and Raspberry Pi	Demonstration/Workshop		Lab Session 2HR	38	B1: 02/9/2023 B2: 04/9/2023 B3: 05/9/2023
20	Lab Internals			Lab Session 2HR	40	B1: 13/9/2023 B2: 11/9/2023 B3: 12/9/2023

Total Number of Hours for Theory - 64 HR Total

Number of Hours for Laboratory - 40 HR

Total Number of Hours for theory and Laboratory - 104 HR

Text Books:

1. Andrew N Sloss, Dominic Symes and Chris Wright, ARM system developer's guide, Elsevier, Morgan Kaufman publishers, 2008.
2. Shibu K V, "Introduction to Embedded Systems", Tata McGraw Hill Education, Private Limited, 2nd Edition.

Reference Books:

1. Raghunandan. G.H, Microcontroller (ARM) and Embedded System, Cengage learning Publication, 2019
2. The Insider's Guide to the ARM7 Based Microcontrollers, Hitex Ltd., 1st edition, 2005.
3. Steve Furber, ARM System-on-Chip Architecture, Second Edition, Pearson, 2015.
4. Raj Kamal, Embedded System, Tata McGraw-Hill Publishers, 2nd Edition, 2008

Web Materials:

<https://developer.arm.com/>

<https://www.ti.com/design-resources/embedded-development.html>

<https://www.edx.org/learn/embedded-systems>

Web links and Video Lectures (e-Resources):

<https://www.arm.com/resources/education/online-courses>


<https://archive.nptel.ac.in/courses/106/105/106105193/>

Details for the teaching Aids

Black Board, LCD and Keil Software


Signature of Course In-Charge


Signature of Module Coordinator


Signature of HOD
Head of the Department
Artificial Intelligence & Machine Learning
K.S. Institute of Technology


Signature of Principal
PRINCIPAL
K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109.



KS INSTITUTE OF TECHNOLOGY BANGALORE
DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

NAME OF THE STAFF : Dr. VANEETA M
SUBJECT CODE/NAME : 21CS44/ OPERATING SYSTEMS
SEMESTER/YEAR : IV/II
ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Introduction to operating systems, System structures, Process Management						
1	What operating systems do; Computer System organization	L+D	LCD+BB	1	1	17-05-2023
2	Computer System architecture; Operating System structure	L+D	LCD+BB	1	2	18-05-2023
3	Operating System operations; Process management	L+ D	LCD+BB	1	3	19-05-2023
4	Memory management; Storage management; Protection and Security	L+ D	LCD+BB	1	4	22-05-2023
5	Distributed system; Special-purpose systems; Computing environments.	L+D	LCD+BB	1	5	24-05-2023
6	Operating System Services; User - Operating System interface; System calls	L+D	LCD+BB	1	6	25-05-2023
7	Types of system calls; System programs	L+D	LCD+BB	1	7	26-05-2023
8	Operating system design and implementation; Operating System structure	L+D	LCD+BB	1	8	29-05-2023
9	Virtual machines; Operating System generation; System boot	L+D	LCD+BB	1	9	31-05-2023
10	Process Management Process concept	L+D	LCD+BB	1	10	1-06-2023
11	Process scheduling	L+D	LCD+BB	1	11	2-06-2023
12	Operations on processes	L+D	LCD+BB	1	12	5-06-2023
13	Inter process communication	L+D	LCD+BB	1	13	7-06-2023
MODULE 2: Multi-threaded Programming, Process Scheduling, Process Synchronization						
14	Overview; Multithreading models;	L+ D	LCD+BB	1	14	8-06-2023
15	Multithreading models	L+ D	LCD+BB	1	15	9-06-2023
16	Thread Libraries; Threading issues.	L+D	LCD+BB	1	16	10-06-2023

17	Process Scheduling: Basic concepts; Scheduling Criteria	L+D	LCD+BB	1	17	12-06-2023
18	Scheduling Algorithms	L+D, PS(Tx)	LCD+BB	1	18	14-06-2023
19	Scheduling Algorithms	L+D, PS(Tx)	LCD+BB	1	19	15-06-2023
20	Scheduling Algorithms	L+D, PS(Tx)	LCD+BB	1	20	16-06-2023
21	Multiple-processor scheduling; Thread scheduling.	L+D	LCD+BB	1	21	27-06-2023
Internal Assessment 1						
22	Process Synchronization: Synchronization: The critical section problem	L+D	LCD+BB	1	22	28-06-2023
23	Peterson's solution; Synchronization hardware	L+I	LCD+BB	1	23	30-06-2023
24	Semaphores	L+D	LCD+BB	1	24	3-07-2023
25	Semaphores	L+D	LCD+BB	1	25	5-07-2023
26	Classical problems of synchronization	L+D	LCD+BB	1	26	6-07-2023
27	Monitors	L+D	LCD+BB	1	27	7-07-2023
MODULE 3: Deadlocks, Memory Management						
28	System model; Deadlock characterization;	L+D	LCD+BB	1	28	8-07-2023
29	Methods for handling deadlocks; Deadlock prevention	L+D	LCD+BB	1	29	10-07-2023
30	Deadlock avoidance	L+D, PS(Tx)	LCD+BB	1	30	12-07-2023
31	Deadlock avoidance	L+D, PS(Tx)	LCD+BB	1	31	13-07-2023
32	Deadlock detection and recovery from deadlock	L+D	LCD+BB	1	32	14-07-2023
33	Memory Management: Memory management strategies: Background	L+D	LCD+BB	1	33	17-07-2023
34	Swapping; Contiguous memory allocation;	L+D	LCD+BB	1	34	19-07-2023
35	Paging	L+D	LCD+BB	1	35	20-07-2023
36	Paging	L+D	LCD+BB	1	36	21-07-2023
37	Structure of page table	L+D	LCD+BB	1	37	24-07-2023
38	Segmentation	L+D,GD	LCD+BB	1	38	26-07-2023
MODULE 4: Virtual Memory Management, File System And Implementation of File System						
39	Background; Demand paging;	L+D	LCD+BB	1	39	27-07-2023
40	Copy-on-write	L+D	LCD+BB	1	40	28-07-2023
41	Page replacement	L+D, PS(Tx)	LCD+BB	1	41	3-08-2023

42	Allocation of frames; Thrashing	L+D	LCD+BB	1	42	4-08-2023
43	File System, Implementation of File System: File system: File concept	L+D	LCD+BB	1	43	5-08-2023
44	Access methods; Directory structure	L+D	LCD+BB	1	44	7-08-2023
45	Directory structure	L+D	LCD+BB	1	45	9-08-2023
Internal Assessment 2						
46	File system mounting; File sharing; Protection	L+D	LCD+BB	1	46	10-08-2023
47	Implementing File system: File system structure; File system implementation	L+D	LCD+BB	1	47	11-08-2023
48	Directory implementation; Allocation methods	L+D	LCD+BB	1	48	14-08-2023
49	Allocation methods	L+D	LCD+BB	1	49	16-08-2023
50	Free space management	L+D	LCD+BB	1	50	17-08-2023
MODULE 5: Secondary Storage Structures, Protection, Case Study: The Linux Operating System						
51	Mass storage structures; Disk structure; Disk attachment	L+D	LCD+BB	1	51	18-08-2023
52	Disk scheduling	L+D	LCD+BB	1	52	19-08-2023
53	Disk scheduling	L+D	LCD+BB	1	53	21-08-2023
54	Disk management; Swap space management	L+D	LCD+BB	1	54	23-08-2023
55	Protection: Goals of protection, Principles of protection, Domain of protection,	L+D	LCD+BB	1	55	24-08-2023
56	Access matrix, Implementation of access matrix,	L+D	LCD+BB	1	56	25-08-2023
57	Access control,	L+D	LCD+BB	1	57	28-08-2023
58	Revocation of access rights, Capability- Based systems	L+D	LCD+BB	1	58	30-08-2023
59	Case Study: The Linux Operating System: Linux history; Design principles; Kernel modules	L+D	LCD+BB	1	59	31-08-2023
60	Process management; Scheduling; Memory Management	L+D	LCD+BB	1	60	1-9-2023
61	File systems, Input and output; Inter- process communication	L+D	LCD+BB	1	61	2-9-2023
62	Inter-process communication	L+D	LCD+BB	1	62	4-9-2023
Internal Assessment 3						
63	Revision	L+D	LCD+BB	1	63	11-9-2023
64	Revision	L+D	LCD+BB	1	64	13-9-2023
65	Revision	L+D	LCD+BB	1	65	14-9-2023
66	Revision	L+D	LCD+BB	1	66	15-9-2023

Note - Test dates.

IA1: 28-6-2023, IA2:2-8-2023, IA3:8-9-2023

Total Number of Hours for theory - 66 HR

Text Books:

1. Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, Operating System Principles 7th edition, Wiley-India, 2006

Reference Books:

1. Ann McHoes Ida M Fylnn, Understanding Operating System, Cengage Learning, 6th Edition
2. D.M Dhamdhere, Operating Systems: A Concept Based Approach 3rd Ed, McGrawHill, 2013.
3. P.C.P. Bhatt, An Introduction to Operating Systems: Concepts and Practice 4th Edition, PHI(EEE), 2014.
4. William Stallings Operating Systems: Internals and Design Principles, 6th Edition, Pearson

Web Materials:

Weblinks and Video Lectures (e-Resources):

- <https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-033-computer-system-engineering-spring-2009>
- <http://nptel.ac.in/courses/106108101>
- <https://www.elsevier.com/books/operating-systems/tsichritzis/978-0-12-701750-1>
- https://www.youtube.com/watch?v=vBURTt97EkA&list=PLBlNk6fEyqRiVhbXDGLXDK_OQAeuVcp20
- https://www.youtube.com/watch?v=783KAB-tuE4&list=PLIemF3uozcAKTgsClj82voMK3TMR0YE_f
- <https://www.youtube.com/watch?v=3-ITLMMeeXY&list=PL3pGy4HtqwD0n7bQfHjPnsWzkeR-n6mkO>

Details for the teaching Aids


Black Board and LCD


Signature of Course In-Charge


Signature of Module Coordinator


Signature of HOD

Head of the Department
Artificial Intelligence & Machine Learning
K.S. Institute of Technology
Bengaluru - 560 109


Signature of Principal

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BENGALURU - 560 109.



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF APPLIED SCIENCE & HUMANITIES
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : Dr SHOBHA G
COURSE TYPE / CODE / TITLE : Theory / 21BE45 / BIOLOGY FOR ENGINEERS
YEAR/ SEMESTER/SECTION : II / IV
BRANCH : AIML

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module III: HUMAN ORGAN SYSTEMS AND BIO-DESIGNS - 2 (QUALITATIVE)						
1	Lungs as purification system (architecture, gas exchange mechanisms)	L+D	LCD+BB	1	1	01/6/2023
2	Spirometry, abnormal lung physiology - COPD, Ventilators	L+D	LCD+BB	1	2	05/6/2023
3	Heart-lung machine).Kidney as a filtration system (architecture)	L+D	LCD+BB	1	3	08/6/2023
4	Mechanism of filtration, CKD, dialysis systems)	L+D	LCD+BB	1	4	12/6/2023
5	Muscular and Skeletal Systems as scaffolds (architecture, mechanisms)	L+D	LCD+BB	1	5	15/6/2023
6	Bioengineering solutions for muscular dystrophy and osteoporosis	L+D	LCD+BB	1	6	22/6/2023
Module I: BIOMOLECULES AND THEIR APPLICATIONS (QUALITATIVE)						
7	Carbohydrates (cellulose-based water filters, PHA and PLA as bioplastics)	L+D	LCD+BB	1	7	26/6/2023

8	Nucleic acids (DNA Vaccine for Rabies and RNA vaccines for Covid19)	L+D	LCD+BB	1	8	03/7/2023
9	Forensics – DNA fingerprinting, Proteins (Proteins as food – whey protein and meat analogs)	L+D	LCD+BB	1	9	06/7/2023
10	Plant based proteins, lipids (biodiesel, cleaning agents/detergents)	L+D	LCD+BB	1	10	10/7/2023
11	Enzymes (glucose-oxidase in biosensors)	L+D	LCD+BB	1	11	13/7/2023
12	Lignolytic enzyme in Enzyme in bio-bleaching	L+D	LCD+BB	1	12	17/7/2023
Module IV: NATURE-BIOINSPIRED MATERIALS AND MECHANISMS (QUALITATIVE)						
13	Echolocation (ultrasonography, sonars), Photosynthesis (photovoltaic cells, bionic leaf)	L+D	LCD+BB	1	13	20/7/2023
14	Bird flying (GPS and aircrafts), Lotus leaf effect (Super hydrophobic and self-cleaning surfaces)	L+D	LCD+BB	1	14	24/7/2023
15	Plant burrs (Velcro), Shark skin (Friction reducing swim suits)	L+D	LCD+BB	1	15	27/7/2023
16	Kingfisher beak (Bullet train). Human Blood substitutes - hemoglobin-based oxygen carriers (HBOCs) and perfluorocarbons (PFCs).	L+D	LCD+BB	1	16	03/8/2023
17	Human Blood substitutes - hemoglobin-based oxygen carriers (HBOCs)	L+D	LCD+BB	1	17	05/8/2023
18	Perfluorocarbons (PFCs)	L+D	LCD+BB	1	18	07/8/2023
Module II: HUMAN ORGAN SYSTEMS AND BIO-DESIGNS - 1 (QUALITATIVE)						
19	Brain as a CPU system (architecture, CNS and Peripheral Nervous System, signal transmission, EEG)	L+D	LCD+BB	1	19	10/8/2023
20	Robotic arms for prosthetics. Engineering solutions for Parkinson's disease)	L+D	LCD+BB	1	20	14/8/2023
21	Eye as a Camera system (architecture of rod and cone cells, optical corrections, cataract, lens materials, bionic eye)	L+D	LCD+BB	1	21	17/8/2023
22	Heart as a pump system (architecture, electrical signaling -	L+D	LCD+BB	1	22	19/8/2023

	ECG monitoring)					
23	Heart related issues, reasons for blockages of blood vessels, Design of stents, pace makers, defibrillators	L+D	LCD+BB	1	23	21/8/2023
Module V: TRENDS IN BIOENGINEERING (QUALITATIVE)						
24	Bioprinting techniques and materials, 3D printing of ear, bone and skin	L+D	LCD+BB	1	24	24/8/2023
25	3D printed foods Electrical tongue and electrical nose in food science, DNA origami and Biocomputing,	L+D	LCD+BB	1	25	28/8/2023
26	Bioimaging and Artificial Intelligence for disease diagnosis, Self-healing Bioconcrete (based on bacillus spores, calcium lactate nutrients and bio mineralization processes)	L+D	LCD+BB	1	26	31/8/2023
27	Bioremediation and Biomining via microbial surface adsorption (removal of heavy metals like Lead,)	L+D	LCD+BB	1	27	04/9/2023
28	Biomining via microbial surface adsorption (removal of heavy metals like Cadmium, Mercury, Arsenic)	L+D	LCD+BB	1	28	14/9/2023

Text Books:

1. Human Physiology, Stuart Fox, Krista Rompolski, McGraw-Hill eBook. 16th Edition, 2022
2. Biology for Engineers, Thyagarajan S., Selvamurugan N., Rajesh M.P., Nazeer R.A., Thilagaraj W., Barathi S., and Jaganthan M.K., Tata McGraw-Hill, New Delhi, 2012.
3. Biology for Engineers, Arthur T. Johnson, CRC Press, Taylor and Francis, 2011
4. Biomedical Instrumentation, Leslie Cromwell, Prentice Hall 2011.
5. Biology for Engineers, Sohini Singh and Tanu Allen, Vayu Education of India, New Delhi, 2014.
6. Biomimetics: Nature-Based Innovation, Yoseph Bar-Cohen, 1st edition, 2012, CRC Press.
7. Bio-Inspired Artificial Intelligence: Theories, Methods and Technologies, D. Floreano and C. Mattiussi, MIT Press, 2008.
8. Bioremediation of heavy metals: bacterial participation, by C R Sunilkumar, N Geetha A C Udayashankar Lambert Academic Publishing, 2019.

Reference Books:

1. 3D Bioprinting: Fundamentals, Principles and Applications by Ibrahim Ozbolat, Academic Press, 2016.

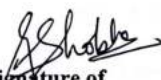
2. Electronic Noses and Tongues in Food Science, Maria Rodriguez Mende, Academic Press, 2016
3. Blood Substitutes, Robert Winslow, Elsevier, 2005

Details of the teaching aids:


1. BB – Black Board
2. PPT Power Point Presentation
3. LCD Liquid Crystal Display

Web links and Video Lectures (e-Resources):

1. VTU EDUSAT / SWAYAM / NPTEL / MOOCS / Coursera / MIT-open learning resource
2. <https://nptel.ac.in/courses/121106008>
3. <https://freevidelectures.com/course/4877/nptel-biology-engineers-other-non-biologists>
4. <https://ocw.mit.edu/courses/20-020-introduction-to-biological-engineering-design-spring-2009>
5. <https://ocw.mit.edu/courses/20-010j-introduction-to-bioengineering-be-010j-spring-2006>
6. <https://www.coursera.org/courses?query=biology>
7. https://onlinecourses.nptel.ac.in/noc19_ge31/preview
8. <https://www.classcentral.com/subject/biology>
9. <https://www.futurelearn.com/courses/biology-basic-concepts>


Signature of
Course In-Charge


Signature of
Module Coordinator


Signature of HOD
Head of the Department
Artificial Intelligence & Machine Learning
K.S. Institute of Technology
Bengaluru - 560 109


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BENGALURU - 560 109.





**K. S. INSTITUTE OF TECHNOLOGY,
BENGALURU - 560109**
**DEPARTMENT OF ARTIFICIAL INTELLIGENCE &
MACHINE LEARNING**
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : ANU MATHEWS
COURSE CODE/TITLE : Python Programming Laboratory
YEAR/ SEMESTER/SECTION : 3rd/A
ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Teaching Aid	Proposed Date
1	a) Write a python program to find the best of two test average marks out of three tests' marks accepted from the user. b) Develop a Python program to check whether a given number is palindrome or not and also count the number of occurrences of each digit in the input number.	Projector and Board	B1: 22/05/23 B2: 23/05/23 B3: 24/05/23
2	a) Define a function F as $F_n = F_{n-1} + F_{n-2}$. Write a Python program which accepts a value for N (where $N > 0$) as input and pass this value to the function. Display suitable error message if the condition for input value is not followed. b) Develop a python program to convert binary to decimal, octal to hexadecimal using functions.	Projector and Board	B1: 29/05/23 B2: 30/05/23 B3: 31/05/23
3	a) Write a Python program that accepts a sentence and find the number of words, digits uppercase letters and lowercase letters. b) Write a Python program to find the string similarity between two given strings	Projector and Board	B1: 05/06/23 B2: 06/06/23 B3: 07/06/23
4	a) Write a python program to implement insertion sort and merge sort using lists b) Write a program to convert roman numbers in to integer values using dictionaries.	Projector and Board	B1: 12/06/23 B2: 13/06/23 B3: 14/06/23

5	<p>a) Write a function called isphonenumber () to recognize a pattern 415-555-4242 without using regular expression and also write the code to recognize the same pattern using regular expression.</p> <p>b) Develop a python program that could search the text in a file for phone numbers (+919900889977) and email addresses (sample@gmail.com)</p>	Projector and Board	<p>B1: 19/07/23 B2: 20/07/23 B3: 21/07/23</p>
6	LAB TEST-1		<p>B1: 03/07/23 B2: 04/07/23 B3: 05/07/23</p>
7	<p>a) Write a python program to accept a file name from the user and perform the following operations</p> <ol style="list-style-type: none"> 1. Display the first N line of the file 2. Find the frequency of occurrence of the word accepted from the user in the file <p>b) Write a python program to create a ZIP file of a particular folder which contains several files inside it.</p>	Projector and Board	<p>B1: 10/07/23 B2: 11/07/23 B3: 12/07/23</p>
8	<p>a) By using the concept of inheritance write a python program to find the area of triangle, circle and rectangle.</p> <p>b) Write a python program by creating a class called Employee to store the details of Name, Employee_ID, Department and Salary, and implement a method to update salary of employees belonging to a given department.</p>	Projector and Board	<p>B1: 17/07/23 B2: 18/07/23 B3: 19/07/23</p>
9	Write a python program to find the whether the given input is palindrome or not (for both string and integer) using the concept of polymorphism and inheritance	Projector and Board	<p>B1: 24/07/23 B2: 25/07/23 B3: 26/07/23</p>
10	<p>a) Write a python program to download all the XKCD comics</p> <p>b) Demonstrate python program to read the data from the spreadsheet and write the data in to the spreadsheet</p>	Projector and Board	<p>B1: 07/08/23 B2: 08/08/23 B3: 09/08/23</p>
11	<p>a) Write a python program to combine select pages from many PDFs</p> <p>b) Write a python program to fetch current weather data from the JSON file</p>	Projector and Board	<p>B1: 14/08/23 B2: 22/08/23 B3: 16/08/23</p>
12	LAB TEST-2		<p>B1: 11/09/23 B2: 12/09/23 B3: 13/09/23</p>


Signature of course Incharge


Signature of Module Coordinator


Signature of HOD


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K S INSTITUTE OF TECHNOLOGY, BANGALORE
DEPARTMENT OF APPLIED SCIENCES & HUMANITIES

LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : Anuradha M V
COURSE TYPE / CODE/TITLE : Theory/21CIP47/Constitution of India and Professional Ethics
YEAR/ SEMESTER : II/IV
BRANCH : AIML

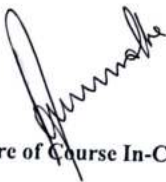
Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE1						
1	Introduction to Indian Constitution, Necessity of the Constitution, Societies before and after the Constitution adoption, Introduction to the Indian Constitution, Making of the Constitution, Role of the Constituent Assembly.	L+D	BB	1	1	22-5-2023
MODULE2						
2	Salient Features of the Indian Constitution, Preamble to the Indian Constitution and key concepts..	L+ D	BB	1	2	29-5-2023
3	Fundamental Rights	L+ D	BB	1	3	5-6-2023
4	Fundamental Rights(cont)	L+ D	BB	1	4	12-6-2023
5	Fundamental Rights(cont) and their restrictions	L+ D	BB	1	5	19-6-2023
MODULE3:						

6	I Internal Assessment	L+D	BB	1	6	28-6-2023
7	Directive Principles of State Policies				7	3-7-2023
8	Union Executive , Parliamentary System, President Prime Minister, Union Cabinet	L+D	BB	1	8	10-7-2023
MODULE4						
9	State Executive	L+D	BB	1	9	17-7-2023
10	Emergency Provisions	L+D,	BB	1	10	24-7-2023
11	II Internal Assessment				12	2-8-2023
12	Elections and their procedure Parliament- LS and RS Judiciary	L+D	BB	1	11	14-8-2023
13	Judicial activism , their meaning and relevance	L+D	BB	1	13	19-8-2023
MODULE5						
14	. State Executive and Governor- VP	L+D,	BB	1	14	21-8-2023
15	Professional Ethics and their relevance	L+D,	BB	1	15	28-8-2023
16	Professional Ethics (cont)Amendment Procedure and important amendments till date Discussion on Model QP	L+D,	BB	1	16	4-9-2023
17	III Internal Assessment					6-9-2023

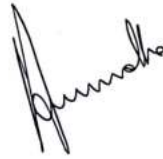
Text Books:

1. **“Constitution of India(for competitive exams)”** Published by NaidhravaEdutech Learning Solutions, Bengaluru-2022
2. **Introduction to the Constitution of India (Students edition)**, by Durga Das (DD Basu) Prentice Hall 2008.

Reference Books:
<p>“ Constitution of India, Professional Ethics and Human Rights” by shubham Singles, Charles E Haries and et al: published by cengage learning, Latest Edition 2019.</p> <p>2. “The Constitution of India” by Merunandan K B :Pub;lished by Meragu Publication Second Edition, Bengaluru.</p> <p>3. “SamvidhanOdu”-for students and Youths by Justice H N Nagamohan Das, SahayanaKerekon</p> <p>4. M Govindarajan, S. Natarajan, V S Senthilkumar, “Engineering Ethics”, Prentice Hall, 2004</p>
Useful websites:
Useful Journals:
<p>Teaching and Learning Methods:</p> <ol style="list-style-type: none"> 1. Lecture class 2. Self-study 3. Field visits/Group Discussions/Seminars
<p>Type of test/examination (For 2022 scheme)</p> <p>Continuous Internal Evaluation(CIE) :50 marks</p> <p>Semester End Exam(SEE) :</p>



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Signature of Module Coordinator



Signature of HOD
Head of the Department
Dept. of Science and Humanities
K.S. Institute of Technology
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K S INSTITUTE OF TECHNOLOGY BENGALURU

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING



LESSON PLAN

NAME OF THE STAFF: **Prof. Lakshmi K K & Prof. Nagabushan P**


SUBJECT CODE/NAME: **21CSL481/WEB PROGRAMMING**

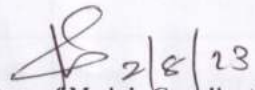
SEMESTER/YEAR: **IV/II**

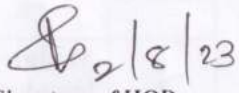
ACADEMIC YEAR : **2022-2023**


Sl. No.	Topic to be covered	Teaching Aid	Proposed Date		
			B1	B2	B3
1	Module-1 Introduction to WEB Programming: Internet,	Projector and Board	23/5/23	17/5/23	22/5/23
2	WWW, Web Browsers, and Web Servers, URLs,	Projector and Board	27/5/23	24/5/23	29/5/23
3	MIME, HTTP, Security, The Web Programmers Toolbox.	Projector and Board	30/5/23	31/5/23	5/6/23
4	Module-2 HTML and XHTML: Origins of HTML and XHTML, Basic syntax, Standard XHTML document structure,	Projector and Board	6/6/23	7/6/23	12/6/23
5	Basic text markup, Images, Hypertext Links, Lists, Tables.	Projector and Board	13/6/23	10/6/23	26/6/23
6	Forms, Frames in HTML and XHTML,	Projector and Board	24/6/23	14/6/23	26/6/23
7	Syntactic differences between HTML and XHTML.	Projector and Board	27/6/23	28/6/23	26/6/23
	LAB TEST 1		4/7/23	5/7/23	3/7/23
8	Module-3 CSS: Introduction, Levels of style sheets, Style specification formats, Selector forms, Property value forms,	Projector and Board	11/7/23	8/7/23	17/7/23
9	Font properties, List properties, Color, Alignment of text, Background images, tags.	Projector and Board	11/7/23	8/7/23	24/7/23

10	Module-4 Java Script – I: Object orientation and JavaScript; General syntactic characteristics; Primitives.	Projector and Board	18/7/23	12/7/23	5/8/23
11	Operations, and expressions;	Projector and Board	22/7/23	19/7/23	7/8/23
12	Screen output and keyboard input.	Projector and Board	25/7/23	26/7/23	14/8/23
13	Module-5 Control statements, Object creation and Modification; Arrays; Functions; Constructor.	Projector and Board	8/8/23	9/8/23	19/8/23
14	Pattern matching using expressions; Errors, Element access in JavaScript.	Projector and Board	22/8/23	16/8/23	21/8/23
15	Revision		29/8/23	23/8/23	28/8/23
16	Revision		5/9/23	30/8/23	4/9/23
17	LAB TEST 2		12/9/23	13/9/23	11/9/23


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DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : ROOPA K MURTHY
COURSE TYPE / CODE / TITLE : CORE / 21UHV49 / UNIVERSAL HUMAN VALUES-II:
UNDERSTANDING HARMONY AND ETHICAL HUMAN CONDUCT
YEAR/ SEMESTER/SECTION : II / IVTH / A
BRANCH : Artificial Intelligence & Machine Learning

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1						
1	Introduction to Value Education CHAPTER 1: Understanding Value Education	L+I	PPT	2	2	22/05/2023
2	CHAPTER 2: Self Exploration as the Process for Value Education	L+I	PPT	1	3	31/05/2023
3	CHAPTER 3: Basic Human Aspirations and their Fulfillment	L+I	PPT	1	4	07/06/2023
4	CHAPTER 3: Basic Human Aspirations and their Fulfillment CHAPTER 4: Understanding Happiness and Prosperity	L+I	PPT	2	6	10/06/2023
5	CHAPTER 4: Understanding Happiness and Prosperity	L+I	PPT	1	7	21/06/2023

Module II						
7	Understanding the Harmony at Various Levels CHAPTER 5: Understanding the Human Being as Co-existence of the Self and the Body	L+I	PPT	1	8	22/06/2023
8	CHAPTER 5: Understanding the Human Being as Co-existence of the Self and the Body	L+I	PPT	1	9	23/06/2023
IA-1(28/06/2023)						
Module II						
9	CHAPTER 6: Harmony in the Self - Understanding Myself	L+I	PPT	1	11	05/07/2023
10	CHAPTER 6: Harmony in Self – Understanding Myself CHAPTER 7: Harmony of the Self with the Body – Understanding Self-regulation and Health	L+I	PPT	2	13	08/07/2023
11	Module IV CHAPTER 10: Harmony in Nature - Understanding the Interconnectedness, Self-regulation and Mutual Fulfillment	L+I	PPT	1	14	12/07/2023
12	CHAPTER 10: Harmony in Nature - Understanding the Interconnectedness, Self-regulation and Mutual Fulfillment Module III CHAPTER 8: Harmony in the Family- Understanding the Values in Human-Human Relationships	L+I	PPT	1	15	19/07/2023
Module III						
13	CHAPTER 8: Harmony in the Family Understanding the Values in Human-Human Relationships CHAPTER 9: Harmony in Society- Understanding Universal Human Order	L+I	PPT	1	16	26/07/2023
IA-2(02/08/2023)						

Module V						
14	Implications of the Right Understanding CHAPTER 12: The Basis for Universal Human Values and Ethical Human Conduct	L+I	PPT	1	18	09/08/2023
15	CHAPTER 13: Professional Ethics in the light of Right Understanding CHAPTER 14: Holistic Development towards Universal Human Order	L+I	PPT	1	19	23/08/2023
16	CHAPTER 15: Vision for Holistic Technologies, Production CHAPTER 16: Journey towards Universal Human Order- The Road Ahead	L+I	PPT	1	20	30/08/2023
Module IV						
	CHAPTER 11: Harmony in Existence – Understanding Co-existence at Various Levels	L+I	PPT			
IA- 3(08/09/2023)						

Text Books:

1. The Textbook A Foundation Course in Human Values and Professional Ethics, R R Gaur, R Asthana, G P Bagaria, 2nd Revised Edition, Excel Books, New Delhi, 2019. ISBN 978-93-87034- 47-1
2. The Teacher's Manual SAMPLE TEMPLATE 4 Teachers' Manual for A Foundation Course in Human Values and Professional Ethics, R R Gaur, R Asthana, G

Reference Books:

1. Jeevan Vidya: Ek Parichaya, A Nagaraj, Jeevan Vidya Prakashan, Amarkantak, 1999.
2. Human Values, A.N. Tripathi, New Age Intl. Publishers, New Delhi, 2004.
3. The Story of Stuff (Book).
4. The Story of My Experiments with Truth - by Mohandas Karamchand Gandhi
5. Small is Beautiful - E. F Schumacher.

6. Slow is Beautiful - Cecile Andrews
7. Economy of Permanence - J C Kumarappa
8. Bharat Mein Angreji Raj – Pandit Sunderlal
9. Rediscovering India - by Dharampal
10. Hind Swaraj or Indian Home Rule - by Mohandas K. Gandhi
11. India Wins Freedom - Maulana Abdul Kalam Azad
12. Vivekananda - Romain Rolland (English)
13. Gandhi - Romain Rolland (English)
14. Sussan George, 1976, How the Other Half Dies, Penguin Press. Reprinted 1986, 1991
15. Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, Limits to Growth – Club of Rome’s report, Universe Books.
16. A Nagraj, 1998, Jeevan Vidya Ek Parichay, Divya Path Sansthan, Amarkantak.
17. P L Dhar, RR Gaur, 1990, Science and Humanism, Commonwealth Publishers.
18. A N Tripathy, 2003, Human Values, New Age International Publishers.
19. SubhasPalekar, 2000, How to practice Natural Farming, Pracheen (Vaidik) KrishiTantraShodh, Amravati.
20. E G Seebauer & Robert L. Berry, 2000, Fundamentals of Ethics for Scientists & Engineers , Oxford University Press
21. M Govindrajran, S Natrajan & V.S. Senthil Kumar, Engineering Ethics (including Human Values), Eastern Economy Edition, Prentice Hall of India Ltd.
22. B P Banerjee, 2005, Foundations of Ethics and Management, Excel Books.
23. B L Bajpai, 2004, Indian Ethos and Modern Management, New Royal Book Co., Lucknow. Reprinted 2008.

Web links and Video Lectures (e-Resources):

1. Value Education websites, <https://www.uhv.org.in/uhv-ii>, <http://uhv.ac.in>, <http://www.uptu.ac.in>
2. Story of Stuff, <http://www.storyofstuff.com>

3. Al Gore, An Inconvenient Truth, Paramount Classics, USA
4. Charlie Chaplin, Modern Times, United Artists, USA
5. IIT Delhi, Modern Technology – the Untold Story
6. Gandhi A., Right Here Right Now, Cyclewala Productions
7. https://www.youtube.com/channel/UCQxWr5QB_eZUnwxSwxXEkQw
8. https://fdp-si.aicte-india.org/8dayUHV_download.php
9. <https://www.youtube.com/watch?v=8ovkLRYXlJE>
10. <https://www.youtube.com/watch?v=OgdNx0X923I>
11. <https://www.youtube.com/watch?v=nGRcbRpvGoU>
12. <https://www.youtube.com/watch?v=sDxGXOgYEKM>

Details of the teaching aids:

- BB – Black Board
- PPT- Power Point Presentation
- LCD – Liquid Crystal Display


**Signature of
Course In-Charge**


**Signature of
Module Co-ordinator**


Signature of HOD
Head of the Department
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Bengaluru - 560 109


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BENGALURU - 560 109.

**KSIT****K S Institute of Technology****Department of Artificial Intelligence and Machine Learning****Semester : IV****Sub Name: Internship Seminar Topic List****Code: 21INT49**

Sl. No.	USN	Student Name	Topic	Date
1	1KS21AI001	ABHAY SURYA E	C++ overview, C++ Install IDE, OOP key features	7/4/2023
2	1KS21AI002	ADITHI R	Templates in c++ , Initialization of data members, Pointers in C++, void * in C vs C++	7/4/2023
3	1KS21AI003	ADITYA KALKUR	Operator overloading, Is assignment operator inherited? Default Assignment Operator and	7/4/2023
4	1KS21AI004	AMRUTHA M V	Exception handling and object destruction	7/4/2023
5	1KS21AI005	ANANYA B GOWDA	Inheritance and friendship, Simulating final class, 1. Name Mangling and extern "C" in C++, 2. What all is inherited from parent class in C++?	7/4/2023
6	1KS21AI006	ANANYA PRAMOD	Encapsulation ,. Data Abstraction	7/4/2023
7	1KS21AI007	ANUSHREE R	Catching base exceptions and derived classes as exceptions, allocate and deallocate memory in C++?	7/4/2023
8	1KS21AI008	APEKSHA I M	Abstraction in c++, Encapsulation in c++, Data hiding	7/4/2023
9	1KS21AI009	ARVIND N	C++ Iterators	7/4/2023
10	1KS21AI010	BHUVAN S GOWDA	Methods and messages First C++ Program - Basic C++ syntax	7/4/2023
11	1KS21AI011	CHAITRA S	Defining Member Function, Overloading Member Function, 1. Hiding of all overloaded methods in base class	7/11/2023
12	1KS21AI012	CHETHAN S	C++ Standard Exception, Throwing Exceptions, Catching Exceptions	7/11/2023
13	1KS21AI013	CHIRAG V S	C++ Functions, types, Call by values, Call by reference	7/11/2023
14	1KS21AI014	ESHWAR S	Nested Class, 1. Constructors and types of constructors	7/11/2023
15	1KS21AI015	G C SAMBRAM	C++ Output (Print Text) .Input print text, C++ Output (Print Text) .Input print text, classes and objects	7/11/2023
16	1KS21AI016	G VINAY KUMAR	Defining Member Function, Overloading Member Function, 1. Hiding of all overloaded methods in base class	7/11/2023
17	1KS21AI017	HARIKRISHNA G	Method over riding, 1. Operator Overloading 2. Copy constructor vs assignment operator 3. Operators that cannot be overloaded	7/11/2023

Sl. No.	USN	Student Name	Topic	Date
18	1KS21AI018	HARSHITHA A	The difference between C and C++,Classes for File stream operations	7/11/2023
19	1KS21AI019	HEMALATHA D R	C++ Data Types,Dynamic memory allocation,new and delete operator in C++	7/11/2023
20	1KS21AI020	JAYASHREE P R	C++ Standard Exception, Throwing Exceptions,Catching Exceptions	7/11/2023
21	1KS21AI021	K J ARUN	Facts about static member functions,Friend functions in c++ , examples	7/11/2023
22	1KS21AI022	KARTHIK CHAVAN	Operators in C++, <ul style="list-style-type: none"> • <u>Arithmetic operators</u> • <u>Assignment operators</u> • <u>Comparison operators</u> • <u>Logical operators</u> • Bitwise operators 	7/18/2023
23	1KS21AI023	KAVYA S	C+ +Control Statement with examples	7/18/2023
24	1KS21AI024	KEERTHANA R	C++ Preprocessors,Defining Mmember function,C++ Output (Print Text) .Input print text	7/18/2023
25	1KS21AI025	LIKITHA K	Exception handling and object destruction	7/18/2023
26	1KS21AI026	LOCHAN K	Inheritance (with examples) , Polymorphism (with examples)	7/18/2023
27	1KS21AI027	LOKARANJAN B S	Constructor overloading,1. Overloading stream insertion (<<) and extraction (>>) operators	7/18/2023
28	1KS21AI028	MODUPALLI MEGHANA	Critical Concepts of Object-Oriented Programming,1. Object oriented design Introduction to OOP in C++, Classes and Objects	7/18/2023
29	1KS21AI029	MRUDULA S R	Nested Class,Friend classes,Encapsulation in c++	7/18/2023
30	1KS21AI030	NABIHA SHARIFF	The difference between structure and class in C++?, iostream in C++,conio.h in C++	7/18/2023
31	1KS21AI031	NEERAJ P	Abstract classes in c++,Namespace in C++,	7/18/2023
32	1KS21AI032	NEHA K B	Virtual functions in c++,inline functions in c++,	7/18/2023
33	1KS21AI033	NILANJANA JAMINDAR	1. Destructors ,2. When is copy constructor called? ,3. Use of explicit keyword ,Default Constructors, Facts about static member functions,Friend functions in c++	7/25/2023

Sl. No.	USN	Student Name	Topic	Date
34	1KS21AI034	NITHIN HAREESH GOWDA S H	Hierarchical Inheritance,Hybrid Inheritance,Advantages of Inheritance,Disadvantages of Inheritance	7/25/2023
35	1KS21AI035	NITHISH GOWDA K J	Virtual base class in C++,abstract methods and abstract classes	7/25/2023
36	1KS21AI036	NITHYA R	Object Oriented Programming: What is an object and its complete implementation , Facts about static member functions,Friend functions in c++	7/25/2023
37	1KS21AI037	P LALIT SHEKHAR	Methods and messages First C++ Program - Basic C++ syntax	7/25/2023
38	1KS21AI038	PRAJWAL D	C++ default constructor , Virtual Constructor ,Advanced C++ , Virtual Copy Constructor	7/25/2023
39	1KS21AI039	PUNYA SHREE T S	1. Exception Handling Basics, 2. Stack Unwinding ,3. Catch block and type conversion	7/25/2023
40	1KS21AI040	RACHANA P R	Difference between reference and pointer?,	7/25/2023
41	1KS21AI041	RAKSHITA S	When do we use Initializer List in?Disadvantages of Conventional Programming,Destructors in C++	7/25/2023
42	1KS21AI042	SAHANA S	Local Class ,Nested Classes,VECTORS IN C++	7/25/2023
43	1KS21AI043	SAI NEHA D P	Data hiding in C++?,Facts about static member functions,Friend functions in c++	7/25/2023
44	1KS21AI044	SAMANA M B	Vector in C++, References in C++,Virtual Functions Runtime Polymorphism in C++. Object Slicing in C++	8/4/2023
45	1KS21AI045	SANJANA O R	Defining Member Function, Overloading Member Function,1. Hiding of all overloaded methods in base class	8/4/2023
46	1KS21AI046	SHAMA S K	Inline functions in c++,Features of Pointers, Pointer Declaration	8/4/2023
47	1KS21AI048	SHIVANI UPPIN	Nested Namespaces ,Inline functions -Default arguments	8/4/2023
48	1KS21AI049	SUDEEP RANJAN	Private Destructor, Playing with Destructors ,Constructor types in c++	8/4/2023
49	1KS21AI050	SUHAS R	First C++ Program -Basic C++ syntax Pointer to Class, Pointer Object,Streams in C++	8/4/2023
50	1KS21AI051	SURABHI T G	Pointer to Class, Pointer Object,Streams in C++	8/4/2023
51	1KS21AI052	TANUSHREE S	What is stl in C++?,C++ Standard Exception.	8/4/2023

Sl. No.	USN	Student Name	Topic	Date
52	IKS21AI053	THRYAKSHARI S	Tokens – variables ,Keywords – Identifiers and constants in c++	8/4/2023
53	IKS21AI054	VARNIKA V N	Derived class Constructors,Overloading array index operator [Operator overloading in c++ with syntax and exmample,	8/4/2023
54	IKS21AI055	VENKATESH T	Function prototyping – Call by reference ,. Structure vs class Static data members in C++	8/4/2023
55	IKS21AI056	VINITH P	Classes for File stream operations,	8/8/2023
56	IKS21AI057	ZUHA SUHAIL	Classes in complete detail, Tokens – variables ,Keywords – Identifiers and constants in c++	8/8/2023
57	IKS21AI058	CHIRAG S	Types of Inheritance- Defining Derived classes, Single Inheritance, Multiple inheritance in c++	8/8/2023
58	IKS20AI024	MOHAMMED ZEESHAN	Access Specifiers and their Scope	8/8/2023
59	IKS20AI029	PAVAN.A	Access Modifiers ,polymorphism ,compile time polymorphism,Run-time polymorphism	8/8/2023
60	IKS20AI040	SYED AASIM HUBAIRA	Derived class Constructors,Overloading array index operator [Operator overloading in c++ with syntax and exmample,	8/8/2023
61	IKS22AI400	AVINASH P	Templates in c++,Friend functions in c++,	8/8/2023
62	IKS22AI402	K JHAHNA VI	Local Class 'Nested Classes,I. When are static objects destroyed? Is it possible to call the constructor	8/8/2023
63	IKS22AI403	RISHI S	Abstract classes in c++	8/8/2023
64	IKS22AI404	SAHU DURGAMADHAB SARATKUMAR	Function overloading,operator overloading	8/8/2023
65	IKS22AI405	SANJAY K U	Inheritance in c++ with single inheritance, Multiple inheritance in c++, Hierarchical Inheritance,	8/8/2023
66	IKS22AI401	CHETAN N	Object Oriented Programming: What is an object and its complete implementation , Facts about static member functions, Friend functions in c++	8/8/2023
67	IKS22AI406	ULLAS B	Classes in complete detail,objects,and static keyword in c++,	8/8/2023

Seminar co-ordinators:

1) Sahana Sharma M

2) Anu Mathews

Shree

May

HOD

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K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : ANU MATHEWS
COURSE CODE/TITLE : 18AI61/MACHINE LEARNING
YEAR/ SEMESTER/SECTION : 3/6/A
BRANCH : AIML

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1						
1	Introduction: Machine learning Landscape: what is ML? Why?	L+I	LCD	1	1	20/03/2023
2	Types of ML, main challenges of ML	L+I	LCD	1	2	21/03/2023
3	Concept learning and Learning Problems Designing Learning systems	L+I	LCD	1	3	23/03/2023
4	Designing Learning systems	L+I	LCD	1	4	24/03/2023
5	Perspectives and Issues	L+I	LCD	1	5	27/03/2023
6	Find S	L+I	LCD	1	6	28/03/2023
7	Version Spaces	L+I	LCD	1	7	29/03/2023
8	Candidate Elimination Algorithm	L+I	LCD	1	8	30/03/2023
9	Candidate Elimination Algorithm	L+I	LCD	1	9	31/03/2023
10	Inductive Bias	L+I	LCD	1	10	01/04/2023

Module 2						
11	End to end Machine learning Project: Working with real data, Look at the big picture	L+I	LCD	1	11	04/04/2023
12	Get the data, Discover and visualize the data,	L+I	LCD	1	12	05/04/2023
13	Prepare the data	L+I	LCD	1	13	06/04/2023
14	select and train the model	L+I	LCD	1	14	10/04/2023
15	Fine tune your model	L+I	LCD	1	15	11/04/2023
16	Classification: MNIST, training a Binary classifier	L+I	LCD	1	16	12/04/2023
17	Performance measure	L+I	LCD	1	17	13/04/2023
18	Multiclass classification	L+I	LCD	1	18	15/04/2023
19	Error analysis,	L+I	LCD	1	19	20/04/2023
20	Multi label classification	L+I	LCD	1	20	21/04/2023
21	Multi output classification	L+I	LCD	1	21	24/04/2023
Module 3						
22	Training Models: Linear regression	L+I	LCD	1	22	25/04/2023
23	Gradient descent	L+I	LCD	1	23	26/04/2023
24	Polynomial regression	L+I	LCD	1	24	27/04/2023
25	Learning curves	L+I	LCD	1	25	28/04/2023
26	Regularized linear models	L+I	LCD	1	26	29/04/2023
27	Logistic regression	L+I	LCD	1	27	02/05/2023
28	Support Vector Machine: linear	L+I	LCD	1	28	03/05/2023
29	Nonlinear	L+I	LCD	1	29	04/05/2023
30	SVM regression	L+I	LCD	1	30	05/05/2023
31	SVM regression	L+I	LCD	1	31	22/05/2023

Module 4						
32	Decision Trees: Training and Visualizing DT	L+I	LCD	1	32	23/05/2023
33	Making prediction, Estimating class	L+I	LCD	1	33	24/05/2023
34	The CART training, computational complexity	L+I	LCD	1	34	29/05/2023
35	GINI impurity, Entropy, regularization Hyper parameters,	L+I	LCD	1	35	30/05/2023
36	Regression, instability	L+I	LCD	1	36	31/05/2023
37	Ensemble learning and Random Forest: Voting classifiers	L+I	LCD	1	37	01/06/2023
38	Bagging and pasting	L+I	LCD	1	38	02/06/2023
39	Random patches, Random forests	L+I	LCD	1	39	08/06/2023
40	Boosting	L+I	LCD	1	40	09/06/2023
41	Stacking	L+I	LCD	1	41	10/06/2023
Module 5						
42	Bayes Theorem – Concept Learning	L+I	LCD	1	42	12/06/2023
43	Maximum Likelihood	L+I	LCD	1	43	13/06/2023
44	Minimum Description Length Principle	L+I	LCD	1	44	14/06/2023
45	Bayes Optimal Classifier – Gibbs Algorithm	L+I	LCD	1	45	15/06/2023
46	Naïve Bayes Classifier	L+I	LCD	1	46	16/06/2023
47	Naïve Bayes Classifier– examples	L+I	LCD	1	47	19/06/2023
48	Bayesian Belief Network	L+I	LCD	1	48	20/06/2023
49	Bayesian Belief Network- examples	L+I	LCD	1	49	21/06/2023
50	EM Algorithm	L+I	LCD	1	50	22/06/2023
51	EM Algorithm-K Means derivation	L+I	LCD	1	51	23/06/2023

52	Revision	L+I	LCD	1	52	24/06/2023
53	Revision	L+I	LCD	1	53	26/06/2023
54	Revision	L+I	LCD	1	54	30/06/2023
55	Revision	L+I	LCD	1	55	06/07/2023
56	Revision	L+I	LCD	1	56	07/07/2023
57	Revision	L+I	LCD	1	57	08/07/2023
58	Revision	L+I	LCD	1	58	10/07/2023

Text Books:

1. Tom M. Mitchell, Machine Learning, McGraw-Hill Education, 2013
2. Aurelien Geron, Hands-on Machine Learning with Scikit-Learn & TensorFlow, O'Reilly, Shroff Publishers and Distributors Pvt. Ltd 2019

Reference Books:

1. Ethem Alpaydin, Introduction to Machine Learning, PHI Learning Pvt. Ltd, 2nd Ed., 2013
2. T. Hastie, R. Tibshirani, J. H. Friedman, The Elements of Statistical Learning, Springer, 1st edition, 2001
3. Machine Learning using Python, Manaranjan Pradhan, U Dinesh Kumar, Wiley, 2019
4. Machine Learning, Saikat Dutt, Subramanian Chandramouli, Amit Kumar Das, Pearson, 2020

Details of the teaching aids:

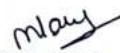
- Power Point Presentations



Course Incharge



Module coordinator



HOD AIML

Head of the Department

Artificial Intelligence & Machine Learning

K.S. Institute of Technology

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K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING
LESSON PLAN 2022-22 EVEN SEMESTER

COURSE INCHARGE : DR. AMULYASHREE S
COURSE CODE/TITLE : 18AI62 / DIGITAL IMAGE PROCESSING
YEAR/ SEMESTER/SECTION : III/VI/A
BRANCH : ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1						
1	Introduction, What is Digital Image Processing?	L+D	LCD&BB	1	1	20-03-2023
2	Origins of Digital Image Processing	L+D	LCD	1	2	20-03-2023
3	Examples of fields that use DIP	L+D	LCD	1	3	21-03-2023
4	Fundamental Steps in Digital Image Processing	L+D	LCD	1	4	23-03-2023
5	Components of an Image Processing System	L+D	LCD	1	5	27-03-2023
6	Elements of Visual Perception	L+D	LCD	1	6	27-03-2023
7	Image Sensing and Acquisition	L+D	LCD	1	7	28-03-2023
8	Image Sampling and Quantization	L+D	LCD	1	8	29-03-2023

9	Some Basic Relationships between Pixels	L+D	LCD	1	9	30-03-2023
10	Linear and Nonlinear Operations.	L+D	LCD	1	10	1-04-2023
11	Revision	L+D	LCD	1	11	1-04-2023
Module 2						
12	Spatial domain: Some Basic Intensity Transformation Functions,	L+D	LCD	2	14	4-04-2023 5-04-2023
13	Histogram Processing	L+D	LCD	2	16	5-04-2023 6-04-2023
14	Fundamentals of Spatial Filtering- Smoothing Spatial Filters	L+D	LCD	2	18	10-04-2023 11-04-2023
15	Fundamentals of Spatial Filtering- Sharpening Spatial Filters	L+D	LCD	2	20	12-04-2023 13-04-2023
16	Frequency Domain: Preliminary Concepts	L+D	LCD	1	21	15-04-2023
17	Revision	L+D	LCD	1	22	15-04-2023
18	Internal Assessment Test 1 (17/04/2023)					
19	The Discrete Fourier Transform (DFT) of Two Variables	L+D	LCD	2	24	20-04-2023 24-04-2023
20	Properties of the 2-D DFT	L+D	LCD	2	25	25-04-2023 26-04-2023
21	Filtering in the Frequency Domain	L+D	LCD	2	27	27-04-2023 2-05-2023
22	Image Smoothing	L+D	LCD	2	29	3-05-2023 4-05-2023
23	Image Sharpening Using Frequency Domain Filters	L+D	LCD	2	31	6-05-2023 8-05-2023
24	Selective Filtering	L+D	LCD	1	32	8-05-2023
25	Revision	L+D	LCD	1	35	9-05-2023
Pedagogy Written Assignment: On topics from Module 1 and Module 2						
Module 3						
26	Restoration: Noise Models,	L+D	LCD	2	37	10-05-2023 11-05-2023

27	Restoration only in presence of noise-only using spatial filtering	L+D	LCD	2	39	15-05-2023 15-05-2023
28	Restoration only in presence of noise-using frequency domain filtering	L+D	LCD	2	41	16-05-2023 17-05-2023
29	Linear, Position-Invariant Degradations	L+D	LCD	2	43	18-05-2023 22-05-2023
30	Estimating the Degradation Function	L+D	LCD	1	44	23-05-2023
31	Inverse Filtering	L+D	LCD	1	45	24-05-2023
32	Minimum Mean Square Error (Wiener) Filtering	L+D	LCD	1	46	25-05-2023
33	Constrained Least Squares Filtering	L+D	LCD	1	47	27-05-2023
34	Revision	L+D	LCD	1	48	29-05-2023
Module 4						
35	Color Fundamentals	L+D	LCD	2	50	29-05-2023 30-05-2023
36	Color Models	L+D	LCD	2	52	1-06-2023 2-06-2023
37	Internal Assessment Test 2 (05-06-2023)					
	Pedagogy Written Assignment: On topics from Module 2 , Module 3 and Module 4					
38	Pseudo-color Image Processing.	L+D	LCD	1	53	8-06-2023
39	Wavelets: Background	L+D	LCD	1	54	10-06-2023
40	Multiresolution Expansions.	L+D	LCD	2	56	12-06-2023 12-06-2023
41	Morphological Image Processing: Preliminaries, Erosion and Dilation	L+D	LCD	2	58	13-06-2023 14-06-2023
42	Opening and Closing. The Hit-or-Miss Transforms.	L+D	LCD	2	60	15-06-2023 19-06-2023

43	Some Basic Morphological Algorithms.	L+D	LCD	2	62	19-06-2023 20-06-2023
Module 5						
44	Segmentation: Introduction,	L+D	LCD	1	63	21-06-2023
45	Classification of image segmentation algorithms, Detection of Discontinuities,	L+D	LCD	2	66	22-06-2023 24-06-2023
46	Edge Detection, Hough Transforms and Shape Detection,	L+D	LCD	2	68	26-06-2023 26-06-2023
47	Corner Detection, and Principles of Thresholding.	L+D	LCD	2	70	27-06-2023 28-06-2023
48	Representation and Description: Representation,	L+D	LCD	1	71	30-06-2023
49	Boundary descriptors	L+D	LCD	2	73	3-07-2023 3-07-2023
50	Revision	L+D	LCD	1	74	4-07-2023
Pedagogy Written Assignment: On topics from Module 4 and Module 5						
51	Internal Assessment Test 3 (06-07-2023)					

Text Books:

1. Rafael C. Gonzalez and Richard E. Woods, Digital Image Processing, Third Ed., Prentice Hall, 2008.
2. S. Sridhar, Digital Image Processing. Oxford University Press, 2nd Edition. 2016.

Reference Books:

1. Digital Image Processing- S. Jayaraman, S. Esakkirajan, T.Veerakumar, TataMcGraw Hill 2014.
2. Fundamentals of Digital Image Processing-A. K. Jain, Pearson 2004.

Details of the teaching aids:


- Black Board
- Presentation Slides



Signature of Course In-Charge



Signature of Module Coordinator



Signature of HOD



Signature of Principal

Head of the Department
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DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : ABHILASH L BHAT
COURSE CODE/TITLE : 18AI63/JAVA FOR MOBILE APPLICATIONS
YEAR/ SEMESTER/SECTION : 3rd / 6th
BRANCH : ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 4						
1	Basics of Android Programng	L+D	LCD+BB	1	1	20/03/23
2	Getting Started with Android Programming	L+D	LCD+BB	1	2	20/03/23
3	What is Android? Features of Android	L+D	LCD+BB	1	3	23/03/23
4	Android Architecture	L+D	LCD+BB	1	4	24/03/23
5	Obtaining the required tools	L+D	LCD+BB	1	5	25/03/23
6	Launching your first android application	L+D	LCD+BB	1	6	25/03/23
7	Activities, Fragments and Intents	L+D	LCD+BB	1	7	27/03/23
8	Understanding activities	L+D	LCD+BB	1	8	29/03/23
9	Linking activities using intents	L+D	LCD+BB	1	9	30/03/23
10	Fragments	L+D	LCD+BB	1	10	31/03/23
11	Revision and Discussion				11	01/04/23
Module 5						

12	Views and ViewGroups	L+D	LCD+BB	1	12	01/04/23
13	FrameLayout	L+D	LCD+BB	1	13	05/04/23
14	LinearLayout, TableLayout	L+D	LCD+BB	1	14	06/04/23
15	RelativeLayout, ScrollView	L+D	LCD+BB	1	15	10/04/23
16	TextView view – Button, ImageButton	L+D	LCD+BB	1	16	10/04/23
17	EditText, Checkbox	L+D	LCD+BB	1	17	12/04/23
18	ToggleButton	L+D	LCD+BB	1	18	13/04/23
19	RadioButton and RadioGroupViews	L+D	LCD+BB	1	19	15/04/23
20	Creating the DBAdapter Helper class	L+D	LCD+BB	1	20	15/04/23
21	Internal Assessment Test-I	L+D	LCD+BB	1	21	18/04/23
22	Using the database Programmatically				22	20/04/23
Module 1						
23	Enumerations, Enumeration fundamentals	L+D	LCD+BB	1	23	21/04/23
24	The values () and valueOf() Methods, java enumerations are class types	L+D	LCD+BB	1	24	24/04/23
25	Enumerations Inherits Enum, example	L+D	LCD+BB	1	25	24/04/23
26	type wrappers, Autoboxing,	L+D	LCD+BB	1	26	26/04/23
27	Autoboxing and Methods	L+D	LCD+BB	1	27	27/04/23
28	Autoboxing/Unboxing occurs in Expressions, Autoboxing/Unboxing	L+D	LCD+BB	1	28	28/04/23
29	Boolean and character values, Autoboxing/Unboxing helps prevent errors, A word of Warning	L+D	LCD+BB	1	29	29/04/23
30	Annotations, Annotation basics	L+D	LCD+BB	1	30	03/05/23
31	specifying retention policy	L+D	LCD+BB	1	31	04/05/23
32	Obtaining Annotations at run time by use of reflection	L+D	LCD+BB	1	32	05/05/23
33	Annotated element Interface, Using Default values	L+D	LCD+BB	1	33	08/05/23

34	Marker Annotations	L+D	LCD+BB	1	34	08/05/23
35	Single Member annotations, Built-in annotations	L+D	LCD+BB	1	35	10/05/23
36	Revision and Discussion				36	11/05/23
Module 3						
37	The String Constructors, String Length, Special String Operations	L+D	LCD+BB	1	37	12/05/23
38	String Literals, String Concatenation, String Concatenation with Other Data Types	L+D	LCD+BB	1	38	13/05/23
39	String Conversion and toString() Character Extraction	L+D	LCD+BB	1	39	15/05/23
40	charAt(), getChars(), getBytes() toCharArray()	L+D	LCD+BB	1	40	15/05/23
41	String Comparison, equals() and equalsIgnoreCase()	L+D	LCD+BB	1	41	17/05/23
42	regionMatches() startsWith() and endsWith()	L+D	LCD+BB	1	42	18/05/23
43	equals() Versus == ,compareTo(), Searching Strings	L+D	LCD+BB	1	43	19/05/23
44	Modifying a String, substring(), concat()	L+D	LCD+BB	1	44	22/05/23
45	replace(), trim(), Data Conversion Using valueOf()	L+D	LCD+BB	1	45	22/05/23
46	Changing the Case of Characters Within a String	L+D	LCD+BB	1	46	24/05/23
47	Additional String Methods, StringBuffer, StringBuffer Constructors	L+D	LCD+BB	1	47	25/05/23
48	length() and capacity(), ensureCapacity()	L+D	LCD+BB	1	48	26/05/23
49	Internal Assessment Test II				49	30/05/23
50	setLength(), charAt() and setCharAt()	L+D	LCD+BB	1	50	01/06/23
51	getChars(),append(), insert(),	L+D	LCD+BB	1	51	02/06/23
52	reverse(), delete () and deleteCharAt()	L+D	LCD+BB	1	52	05/06/23
53	replace(), substring(),	L+D	LCD+BB	1	53	05/06/23
54	Additional StringBuffer Methods, StringBuilder	L+D	LCD+BB	1	54	07/06/23
Module 2						

55	Collections Overview, Recent Changes to Collections	L+D	LCD+BB	1	55	08/06/23
56	The Collection Interfaces	L+D	LCD+BB	1	56	09/06/23
57	The Collection Interfaces	L+D	LCD+BB	1	57	10/06/23
58	The Collection Classes	L+D	LCD+BB	1	58	12/06/23
59	The Collection Classes	L+D	LCD+BB	1	59	12/06/23
60	Accessing a collection Via an Iterator	L+D	LCD+BB	1	60	14/06/23
61	Storing User Defined Classes in Collections	L+D	LCD+BB	1	61	15/06/23
62	The Random Access Interface	L+D	LCD+BB	1	62	16/06/23
63	Working with Maps	L+D	LCD+BB	1	63	19/06/23
64	Working with Maps	L+D	LCD+BB	1	64	19/06/23
65	Comparators	L+D	LCD+BB	1	65	21/06/23
66	Comparators	L+D	LCD+BB	1	66	22/06/23
67	The Collection Algorithms	L+D	LCD+BB	1	67	23/06/23
68	The Collection Algorithms	L+D	LCD+BB	1	68	26/06/23
69	Why Generic Collections? The legacy Classes and Interfaces	L+D	LCD+BB	1	69	26/06/23
70	Parting Thoughts on Collections	L+D	LCD+BB	1	70	28/06/23
71	Revision and Discussion	L+D	LCD+BB	1	71	30/06/23
72	Internal Assessment Test III				72	04/07/23

Text Books:

1. Herbert Schildt: JAVA the Complete Reference, 7th/9th Edition, Tata McGraw Hill, 2007.
2. Jim Keogh: J2EE-TheCompleteReference, McGraw Hill, 2007
3. J. F. DiMarzio, Beginning Android Programming with Android Studio, 4thEdition, 2017

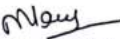
Reference Books:

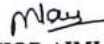
1. John Horton, Android Programming for Beginners, 1st Edition, 2015
2. Dawn Griffiths & David Griffiths, Head First Android Development, O'Reilly, 1st Edition, 2015

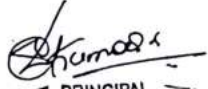
Details of the teaching aids:

- Black Board
- Power Point Presentation


Course Incharge


Module coordinator


HOD AIML
Head of the Department
Artificial Intelligence & Machine Learning
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Bengaluru - 560 102


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BENGALURU - 560 109.



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MECHINE LEARNING

LESSON PLAN 2022-23EVEN SEMESTER

COURSE INCHARGE : S SUBHASH KUMAR

COURSE TYPE / CODE/TITLE:18AI643/WEB PROGRAMMING

YEAR/ SEMESTER/SECTION: III/ VI/A

BRANCH: AIML

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1:						
1	Introduction to HTML	L+D+I	BB+PPT	1	1	20-03-23
2	What is HTML and Where did it come from? HTML Syntax	L+D+I	BB+PPT	1	2	21-03-23
3	Semantic Markup, Structure of HTML Documents	L+D+I	BB+PPT	1	3	23-03-23
4	Quick Tour of HTML Elements	L+D+I	BB+PPT	1	4	24-03-23
5	HTML5 Semantic Structure Elements	L+D+I	BB+PPT	1	5	27-03-23
6	Introduction to CSS, What is CSS, CSS Syntax	L+D+I	BB+PPT	1	6	28-03-23
7	Location of Styles, Selectors	L+D+I	BB+PPT	1	7	29-03-23
8	The Cascade: How Styles Interact	L+D+I	BB+PPT	1	8	30-03-23
9	The Box Model, CSS CSS Text Styling.	L+D+I	BB+PPT	2	10	31-03-23 01-04-23

MODULE 2:						
9	HTML Tables and Forms, Introducing Tables	L+D+I	BB+PPT	1	11	03-04-23
10	Styling Tables, Introducing Forms	L+D+I	BB+PPT	1	12	05-04-23
11	Form Control Elements,	L+D+I	BB+PPT	1	13	06-04-23
12	Table and Form Accessibility	L+D+I	BB+PPT	1	14	10-04-23
13	Microformats			1	15	11-04-23
14	Advanced CSS: Layout, Normal Flow, Positioning Elements	L+D+I	BB+PPT	1	16	15-04-23
15	Floating Elements	L+D+I	BB+PPT	1	17	20-04-23
16	Constructing Multicolumn Layouts,	L+D+I	BB+PPT	1	18	21-04-23
17	Approaches to CSS Layout, Responsive Design	L+D+I	BB+PPT	1	19	24-04-23
18	CSS Frameworks.	L+D+I	BB+PPT	1	20	25-04-22
MODULE 3:						
19	JavaScript: Client-Side Scripting, what is JavaScript and What can it do?	L+D+I	BB+PPT	1	21	27-04-23
20	JavaScript Design Principles, where does JavaScript Go?	L+D+I	BB+PPT	1	22	28-04-23
21	Syntax, JavaScript Objects	L+D+I	BB+PPT	1	23	29-04-23
22	The Document Object Model (DOM),	L+D+I	BB+PPT	1	24	02-05-23
23	JavaScript Events, Forms	L+D+I	BB+PPT	2	26	04-05-23
24	Introduction to Server-Side Development with PHP	L+D+I	BB+PPT	1	27	05-05-23
25	What is Server-Side Development, A Web Server's Responsibilities	L+D+I	BB+PPT	1	28	19-05-23
26	Quick Tour of PHP	L+D+I	BB+PPT	1	29	22-05-23
27	Program Control, Functions	L+D+I	BB+PPT	1	30	23-05-23
28	25-05-23					
MODULE 4:						
28	PHP Arrays and Superglobals	L+D+I	BB+PPT	1	31	26-05-23
29	Arrays, \$_GET and \$_POST Superglobal Arrays	L+D+I	BB+PPT	1	32	27-05-23
30	\$_SERVER Array, \$_FILES Array	L+D+I	BB+PPT	1	33	29-05-23
31	Reading/Writing Files, PHP Classes and Objects,	L+D+I	BB+PPT	1	34	30-05-23
32	Object-Oriented Overview, Classes and Objects in PHP	L+D+I	BB+PPT	1	35	01-06-23
33	Object Oriented Design	L+D+I	BB+PPT	1	36	02-06-23

IA -II from 05/06/23 to 07/06/23						
34	Error Handling and Validation	L+D+I	BB+PPT	1	37	08-06-23
35	What are Errors and Exceptions?	L+D+I	BB+PPT	1	38	09-06-23
36	PHP Error Reporting	L+D+I	BB+PPT	1	39	12-06-23
37	PHP Error and Exception Handling	L+D+I	BB+PPT	1	40	13-06-23
MODULE 5:						
39	Managing State, The Problem of State in Web Applications	L+D+I	BB+PPT	1	41	15-06-23
40	Passing Information via Query Strings,	L+D+I	BB+PPT	1	42	16-06-23
41	Passing Information via the URL Path, Cookies	L+D+I	BB+PPT	1	43	19-06-23
42	Serialization, Session State,	L+D+I	BB+PPT	1	44	20-06-23
43	HTML5 Web Storage, Caching	L+D+I	BB+PPT	1	45	22-06-23
44	Advanced JavaScript and jQuery, JavaScript Pseudo-Classes,	L+D+I	BB+PPT	1	46	23-06-23
45	jQuery Foundations, AJAX, Asynchronous File Transmission	L+D+I	BB+PPT	1	47	24-06-23
46	Animation, Backbone MVC Frameworks	L+D+I	BB+PPT	1	48	26-06-23
47	XML Processing and Web Services	L+D+I	BB+PPT	1	49	27-06-23
48	XML Processing, JSON,	L+D+I	BB+PPT	1	50	30-06-23
IA-III from 3-07-23 to 5-07-23						
49	Overview of Web Services.	L+D+I	BB+PPT	1	51	06-07-23

Text Books:

- 1.Randy Connolly, Ricardo Hoar. "Fundamentals of Web Development", 1stEdition, Pearson Education India. (ISBN:978-9332575271)
2. Robin Nixon, "Learning PHP, MySQL & JavaScript with jQuery, CSS and HTML5", 4thEdition, O'Reilly Publications, 2015. (ISBN:978-9352130153)

Details of the teaching aids:1.BB – Black Board

2. PPT Power Point Presentation


Course Incharge


Module coordinator


HOD


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K S INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : Mr. RAJESH G.L

COURSE TITLE/CODE : SUPPLY CHAIN MANAGEMENT/18ME653

YEAR/ SEMESTER/SECTION : III / VI / A

BRANCH : ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: INTRODUCTION TO SUPPLY CHAIN						
1	Introduction to Supply Chain	L+D,PS	LCD	1	1	20-03-2023
2	Supply Chain Fundamentals — Importance	L+D,PS	LCD	1	2	21-03-2023
3	Importance of Supply Chain	L+D,PS	LCD	1	3	23-03-2023
4	Evolution- Role in Economy	L+D,PS	LCD	1	4	24-03-2023
5	Decision Phases	L+D,PS	LCD	1	5	25-03-2023
6	Supplier Manufacturer-Customer chain.	L+D,PS	LCD	1	6	27-03-2023
7	Enablers/ Drivers of Supply Chain Performance.	L+D,PS	LCD	1	7	28-03-2023
8	Supply chain strategy	L+D,PS	LCD	1	8	30-03-2023
9	Supply Chain Performance Measures	L+D,PS	LCD	1	9	31-03-2023
10	Case Studies	L+D,PS	LCD	1	10	01-04-2023

MODULE 2: SOURCING AND OUTSOURCING

11	Strategic Sourcing Outsourcing	L+D,PS	LCD	1	11	04-04-2023
12	Make Vs buy	L+D,PS	LCD+BB	1	12	06-04-2023
13	Identifying core processes	L+D,PS	LCD	1	13	10-04-2023
14	Market Vs Hierarchy	L+D,PS	LCD	1	14	11-04-2023
15	Make Vs buy continuum	L+D,PS	LCD	1	15	13-04-2023
16	Sourcing strategy	L+D,PS	LCD	1	16	15-04-2023
17	Supplier Selection and Contract Negotiation	L+D,PS	LCD	1	17	20-04-2023
18	Creating a world class supply base	L+D,PS	LCD	1	18	21-04-2023
19	Supplier Development	L+D,PS	LCD	1	19	24-04-2023
20	World Wide Sourcing	L+D,PS	LCD	1	20	25-04-2023

MODULE 3: WAREHOUSE MANAGEMENT

21	Warehouse Management & Stores management	L+D,PS	LCD	1	21	27-04-2023
22	Store's systems and procedures	L+D,PS	LCD+BB	1	22	28-04-2023
23	Incoming materials control	L+D,PS	LCD	1	23	29-04-2023
24	stores accounting and stock verification	L+D,PS	LCD	1	24	02-05-2023
25	Obsolete, surplus and scrap-value analysis in material handling	L+D,PS	LCD	1	25	04-05-2023
26	Transportation and Traffic management	L+D,PS	LCD	1	26	05-05-2023
27	-operational efficiency-productivity-cost effectiveness-performance measurement.	L+D,PS	LCD	1	27	08-05-2023
28	Supply Chain Network Distribution Network Design – Role - Factors Influencing Options, Value Addition –	L+D,PS	LCD	1	28	09-05-2023
29	Stores systems and procedures	L+D,PS	LCD	1	29	11-05-2023

30	Distribution Strategies - Models for Facility Location and Capacity allocation	L+D,PS	LCD	1	30	12-05-2023
31	Distribution Center Location Models	L+D,PS	LCD	1	31	13-05-2023
MODULE 4: NETWORK OPTIMIZATION MODELS						
32	Supply Chain Network optimization models	L+D,PS	LCD	1	32	15-05-2023
33	Impact of uncertainty on Network Design	L+D,PS	LCD	1	33	16-05-2023
34	Network Design decisions using Decision trees	L+D,PS	LCD	1	34	18-05-2023
35	Planning Demand	L+D,PS	LCD	1	35	19-05-2023
36	Multiple item - multiple location inventory management.	L+D,PS	LCD	1	36	25-05-2023
37	Pricing Management	L+D,PS	LCD	1	37	26-05-2023
38	Revenue Management	L+D,PS	LCD	1	38	27-05-2023
39	Supply Chain restructuring	L+D,PS	LCD	1	39	01-06-2023
40	Supply Chain Mapping	L+D,PS	LCD	1	40	02-06-2023
41	Case Studies	L+D,PS	LCD	1	41	05-06-2023
MODULE 5: CURRENT TRENDS						
42	Current Trends: Supply Chain Integration	L+D,PS	LCD	1	42	06-06-2023
43	Building partnership and trust in Supply chain Value of Information	L+D,PS	LCD	1	43	08-06-2023
44	Bullwhip Effect	L+D,PS	LCD	1	44	09-06-2023
45	Effective forecasting - Coordinating the supply chain	L+D,PS	LCD	1	45	12-06-2023
46	Supply Chain process restructuring.	L+D,PS	LCD	1	46	13-06-2023
47	Postpone the point of differentiation –	L+D,PS	LCD	1	47	15-06-2023
48	IT in Supply Chain	L+D,PS	LCD	1	48	16-06-2023
49	Agile Supply Chains -Reverse Supply chain	L+D,PS	LCD	1	49	19-06-2023

50	Future of IT in supply chain- E Business in supply chain.	L+D,PS	LCD	1	50	20-06-2023
51	Revision	L+D,PS	BB	1	51	22-06-2023
52	Revision	L+D,PS	BB	1	52	22-06-2023
53	Revision	L+D,PS	BB	1	53	30-06-2023
54	Revision	L+D,PS	BB	1	54	06-07-2023
55	Revision	L+D,PS	BB	1	55	10-07-2023

Text Books (Title of the Book/Name of the author/Name of the publisher/Edltion and Year)

- Supply Chain Management– Text and Cases Janat Shah Pearson Education 2009
- Supply Chain ManagementStrategy Planning and Operation Sunil Chopra and Peter Meindl PHI Learning / Pearson Education 2007

Reference Books:

- Business Logistics and Supply Chain Management Ballou Ronald H Pearson Education 5th Edition, 2007
- Designing and Managing the Supply Chain: Concepts, Strategies, and Cases David Simchi-Levi, Philip Kaminsky, Edith Simchi-Levi Tata McGraw-Hill 2005
- Supply Chain ManagementConcept and Cases Altekar Rahul V PHI 2005
- Modeling the Supply Chain Shapiro Jeremy F Thomson Learning Second Reprint , 2002 5 Principles of Supply Chain Management- A Balanced Approach Joel D. Wisner, G. Keong Leong, KeahChoon Tan South-Western, Cengage Learning 2008

Web Materials:

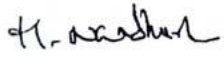
- ✓ <https://www.azdocuments.in/2021/05/supply-chain-management-18me653.html>

Details of the teaching aids:

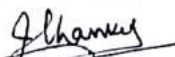
1. BLACK BOARD USAGE
2. PPT & Video presentation



Signature of Course In-Charge

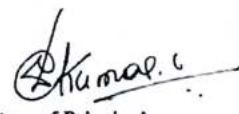


Signature of Module Coordinator



Signature of HOD

Head of the Department
Dept. of Mechanical Engg
K.S Institute of Technology,
Bengaluru - 560 109



Signature of Principal

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BENGALURU - 560 109.



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : ANU MATHEWS

COURSE CODE/TITLE : Machine Learning Laboratory

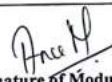
YEAR/ SEMESTER/SECTION : 3/6/A

ACADEMIC YEAR : 2022-2023

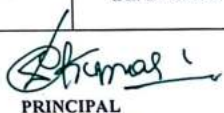
Sl. No.	Topic to be covered	Teaching Aid	Proposed Date
1	Implement and demonstrate the FIND-S algorithm for finding the most specific hypothesis based on a given set of training data samples. Read the training data from a .CSV file and show the output for test cases. Develop an interactive program by comparing the result by implementing LIST THEN ELIMINATE algorithm.	Projector and Board	B1: 29/03/23 B2: 21/03/23
2	For a given set of training data examples stored in a .CSV file, implement and demonstrate the Candidate-Elimination algorithm. Output a description of the set of all hypotheses consistent with the training examples	Projector and Board	B1: 05/04/23 B2: 28/03/23
3	Demonstrate Pre-processing (Data Cleaning, Integration and Transformation) activity on suitable data: For example: Identify and Delete Rows that Contain Duplicate Data by considering an appropriate dataset.	Projector and Board	B1: 12/04/23 B2: 04/04/23

	Identify and Delete Columns That Contain a Single Value by considering an appropriate dataset.		
4	Demonstrate the working of the decision tree based ID3 algorithm. Use an appropriate data set for building the decision tree and apply this knowledge to classify a new sample.	Projector and Board	B1: 26/04/23 B2: 11/04/23
5	Demonstrate the working of the Random Forest algorithm. Use an appropriate data set for building and apply this knowledge to classify a new sample.	Projector and Board	B1: 03/05/23 B2: 25/04/23
6	Implement the naïve Bayesian classifier for a sample training data set stored as a .CSV file. Compute the accuracy of the classifier, considering few test data sets.		B1: 06/05/23 B2: 02/05/23
7	Assuming a set of documents that need to be classified, use the naive Bayesian Classifier model to perform this task. Calculate the accuracy, precision, and recall for your data set.	Projector and Board	B1: 10/05/23 B2: 09/05/23
8	Construct a Bayesian network considering medical data. Use this model to demonstrate the diagnosis of heart patients using standard Heart Disease Data Set.	Projector and Board	B1: 17/05/23 B2: 16/05/23
9	Demonstrate the working of EM algorithm to cluster a set of data stored in a .CSV file.	Projector and Board	B1: 31/05/23 B2: 27/05/23
10	Demonstrate the working of SVM classifier for a suitable data set	Projector and Board	B1: 14/06/23 B2: 30/05/23
12	LAB TEST		B1: 03/07/23 B2: 04/07/23


Signature of course Incharge


Signature of Module Coordinator


Signature of HOD
Head of the Department
Artificial Intelligence & Machine Learning
K.S. Institute of Technology
Bengaluru - 560 106


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BENGALURU - 560 109,


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DEPARTMENT OF ARTIFICIAL
INTELLIGENCE AND MACHINE LEARNING





NAME OF THE STAFF: **Dr. Amulyashree S & Prof. Roopa K Murthy**
 SUBJECT CODE/NAME: **18AIL67/DIGITAL IMAGE PROCESSING LABORATORY**
WITH MINI PROJECT
 SEMESTER/YEAR/SEC: **VI/III/A**
 ACADEMIC YEAR: **2022-2023**

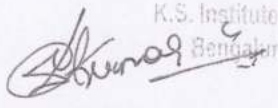
Sl. No.	Topic to be covered	Teaching Aid	Proposed Date
1	Introduction to image processing laboratory and Python programming	Projector and Board	B1:23/03/23 B2: 24/03/23
2	PART-A: Program 1: Write a Program to read a digital image. Split and display image into 4 quadrants, up, down, right and left	Projector and Board	B1: 30/03/23 B2: 31/03/23
3	Program 2: Write a program to show rotation, scaling, and translation of an image.	Projector and Board	B1: 06/04/23 B2: 21/04/23
4	Program 3: Read an image, first apply erosion to the image and then subtract the result from the original. Demonstrate the difference in the edge image if you use dilation instead of erosion.	Projector and Board	B1: 13/04/23 B2: 28/04/23
5	Program 4: Read an image and extract and display low-level features such as edges, textures using filtering techniques	Projector and Board	B1: 20/04/23 B2: 29/04/23
6	Program 5: Demonstrate enhancing and segmenting low contrast 2D images.	Projector and Board	B1: 27/04/23 B2: 05/05/23
7	PART-B: Mini Project problem statement formulation	Projector	B1: 04/05/23 B2: 12/05/23
8	Mini Project- Framing of Methodology	Projector	B1: 11/05/23 B2: 13/05/23
9	Mini Project-Implementation of Methodology	Projector	B1: 18/05/23 B2: 19/05/23
10	Lab Test-1	Projector and Board	B1: 22/05/23 B2: 23/05/23
11	Mini Project-Implementation of Methodology	Projector	B1: 25/05/23 B2: 26/05/23
12	Mini Project-Implementation of Methodology	Projector	B1: 01/06/23 B2: 02/06/23

13	Mini Project-Results Interpretation and Report formulation	Projector	B1: 08/06/23 B2: 09/06/23
14	Mini Project-Report Formulation and revisions	-	B1: 15/06/23 B2: 16/06/23
15	Lab Revision	Projector and Board	B1: 22/06/23 B2: 23/06/23
16	Lab Test 2/Lab Internals	-	B1: 3/7/23 B2: 4/7/23

Dr. Amulyashree.S

 Signature of course Incharge

Dr. Amulyashree.S

 Signature of Module Coordinator


 Signature of HOD of the Department
 Artificial Intelligence & Machine Learning
 K.S. Institute of Technology
 Bengaluru - 560 109



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1	Introduction to AI	Projector	B1: 08/06/23 B2: 09/06/23
2	History of AI	Projector	B1: 15/06/23 B2: 16/06/23
3	AI Applications	Projector	B1: 22/06/23 B2: 23/06/23
4	AI Ethics	Projector	B1: 3/7/23 B2: 4/7/23
5	AI in Industry	Projector	B1: 10/07/23 B2: 11/07/23
6	AI in Healthcare	Projector	B1: 17/07/23 B2: 18/07/23
7	AI in Education	Projector	B1: 24/07/23 B2: 25/07/23
8	AI in Agriculture	Projector	B1: 31/07/23 B2: 01/08/23
9	AI in Transportation	Projector	B1: 07/08/23 B2: 08/08/23
10	AI in Finance	Projector	B1: 14/08/23 B2: 15/08/23
11	AI in Marketing	Projector	B1: 21/08/23 B2: 22/08/23
12	AI in Law	Projector	B1: 28/08/23 B2: 29/08/23
13	AI in Entertainment	Projector	B1: 04/09/23 B2: 05/09/23
14	AI in Space	Projector	B1: 11/09/23 B2: 12/09/23
15	AI in Environment	Projector	B1: 18/09/23 B2: 19/09/23
16	AI in Energy	Projector	B1: 25/09/23 B2: 26/09/23
17	AI in Security	Projector	B1: 02/10/23 B2: 03/10/23
18	AI in Social Media	Projector	B1: 09/10/23 B2: 10/10/23
19	AI in Sports	Projector	B1: 16/10/23 B2: 17/10/23
20	AI in Art	Projector	B1: 23/10/23 B2: 24/10/23
21	AI in Music	Projector	B1: 30/10/23 B2: 31/10/23
22	AI in Fashion	Projector	B1: 06/11/23 B2: 07/11/23
23	AI in Architecture	Projector	B1: 13/11/23 B2: 14/11/23
24	AI in Design	Projector	B1: 20/11/23 B2: 21/11/23
25	AI in Architecture	Projector	B1: 27/11/23 B2: 28/11/23
26	AI in Architecture	Projector	B1: 04/12/23 B2: 05/12/23
27	AI in Architecture	Projector	B1: 11/12/23 B2: 12/12/23
28	AI in Architecture	Projector	B1: 18/12/23 B2: 19/12/23
29	AI in Architecture	Projector	B1: 25/12/23 B2: 26/12/23
30	AI in Architecture	Projector	B1: 01/01/24 B2: 02/01/24
31	AI in Architecture	Projector	B1: 08/01/24 B2: 09/01/24
32	AI in Architecture	Projector	B1: 15/01/24 B2: 16/01/24
33	AI in Architecture	Projector	B1: 22/01/24 B2: 23/01/24
34	AI in Architecture	Projector	B1: 29/01/24 B2: 30/01/24
35	AI in Architecture	Projector	B1: 05/02/24 B2: 06/02/24
36	AI in Architecture	Projector	B1: 12/02/24 B2: 13/02/24
37	AI in Architecture	Projector	B1: 19/02/24 B2: 20/02/24
38	AI in Architecture	Projector	B1: 26/02/24 B2: 27/02/24
39	AI in Architecture	Projector	B1: 05/03/24 B2: 06/03/24
40	AI in Architecture	Projector	B1: 12/03/24 B2: 13/03/24
41	AI in Architecture	Projector	B1: 19/03/24 B2: 20/03/24
42	AI in Architecture	Projector	B1: 26/03/24 B2: 27/03/24
43	AI in Architecture	Projector	B1: 02/04/24 B2: 03/04/24
44	AI in Architecture	Projector	B1: 09/04/24 B2: 10/04/24
45	AI in Architecture	Projector	B1: 16/04/24 B2: 17/04/24
46	AI in Architecture	Projector	B1: 23/04/24 B2: 24/04/24
47	AI in Architecture	Projector	B1: 30/04/24 B2: 01/05/24
48	AI in Architecture	Projector	B1: 07/05/24 B2: 08/05/24
49	AI in Architecture	Projector	B1: 14/05/24 B2: 15/05/24
50	AI in Architecture	Projector	B1: 21/05/24 B2: 22/05/24
51	AI in Architecture	Projector	B1: 28/05/24 B2: 29/05/24
52	AI in Architecture	Projector	B1: 04/06/24 B2: 05/06/24
53	AI in Architecture	Projector	B1: 11/06/24 B2: 12/06/24
54	AI in Architecture	Projector	B1: 18/06/24 B2: 19/06/24
55	AI in Architecture	Projector	B1: 25/06/24 B2: 26/06/24
56	AI in Architecture	Projector	B1: 02/07/24 B2: 03/07/24
57	AI in Architecture	Projector	B1: 09/07/24 B2: 10/07/24
58	AI in Architecture	Projector	B1: 16/07/24 B2: 17/07/24
59	AI in Architecture	Projector	B1: 23/07/24 B2: 24/07/24
60	AI in Architecture	Projector	B1: 30/07/24 B2: 31/07/24
61	AI in Architecture	Projector	B1: 06/08/24 B2: 07/08/24
62	AI in Architecture	Projector	B1: 13/08/24 B2: 14/08/24
63	AI in Architecture	Projector	B1: 20/08/24 B2: 21/08/24
64	AI in Architecture	Projector	B1: 27/08/24 B2: 28/08/24
65	AI in Architecture	Projector	B1: 03/09/24 B2: 04/09/24
66	AI in Architecture	Projector	B1: 10/09/24 B2: 11/09/24
67	AI in Architecture	Projector	B1: 17/09/24 B2: 18/09/24
68	AI in Architecture	Projector	B1: 24/09/24 B2: 25/09/24
69	AI in Architecture	Projector	B1: 01/10/24 B2: 02/10/24
70	AI in Architecture	Projector	B1: 08/10/24 B2: 09/10/24
71	AI in Architecture	Projector	B1: 15/10/24 B2: 16/10/24
72	AI in Architecture	Projector	B1: 22/10/24 B2: 23/10/24
73	AI in Architecture	Projector	B1: 29/10/24 B2: 30/10/24
74	AI in Architecture	Projector	B1: 05/11/24 B2: 06/11/24
75	AI in Architecture	Projector	B1: 12/11/24 B2: 13/11/24
76	AI in Architecture	Projector	B1: 19/11/24 B2: 20/11/24
77	AI in Architecture	Projector	B1: 26/11/24 B2: 27/11/24
78	AI in Architecture	Projector	B1: 03/12/24 B2: 04/12/24
79	AI in Architecture	Projector	B1: 10/12/24 B2: 11/12/24
80	AI in Architecture	Projector	B1: 17/12/24 B2: 18/12/24
81	AI in Architecture	Projector	B1: 24/12/24 B2: 25/12/24
82	AI in Architecture	Projector	B1: 31/12/24 B2: 01/01/25
83	AI in Architecture	Projector	B1: 07/01/25 B2: 08/01/25
84	AI in Architecture	Projector	B1: 14/01/25 B2: 15/01/25
85	AI in Architecture	Projector	B1: 21/01/25 B2: 22/01/25
86	AI in Architecture	Projector	B1: 28/01/25 B2: 29/01/25
87	AI in Architecture	Projector	B1: 04/02/25 B2: 05/02/25
88	AI in Architecture	Projector	B1: 11/02/25 B2: 12/02/25
89	AI in Architecture	Projector	B1: 18/02/25 B2: 19/02/25
90	AI in Architecture	Projector	B1: 25/02/25 B2: 26/02/25
91	AI in Architecture	Projector	B1: 03/03/25 B2: 04/03/25
92	AI in Architecture	Projector	B1: 10/03/25 B2: 11/03/25
93	AI in Architecture	Projector	B1: 17/03/25 B2: 18/03/25
94	AI in Architecture	Projector	B1: 24/03/25 B2: 25/03/25
95	AI in Architecture	Projector	B1: 31/03/25 B2: 01/04/25
96	AI in Architecture	Projector	B1: 07/04/25 B2: 08/04/25
97	AI in Architecture	Projector	B1: 14/04/25 B2: 15/04/25
98	AI in Architecture	Projector	B1: 21/04/25 B2: 22/04/25
99	AI in Architecture	Projector	B1: 28/04/25 B2: 29/04/25
100	AI in Architecture	Projector	B1: 05/05/25 B2: 06/05/25



K S INSTITUTE OF TECHNOLOGY BENGALURU

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

NAME OF THE STAFF: Prof. Sahana Sharma M & Prof. Abhilash Bhat

SUBJECT CODE/NAME: 18AIL68/ MOBILE APPLICATION DEVELOPMENT LABORATORY WITH MINI PROJECT

SEMESTER/YEAR/SEC: VI / A

ACADEMIC YEAR: 2022-2023

Sl. No.	Topic to be covered	Teaching Aid	Proposed Date
1	PART-A: Program 1: Create an application to design a Visiting Card. The Visiting card should have a company logo at the top right corner. The company name should be displayed in Capital letters, aligned to the center. Information like the name of the employee, job title, phone number, address, email, fax and the website address is to be displayed. Insert a horizontal line between the job title and the phone number.	Projector and Board	B2: 30/3/23 B1: 31/3/23
2	Program 2: Develop an Android application using controls like Button, TextView, EditText for designing a Calculator having basic functionality like Addition, Subtraction, Multiplication, and Division.	Projector and Board	B2: 06/4/23 B1: 15/4/23
3	Program 3: Create a SIGN Up activity with Username and Password. Validation of password should happen based on the PW rules	Projector and Board	B2: 13/4/23 B1: 31/4/23
4	Program 4: Develop an application to set an image as wallpaper. On click of a button, the wallpaper image should start to change randomly every 30 seconds.	Projector and Board	B2: 20/4/23 B1: 21/4/23
5	Program 5: Write a program to create an activity with two buttons START and STOP. On Pressing of the START button, the activity must start the counter by displaying the numbers from One and the counter must keep on counting until the STOP button is pressed. Display the counter value in a TextView control.	Projector and Board	B2: 27/4/23 B1: 28/4/23

6	PART –B: Mini project first review	Projector and Board	B2: 04/5/23 B1: 05/5/23
7	Program 6: Create two files of XML and JSON type with values for City_Name, Latitude, Longitude, Temperature, and Humidity. Develop an application to create an activity with two buttons to parse the XML and JSON files which when clicked should display the data in their respective layouts side by side.	Projector and Board	B2: 11/5/23 B1: 12/5/23
8	Program 7: Develop a simple application with one Edit Text so that the user can write some text in it. Create a button called “Convert Text to Speech” that converts the user input text into voice.	Projector and Board	B2: 18/5/23 B1: 19/5/23
7	Program 8: Create an activity like a phone dialer with CALL and SAVE buttons. On pressing the CALL button, it must call the phone number and on pressing the SAVE button it must save the number to the phone contacts.	Projector and Board	B2: 25/5/23 B1: 26/5/23
8	Mini project implementation/ report writing	Projector	B2: 01/6/23 B1: 02/6/23
9	Mini project implementation/ report corrections		B2: 08/6/23 B1: 09/6/23
10	Lab revision		B2: 15/06/23 B1: 16/06/23
11	Mini project final presentation	Projector	B2: 22/6/23 B1: 23/6/23
12	Lab IA		B2: 28/6/23 B1: 28/6/23


Signature of course In-charge


Signature of Module Coordinator


Signature of HOD
Head of the Department
Artificial Intelligence & Machine Learning
K.S. Institute of Technology
Bengaluru - 560 109


Signature of principal
PRINCIPAL
K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109.



K.S.INSTITUTE OF TECHNOLOGY,BENGALURU - 560109
DEPARTMENT OF COMPUTER SCIENCE AND DESIGN ENGINEERING
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : Surekha Byakod

COURSE CODE/TITLE : 21CS33/Analog Digital and Electronics

YEAR/ SEMESTER/SECTION : II/III

BRANCH : Computer Science And Design Engineering

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1:BJT BIASING						
1	BJT Biasing: Fixed bias,	L+D+I	BB	1	1	9/11/22
2	Collector to base Bias, voltage divider bias	L+D+I	BB	1	2	10/11/22
3	Problems on BJT biasing	L+D+I	BB	1	3	12/11/22
4	Problems on voltage divider	L+D+PS	BB	1	4	14/11/22
5	Current-to-Voltage and Converter, Voltage-to-Current Converter.	L+D+I	BB,	1	5	16/11/22
6	Collector to base bias ,Peak Detector.	L+D+I	BB, PPT	1	6	18/11/22
7	Astable Multivibrator,Relaxation Oscillator.	L+D+I	BB, PPT	1	7	21/11/22
8	Schmitt Trigger	L+D+I	BB, PPT	1	8	22/11/22

9	Schmitt Trigger Problems.	L+D+I	BB, PPT	1	9	23/11/22
10	Digital to Analog Converter	L+D+I	BB, PPT	1	10	24/11/22
11	Problems on DAC	L+D+I	BB	1	11	25/11/22
12	R-2R ladder and design	L+D+I	BB, PPT	1	12	26/11/22
13	1st Internal	L+D+I			13	28/11/22
14	Regulator power Supply Parameters, adjustable voltage regulator,	L+D+I	BB	1	14	30/11/22
15	Analog to Digital converter.	L+D+I	BB, PPT	1	15	1/12/22
16	Active Filters –Low pass filters	L+D+I	BB, PPT	1	16	2/12/22
17	Contd..High pass filters,Bandpass filters .	L+D+I	BB, PPT	1	17	5/12/22
18	Problems on Filters.	L+D+I	BB	1	18	6/12/22
MODULE 2: KARNAUGH MAPS						
19	Karnaugh maps: minimum forms of switching functions, two variable.	L+D+I	BB	1	19	7/12/2022
20	Three variable Karnaugh maps .	L+D,PS	BB	1	20	9/12/2022
21	Four variable Karnaugh maps.	L+D+I	BB	1	21	10/12/2022
22	Ex-on 3 & 4 variable k-maps.		BB	1	22	12/12/2022
23	Determination of minimum expressions using essential prime implicants.	L+D+I	BB	1	23	14/12/2022
24	Quine- McClusky Method: determination of prime implicants, the prime implicant chart,	L+D+I	BB	1	24	15/12/2022
25	Problems on Quine- McClusky Method	L+D+I	BB	1	25	16/12/2022
26	Petricks method-Simplification	L+D+I	BB	1	26	19/12/2022
27	Problems on Petricks method-Simplification	L+D+I	BB	1	27	21/12/2022
28	Simplification using map-entered variables	L+D+I	BB	1	28	22/12/2022
29	Petricks method-Problems on petricks method.		BB	1	29	23/12/2022
30	simplification of incompletely specified functions,	L+D+I	BB	1	30	24/12/2022

	simplification using map-entered variables.					
MODULE 3 :REVIEW OF COMBINATIONAL CIRCUITS						
31	Review of Combinational circuit.	L+D+I	BB	1	31	26/12/2022
32	Design of circuit with limited with fan in.	L+D+I	BB	1	32	27/12/2022
33	Gate delays and Timing diagrams.	L+D+I	BB	1	33	28/12/2022
34	Hazards in combinational Logic,	L+D+I	BB	1	34	29/12/2022
35	simulation and testing of logic circuits	L+D+I	BB	1	35	30/12/2022
36	Revision	L+D+I	BB	1	36	31/12/2022
37	2NDInternals.				37	2/1/2023
38	Multiplexers 3-State buffers	L+D+I	BB	1	38	4/1/2023
39	Three state buffers,	L+D+I	BB	1	39	5/1/2023
40	Decoders and encoders,	L+D+I	BB	1	40	6/1/2023
41	Programmable Logic devices.	L+D+I	BB	1	41	9/1/2023
42	Revision on decoder and encoder.	L+D+I	BB		42	10/1/2023
MODULE 4:VHDL						
43	Introduction to VHDL	L+D+I	BB, PPT	1	43	11/1/2023
44	VHDL description of combinational circuits	L+D+I	BB, PPT	1	44	12/1/2023
45	VHDL Models for multiplexers			1	45	13/1/2023
46	VHDL Modules	L+D+I	BB, PPT	1	46	16/1/2023
47	Latches and Flip-Flops: Set Reset Latch, Gated Latches	L+D+I	BB, PPT	1	47	18/1/2023
48	Edge-Triggered D Flip Flop 3	L+D+I	BB, PPT	1	48	19/1/2023
49	SR Flip Flop	L+D+I	BB, PPT	1	49	20/1/2023
50	J K Flip Flop, T Flip Flop.	L+D+I	BB, PPT	1	50	23/1/2023
MODULE 5 REGISTERS AND REGISTERS TRANSFER						
51	Register and counters	L+D+I	BB, PPT	1	51	24/1/2023
52	Registers and Register Transfers					

53	Parallel Adder with accumulator	L+D+I	BB, PPT	1	52	25/1/2023
54	Design of Binary counters	L+D+I	BB, PPT	1	53	27/1/2023
55	Counters for other sequences	L+D+I	BB, PPT	1	54	28/1/2023
56	Counter design using SR and J K Flip Flops	L+D+I	BB, PPT	1	55	31/1/2023
57	3 rd Internal Test	L+D+I	BB, PPT	1	56	02/2/2023
58	Explanation on filters	L+D+I	BB, PPT	1	57	3/2/2023
59	Low pass filters,HPF	L+D+I	BB, PPT	1	58	7/2/2023
60	Problems on LPF and HPF	L+D+I	BB, PPT	1	59	8/2/2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	Module 1 Simulate BJT CE Voltage divider biased voltage amplifier using any suitable circuit simulator.	White board	Pspice simulator and Circuit rig up	Lab Session-3HR	3	B1:9/11 B2:10/11
2	Using 741 op-amp design a 1khz Relaxation oscillator with 50% duty cycle.	White board	Pspice Simulator And circuit rig up	Lab Session-3HR	6	B1:16/11 B2:17/11
3	Design an astable multivibrator circuit for cases of duty cycle(50%, <50%, & >50%) using NE 555 timer IC.	White board	Pspice Simulator And circuit rig up	Lab Session-3HR	9	B1:23/11 B2:24/11
4	Using 741 opamp design a window comparator for any given UTP<P.	White board	Pspice Simulator And circuit rig up	Lab Session-3HR	12	B1:7/12 B2:8/12
MODULE 2						

Registers and Counters: Parallel Adder with accumulator, shift registers, design of Binary counters, counters for other sequences, counter design using SR and J K Flip Flops.

Text Books:


1. Charles H Roth and Larry L Kinney, Analog and Digital Electronics, Cengage Learning, 2019


Reference Books:


1. Anil K Maini, Varsha Agarwal, Electronic Devices and Circuits, Wiley, 2012.
2. Donald P Leach, Albert Paul Malvino & Goutam Saha, Digital Principles and Applications, 8th Edition, Tata McGraw Hill, 2015.
3. M. Morris Mani, Digital Design, 4th Edition, Pearson Prentice Hall, 2008.
4. David A. Bell, Electronic Devices and Circuits, 5th Edition, Oxford University Press, 2008

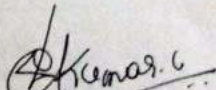
Details for the teaching Aids

Black Board, PPTs


Course Incharge


Module coordinator


HOD-CSD


PRINCIPAL



KS INSTITUTE OF TECHNOLOGY BANGALORE
DEPARTMENT OF COMPUTER SCIENCE AND DESIGN

NAME OF THE STAFF : Mrs SUSHMA A

SUBJECT CODE/NAME : 21CS32/ DATA STRUCTURES AND APPLICATIONS

SEMESTER/YEAR : III A/ II

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Basic Data structures Concepts and application						
1	Data Structures , Classifications (Primitive & Non Primitive), Data structure Operations.	L+D	LCD	1	1	31/10/2022
2	Review of Arrays, Structures, Self-Referential Structures.	L+ D	LCD+BB	1	2	2/11/2022
3	Dynamic Memory Allocation Functions	L+ D	LCD+BB	1	3	7/11/2022
4	Representation of Linear Arrays in Memory	L+D	LCD+BB	2	5	8/11/2022
5	Dynamically allocated arrays	L+D	LCD+BB	1	6	9/11/2022
6	Array Operations: Traversing, inserting, deleting, searching, and sorting.	L+D, PS	LCD	2	8	12/11/2022
7	Multidimensional Arrays	L+I	LCD+BB	1	9	14/11/2022
8	Representation of Polynomials with arrays	L+D, PS	BB	2	11	15/11/2022
9	Sparse Matrices with arrays	L+D, PS	BB	1	12	16/11/2022

Module I Lab Programs						
10	1. Design, Develop and Implement a menu driven Program in C for the following Array Operations a. Creating an Array of N Integer Elements b. Display of Array Elements with Suitable Headings c. Exit. Support the program with functions for each of the above operations.	L+D, PS	LCD	Lab Session-3HR	3	B1:10/11/2022 B2:18/11/2022
11	2. Design, Develop and Implement a menu driven Program in C for the following Array operations a. Inserting an Element (ELEM) at a given valid Position (POS) b. Deleting an Element at a given valid Position POS)	L+D, PS	LCD	Lab Session-3HR	6	B1:17/11/2022 B2:21/11/2022
12	Stacks: Definition, Stack Operations and Array Representation of Stacks	L+D	LCD+BB	1	13	21/11/2022
13	Stack Applications: evaluation of postfix expression	L+D	LCD+BB	2	15	22/11/2022 22/11/2022
14	Infix to postfix conversion,	L+D	BB	1	16	23/11/2022
IA-I (28/11/2022)						
	Infix to prefix conversion Stacks using Dynamic Arrays	L+D	BB	1	17	26/12/2022
15	Recursion - Factorial, GCD, Fibonacci Sequence,	L+D, PS	LCD+BB	1	18	5/12/2022
17	Tower of Hanoi, Ackerman's function	PS	LCD+BB	2	20	6/12/2022
18	Queues: Definition, Array Representation and Queue Operations	L+I	LCD+BB	1	21	7/12/2022
19	Circular Queues	L+D	LCD+BB	1	22	12/12/2022
20	Circular queues using Dynamic arrays	L+D	BB	2	24	13/12/2022
21	Dequeues, Priority Queues	L+D, LW	BB	1	25	14/12/2022

22	Module 2 Lab Programs 1. Design, Develop and Implement a menu driven Program in C for the following operations on STACK of Integers (Array Implementation of Stack with maximum size MAX) a. Push an Element on to Stack b. Pop an Element from Stack c. Demonstrate Overflow and Underflow situations on Stack d. Display the status of Stack e. Exit Support the program with appropriate functions for each of the above operations	L+D, PS	LCD+BB	Lab Session-3HR	3	B1:24/11/2022 B2:21
23	2. Design, Develop and Implement a Program in C for the following Stack Applications a. Evaluation of Suffix expression with single digit operands and operators: +, -, *, /, %, ^ b. Solving Tower of Hanoi problem with n disks	L+D, PS	LCD+BB	Lab Session-3HR	3	B1:01/12/2022 B2:09/12/2022 2

MODULE 3: Linked Lists

24	Definition, and classification of linked lists.	L+D, L+I	BB	1	26	19/12/2022
25	Representation of different types of linked list in memory	L+I	BB	2	28	20/12/2022
26	Linked list operations: Traversing, Searching, Insertion, and Deletion	L+D	BB	2	30	21/12/2022 24/12/2022
27	Doubly Linked lists	L+D	BB	3	33	26/12/2022 27/12/2022
28	Circular linked lists	L+D	BB	1	34	28/12/2022
29	Circular linked lists	L+D	BB	1	35	31/12/2022
30	Header linked lists	L+D	BB	1	36	09/01/2022
31	Linked Stacks and Queues Applications of Linked lists	L+I,	BB	2	38	10/01/23
32	Module 3 Lab Programs 1. Singly Linked List (SLL) of Integer Data a. Create a SLL stack of N integer.	L+D	LCD+BB	Lab Session-	3	B1:8/12/2022 B2:12/12/2022

	c. Linear search. Create a SLL queue of N Students Data Concatenation of two SLL of integers.					
33	2. Design, Develop and Implement a menu driven Program in C for the following operations on Doubly Linked List (DLL) of Professor Data with the fields: ID, Name, Branch, Area of specialization a. Create a DLL stack of N Professor's Data. b. Create a DLL queue of N Professor's Data Display the status of DLL and count the number of nodes in it.	L+D	LCD+BB	Lab Session-3HR	3	B1:15/12/2022 B2:23/12/2022
MODULE 4: Trees						
34	Terminology, Binary Trees, Properties of Binary trees	L+D	BB	1	39	11/01/2022
35	Array and linked Representation of Binary Trees	L+I	BB	1	40	16/01/2022
IA-II (2/12/2022)						
36	Binary Tree Traversals - Inorder, postorder and preorder	L+D, PS	LCD+BB	2	42	17/1/2023
37	Threaded binary trees	L+D	LCD+BB	1	43	18/1/2023
38	Threaded binary trees	L+D	LCD+BB	1	44	23/1/2023
39	Binary Search Trees – Definition, Insertion, Deletion, Traversal, Searching	L+D	LCD+BB	2	46	24/1/2023
40	Application of tree – Evaluation of expression	L+D	LCD+BB	1	47	25/1/2023
41	Module 4 Lab Programs 1. Given an array of elements, construct a complete binary tree from this array in level order fashion. That is, elements from left in the array will be filled in the tree level wise starting from level 0. Ex: Input : 1 / \ arr[] = {1, 2, 3, 4, 5, 6} 2 3 /\ \ 4 5 6 Ou Output : Root of the following tree	L+D	LCD+BB	Lab Session-3HR	3	B1:22/12/2022 B2:30/12/2022
42	2. Design, Develop and Implement a menu driven Program in C for the following operations on Binary Search Tree (BST) of Integers a. Create a BST of N Integers b. Traverse the BST in Inorder, Preorder and Post Order	L+D	LCD+BB	Lab Session-3HR	3	B1:29/12/2022 B2:5/12/2022

2. Data Structures - Seymour Lipschutz, Schaum's Outlines, Revised 1st edition, McGraw Hill, 2014.
3. Reema Thareja, Data Structures using C, 3rd Ed, Oxford press, 2012.

Reference Books:

1. Gilberg and Forouzan, Data Structures: A Pseudo-code approach with C, 2nd Ed, Cengage Learning, 2014.
2. Jean-Paul Tremblay & Paul G. Sorenson, An Introduction to Data Structures with Applications, 2nd Ed, McGraw Hill, 2013
3. A M Tenenbaum, Data Structures using C, PHI, 1989
4. Robert Kruse, Data Structures and Program Design in C, 2nd Ed, PHI, 1996.

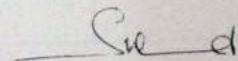
Web Materials:

Weblinks and Video Lectures (e-Resources):

- <http://elearning.vtu.ac.in/econtent/courses/video/CSE/06CS35.html>
- <https://nptel.ac.in/courses/106/105/106105171/>
- <http://www.nptelvideos.in/2012/11/data-structures-and-algorithms.html>
Problem based learning
- <http://www.nptelvideos.in/2012/11/data-structures-and-algorithms.html>
- <https://ds1-iiith.vlabs.ac.in/exp/tree-traversal/index.html>
- <https://ds1-iiith.vlabs.ac.in/exp/tree-traversal/depth-first-traversal/dft-practice.html>

Details for the teaching Aids

Black Board and LCD



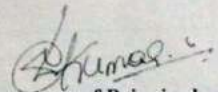
Signature of Course In-Charge



Signature of Module Coordinator



Signature of HOD



Signature of Principal



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF COMPUTER SCIENCE & DESIGN
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : DEEPA .S.R

COURSE TYPE / CODE / TITLE: 21CS34 / COMPUTER ORGANIZATION & ARCHITECTURE

YEAR/ SEMESTER/SECTION: II/ III /A

BRANCH: COMPUTER SCIENCE & DESIGN

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Basic Structure of Computers						
1	Introduction to CO	L+D+I	BB+PPT	1	1	3-11-22
2	Basic Operational Concepts	L+D+I	BB+PPT	1	2	4-11-22
3	Bus Structures, Performance – Processor Clock,	L+D+I	BB+PPT	1	3	7-11-22
4	Basic Performance Equation, Clock Rate	L+D+I	BB+PPT	1	4	8-11-22
5	Performance Measurement	L+D+I	BB+PPT	1	5	10-11-22
6	Machine Instructions and Programs: Memory Location and Addresses	L+D+I	BB+PPT	2	7	12-11-22 14-11-22
7	Memory Operations, Instructions, and Instruction Sequencing,	L+D+I	BB+PPT	2	9	15-11-22 17-11-22
8	Addressing Modes	L+D+I	BB+PPT	2	11	18-11-22
MODULE 2: Input/Output Organization						
9	Introduction to Input/Output Organization	L+D+I	BB+PPT	1	13	21-11-22

10	Accessing Input Devices	L+D+I	BB+PPT	1	14	22-11-22
11	Accessing Output Devices	L+D+I	BB+PPT	1	15	24-11-22
12	Interrupts – Interrupt Hardware	L+D+I	BB+PPT	1	16	25-11-22
13	1 st Internal Assessment			1	17	30-11-22
14	Interrupts – Interrupt Hardware	L+D+I	BB+PPT	3	20	1-12-22 2-12-22 5-12-22
15	Direct Memory Access	L+D+I	BB+PPT	2	22	6-12-22 8-12-22
16	Buses	L+D+I	BB+PPT	2	24	9-12-22 10-12-22
17	Interface Circuits	L+D+I	BB+PPT	2	26	12-12-22 13-12-22
MODULE 3: Memory System						
18	Introduction to Memory System	L+D+I	BB+PPT	1	28	15-12-22
19	Basic Concepts	L+D+I	BB+PPT	1	29	16-12-22
20	Semiconductor RAM Memories: Internal organization of Memory chips	L+D+I	BB+PPT	1	30	19-12-22
21	Static Memories, Asynchronous DRAMs and Synchronous DRAMs	L+D+I	BB+PPT	2	32	20-12-22 22-12-22
22	Structure of Larger memories, memory system considerations	L+D+I	BB+PPT	2	34	23-12-22 26-12-22
23	Read Only Memories	L+D+I	BB+PPT	1	35	27-12-22
24	Speed, Size, and Cost	L+D+I	BB+PPT	1	36	29-12-22
25	Cache Memories – Mapping Functions	L+D+I	BB+PPT	2	38	30-12-22 31-12-22
26	1 st Internal Assessment			1	39	4-1-23
27	Virtual Memories	L+D+I	BB+PPT	2	41	5-1-23 6-1-23
MODULE 4: Arithmetic & Basic Processing Unit						
28	Introduction to Arithmetic:	L+D+I	BB+PPT	1	42	9-1-23
29	Numbers, Arithmetic Operations and Characters,	L+D+I	BB+PPT	1	43	10-1-23
30	Addition and Subtraction of Signed Numbers	L+D+I	BB+PPT	2	45	12-1-23 13-1-23
31	Design of Fast Adders	L+D+I	BB+PPT	2	47	15-1-23

32	Multiplication of Positive Numbers,	L+D+I	BB+PPT	1	48	16-1-23 19-1-23
33	Introduction to Basic Processing Unit	L+D+I	BB+PPT	1	49	20-1-23
34	Some Fundamental Concepts	L+D+I	BB+PPT	1	50	23-1-23
35	Execution of a Complete Instruction	L+D+I	BB+PPT	1	51	24-1-23
36	Multiple Bus Organization	L+D+I	BB+PPT	1	52	27-1-23
37	Hard-wired Control – A Complete Processor	L+D+I	BB+PPT	1	53	30-1-23
38	Microprogrammed Control.	L+D+I	BB+PPT	1	54	31-1-23
MODULE 5: Pipelining & Parallel Processing						
39	Parallel Processing	L+D+I	BB+PPT	1	55	1-2-23
40	3 rd Internal Assessment	L+D+I	BB+PPT	2	57	6-2-23 7-2-23
41	Pipelining	L+D+I	BB+PPT	2	59	7-2-23 9-2-23
42	Arithmetic pipeline	L+D+I	BB+PPT	1	60	10-2-23
43	Vector processing	L+D+I	BB+PPT	1	61	11-2-23
44	Array Processors, Quiz	L+D+I	BB+PPT	1	62	11-2-23

Text Books:

1. Carl Hamacher, Zvonko Vranesic, Safwat Zaky, Computer Organization, 5th Edition, Tata McGraw Hill, 2002.
2. Morris Mano, Computer System Architecture, PHI, 3rd edition

Details of the teaching aids: 1. BB – Black Board

2. PPT Power Point Presentation

Deefa
Course Incharge

Deefa
Module coordinator

Deefa
HOD

Deefa

**K S INSTITUTE OF TECHNOLOGY BENGALURU
DEPARTMENT OF COMPUTER SCIENCE & DESIGN**



LESSON PLAN

NAME OF THE STAFF: **Prof. Surekha byakod & Prof. S.Subhash Kumar**

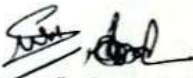
SUBJECT CODE/NAME: **21CSL38/Mastering Office**

SEMESTER/YEAR/SEC: **III/II/A**

ACADEMIC YEAR : **2022-2023**

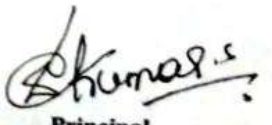
Sl. No.	Topic to be covered	Teaching Aid	Proposed Date
1	Module-1 MS-Word -Working with Files, Text - Formatting, Moving, copying and pasting text, Styles - Lists - Bulleted and numbered lists,	Projector and Board	7-11-2022
2	Module-1 Nested lists, Formatting lists. Table Manipulations. Graphics - Adding clip Art, add an image from a file, editing graphics, Page formatting.	Projector and Board	14-11-2022
3	Module-1 Header and footers, page numbers Protect the Document, Mail Merge, Macros - Creating & Saving web pages, Hyperlinks.	Projector and Board	21-11-2022
4	Module-2 MS-Excel - Modifying a Worksheet - Moving through cells, adding worksheets, rows and columns, resizing rows and columns,	Projector and Board	5-12-2022
5	Module-2 selecting cells Moving and copying cells, freezing panes - Macros - recording and running. Linking worksheets -	Projector and Board	12-12-2022
6	Module-2 Sorting and Filling, Alternating text and numbers with Auto fill Auto filling functions. Graphics - Adding clip art,	Projector and Board	19-12-2022
7	Module-2 add an image from a file, Charts - Using chart Wizard, Copy a chart to Microsoft Word.	Projector and Board	26-12-2022
8	Module-3 MS-Power Point -Create a Presentation from a template- Working with Slides - Insert a new slide, applying a design template, changing slide layouts	Projector and Board	6-01-2023
9	Module-3 Resizing a text box, Text box properties, delete a text box - Video and Audio effects, Colour Schemes & Backgrounds Adding clip art, adding an image from a file, Save as a web page.	Projector and Board	23-01-2023
10	Module-4 MS-Access - Using Access database wizard, pages and projects. Creating Tables -	Projector and Board	30-01-2023

11	Module-4 Create a Table in design view. Datasheet Records - Adding, Editing, deleting records, Adding and deleting columns Resizing rows and columns.	Projector and Board	06-02-2023
12	Module-4 Finding data in a table & replacing, Print a datasheet. Queries - MS-Access	Projector and Board	13-02-2023
13	Module-5 Microsoft Outlook- Introduction, Starting Microsoft Outlook	Projector and Board	20-02-2023
14	Module-5 Outlook Today, Different Views in Outlook, Outlook Data Files	Projector and Board	27-02-2023
15			
16		IA-I	06-03-2023
		IA-II	14-03-2023


Signature of course Incharge


Signature of Module Coordinator


Signature of HOD


Principal
PRINCIPAL
K.S. INSTITUTE OF TECHNICAL
BENGALURU - 560 109.

K S INSTITUTE OF TECHNOLOGY BENGALURU
DEPARTMENT OF COMPUTER SCIENCE AND DESIGN

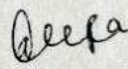


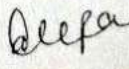
NAME OF THE STAFF: **Lakshmi K K & Prof. Roopa K Murthy**
 SUBJECT CODE/NAME: **21CSL35/OBJECT ORIENTED PROGRAMMING**
WITH JAVA LABAROTORY
 SEMESTER/YEAR/SEC: **III/II/A**
 ACADEMIC YEAR : **2022-2023**

Sl. No.	Topic to be covered	Teaching Aid	Proposed Date
1	Program: Write a java program that prints all real solutions to the quadratic equation $ax^2+bx+c=0$. Read in a, b, c and use the quadratic formula.	Projector and Board	09/11/2022-B1 18/11/2022-B2
2	Program: Create a Java class called Student with the following details as variables within it. USN Name Branch Phone Write a Java program to create n Student objects and print the USN, Name, Branch, and Phone of these objects with suitable headings.	Projector and Board	25/11/2022-B1 23/11/2022-B2
3	A. Write a program to check prime number B. Write a program for Arithmetic calculator using switch case menu	Projector and Board	02/12/2022-B1 26/11/2022-B2
4	Design a super class called Staff with details as StaffId, Name, Phone, Salary. Extend this class by writing three subclasses namely Teaching (domain, publications), Technical (skills), and Contract (period). Write a Java program to read and display at least 3 staff objects of all three categories.	Projector and Board	09/12/2022-B1 07/12/2022-B2
5	Write a java program demonstrating Method overloading and Constructor overloading.	Projector and Board	16/12/2022-B1 14/12/2022-B2
6	Develop a java application to implement currency converter (Dollar to INR, EURO to INR, Yen to INR and vice versa), distance converter (meter to KM, miles to KM and vice versa), time converter (hours to minutes, seconds and vice versa) using packages.	Projector and Board	23/12/2022-B1 21/12/2022-B2
7	Write a program to generate the resume. Create 2 Java classes Teacher (data: personal information, qualification, experience, achievements) and Student (data: personal information, result, discipline) which implements the java interface Resume with the method biodata().	Projector and Board	30/12/2022-B1 24/12/2022-B2
8	Program: Write a Java program that implements a multi-	Projector and	13/01/2023-B1

	thread application that has three threads. First thread generates a random integer for every 1 second; second thread computes the square of the number and prints; third thread will print the value of cube of the number.	Board	27/12/2022-B2
9	Program: Write a program to perform string operations using ArrayList. Write functions for the following a. Append - add at end b. Insert - add at particular index c. Search d. List all string starts with given letter.	Projector and Board	14/01/2023-B1 06/01/2023-B2
10	Program: Write a Java program to read two integers a and b. Compute a/b and print, when b is not zero. Raise an exception when b is equal to zero.	Projector and Board	20/01/2023-B1 28/01/2023-B2
11	Write a java program that reads a file name from the user, displays information about whether the file exists, whether the file is readable, or writable, the type of file and the length of the file in bytes	Projector and Board	27/01/2023-B1 15/02/2023-B2
12	Develop an applet that displays a simple message in center of the screen. Develop a simple calculator using Swings.	Projector and Board	10/02/2023-B1 22/02/2023-B2
	REVISION		17/02/2023-B1 24/02/2023-B1 25/02/2023-B2 01/03/2023-B2
	LAB TEST		10/03/2023-B1 08/03/2023-B2 23/03/2023-B1 31/03/2023-B2


Signature of course Incharge


Signature of Module Coordinator


Signature of HOD
Head of the Department
Computer Science & Desig
K.S. Institute of Technology
Bengaluru - 560 109.



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF COMPUTER SCIENCE & DESIGN
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : DEEPA .S.R

COURSE TYPE / CODE / TITLE: 21CS44 / OPERATING SYSTEMS

YEAR/ SEMESTER/SECTION: II/ IV /A

BRANCH: COMPUTER SCIENCE & DESIGN

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Introduction to Operating						
1	What operating systems do; Computer System organization	L+D	BB+LCD	1	1	17-5-23
2	Computer System architecture; Operating System structure	L+D	BB+LCD	1	2	18-5-23
3	Operating System operations; Process management	L+ D	BB+LCD	1	3	22-5-23
4	Memory management; Storage management; Protection and Security	L+ D	BB+LCD	1	4	23-5-23
5	Distributed system; Special-purpose systems; Computing environments.	L+D	BB+LCD	1	5	24-5-23
6	Operating System Services; User - Operating System interface; System calls	L+D+I	BB+LCD	1	6	25-5-23
7	Types of system calls; System programs	L+D+I	BB+LCD	1	7	27-5-23
8	Operating system design and implementation; Operating System structure	L+D+I	BB+LCD	1	8	29-5-23
9	Virtual machines; Operating System generation; System boot	L+D+I	BB+LCD	1	9	30-5-23
10	Process Management Process concept	L+D+I	BB+LCD	1	10	31-5-23

11	Process scheduling	L+I	LCD	1	11	1-6-23
12	Operations on processes	L+D+I	BB+LCD	1	12	5-6-23
13	Inter process communication	L+I	LCD	1	13	7-6-23
MODULE 2: Hardware Technologies						
14	Overview; Multithreading models;	L+ D	BB+LCD	1	14	8-6-23
15	Thread Libraries; Threading issues.	L+D+I	BB+LCD	1	15	10-6-23
16	Process Scheduling: Basic concepts; Scheduling Criteria	L+D+I	BB+LCD	1	16	-6-23
17	Scheduling Algorithms	L+D+I, PS(Tx)	BB+LCD	5	21	12-6-23, 13-6-23, 14-6-23, 15-6-23, 22-6-23
18	CIE-1			1	22	21-6-23
19	Multiple-processor scheduling; Thread scheduling.	L+D+I	BB+LCD	1	23	24-6-23
20	Process Synchronization: Synchronization: The critical section problem	L+D+I	BB+LCD	1	24	26-6-23
21	Peterson's solution; Synchronization hardware	L+I	LCD	1	25	27-6-23
22	Semaphores	L+D+I	BB+LCD	1	26	28-6-23
23	Classical problems of synchronization	L+I	LCD	1	27	30-6-23
24	Monitors	L+D+I	BB+LCD	1	28	3-7-23
MODULE 3: Bus, Cache, and Shared Memory						
25	System model; Deadlock characterization;	L+D+I	BB+LCD	1	29	4-7-23
26	Methods for handling deadlocks; Deadlock prevention	L+D+I	BB+LCD	1	30	5-7-23
27	Deadlock avoidance	L+D+I, PS(Tx)	BB+LCD	2	32	6-7-23, 8-7-23,
28	Deadlock detection and recovery from deadlock	L+D+I	BB+LCD	1	33	10-7-23
29	Memory Management: Memory management strategies: Background	L+D+I	BB+LCD	1	34	11-7-23
30	Swapping; Contiguous memory allocation;	L+I	LCD	1	35	12-7-23
31	Paging	L+D+I	BB+LCD	2	37	13-7-23, 17-7-23,
32	Structure of page table	L+D+I	BB+LCD	1	38	18-7-23
33	Segmentation	L+D+I	BB+LCD	1	39	19-7-23

MODULE 4: Parallel and Scalable Architectures

34	Background; Demand paging;					
35	Demand paging;	L+D+I	BB+LCD	2	41	20-7-23,22-7-23,
35	Copy-on-write	L+D+I	BB+LCD	1	42	24-7-23
37	Allocation of frames; Thrashing	L+D+I	BB+LCD	1	43	25-7-23,
38	File System, Implementation of File System: File system: File concept	L+D+I	BB+LCD	1	44	26-7-23,
39	CIE-2	L+D+I	BB+LCD	1	45	27-7-23,
39	Access methods; Directory structure					2-8-23
40	File system mounting; File sharing; Protection	L+I	LCD	1	46	3-8-23
41	Implementing File system: File system structure; File system implementation	L+D+I	BB+LCD	1	47	5-8-23
42	Directory implementation; Allocation methods	L+D+I	BB+LCD	1	48	7-8-23
43	Free space management	L+D+I	BB+LCD	1	49	8-8-23
44	Mass storage structures; Disk structure; Disk attachment	L+D+I	BB+LCD	1	50	9-8-23
45	Disk scheduling	L+I	LCD	1	51	10-8-23
46	Disk management; Swap space management	L+D+I	BB+LCD	1	52	14-8-23
47	Protection: Goals of protection, Principles of protection, Domain of protection,	L+D+I	BB+LCD	1	53	16-8-23
48	Access matrix, Implementation of access matrix, Access control,	L+D+I	BB+LCD	1	54	17-8-23
49	Revocation of access rights, Capability- Based systems	L+D+I	BB+LCD	1	55	19-8-23
50	Case Study: The Linux Operating System: Linux history; Design principles; Kernel modules	L+D+I	BB+LCD	1	56	21-8-23
51	Process management; Scheduling; Memory Management	L+D+I	BB+LCD	1	57	22-8-23
52	File systems, Input and output; Inter-process communication	L+D+I	BB+LCD	1	58	23-8-23
53	File systems, Input and output; Inter-process communication	L+D+I	BB+LCD	1	59	24-8-23
54	File systems, Input and output; Inter-process communication	L+D+I	BB+LCD	1	60	28-8-23
55	Pedagogy Activity -Quiz		BB+LCD	1	61	29-8-23
				1	62	30-8-23

56	Revision	L+D+I	BB+LCD	1	63	
57	Revision	L+D+I	BB+LCD	1	64	31-8-23
58	Revision	L+D+I	BB+LCD	1	65	2-9-23
59	Revision	L+D+I	BB+LCD	1	66	4-9-23
60	CIE-3			1	67	5-9-23
61	Revision	L+D+I	BB+LCD	1	68	8-9-23
62	Revision	L+D+I	BB+LCD	1	69	14-9-23
						16-9-23

Text Books:

1. Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, Operating System Principles 7th edition, Wiley-India, 2006.

Details of the teaching aids: 1. BB+LCD – Black Board, Projector
2. PS- Problem Solving

Deefa
Course Incharge

Deefa
Module coordinator

Deefa
HOD

Shrinagar-c
Principal



K.S.INSTITUTE OF TECHNOLOGY, BENGALURU-560109

DEPARTMENT OF COMPUTER SCIENCE AND DESIGN

NAME OF THE STAFF : SUSHMA A

SUBJECT CODE/NAME: 21CS42 / Design and Analysis of Algorithms

SEMESTER/ SEC / YEAR : IV/B/2023

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1:Introduction						
1	Introduction	L+ D	BB	1	1	17/5/2023
2	What is an Algorithm? It's Properties. Algorithm Specification-using natural language	L+ D	BB + LCD	1	2	19/5/2023
3	Pseudo code convention, Fundamentals of Algorithmic Problem solving	L+ D	BB + LCD	1	3	22/5/2023
4	Analysis Framework, Time efficiency and space efficiency, Worst-case, Best-case and Average case efficiency	L+D	BB + LCD	1	4	24/5/2023
5	Performance Analysis: Estimating Space complexity and Time complexity of algorithms	L+D	BB + LCD	1	5	26/5/2023
6	Asymptotic Notations: Big-Oh notation (O), Omega notation (Ω), Theta notation (Θ) with examples	L+ D	BB + LCD	1	6	27/5/2023
7	Mathematical analysis of Non-Recursive	L+ D	BB + LCD	1	7	29/5/2023

8	Recursive Algorithms with Examples.	L+D	BB + LCD	1	8	30/5/2023
9	Brute force design technique: Selection sort	L+D	BB + LCD	1	9	31/5/2023
10	Sequential search	L+D	BB + LCD	1	10	2/6/2023
11	String matching algorithm with complexity Analysis	L+D	BB + LCD	1	11	5/6/2023
12	Revision	L+D	BB + LCD	1	12	6/6/2023
13	Revision	L+D	BB + LCD	1	13	7/06/2023
Module – 2: Divide and Conquer						
14	Divide and Conquer, General method, Recurrence equation for divide and conquer	L+D	BB + LCD	1	14	9/6/2023
15	Solving it using Master's theorem	L+D	BB + LCD	1	15	12/6/2023
16	Divide and Conquer algorithms and complexity Analysis of Finding the maximum & minimum	L+D	BB + LCD	1	16	13/6/2023
17	Binary search	L+D	BB + LCD	1	17	14/6/2023
18	Merge sort	L+D	BB + LCD	1	18	16/6/2023
19	Quick sort	L+D	BB + LCD	1	19	23/6/2023
IA-1 (19/6/2023)						
20	Decrease and Conquer Approach: Introduction	L+D	BB + LCD	1	20	24/6/2023
21	Insertion sort.	L+D	BB + LCD	1	21	26/6/2023
22	Graph searching algorithms	L+D	BB + LCD	1	22	27/6/2023
23	Topological Sorting	L+D	BB + LCD	1	23	28/6/2023
24	Efficiency analysis.	L+D	BB + LCD	1	24	30/6/2023
25	Revision	L+D	BB + LCD	1	25	3/7/2023
26	Revision	L+D	BB + LCD	1	26	4/7/2023
Module-3: Greedy Method						
27	Greedy Method: General method	L+D	BB + LCD	1	27	5/7/2023
28	Coin Change Problem	L+D	BB + LCD	1	28	7/7/2023
29	Knapsack Problem	L+D	BB + LCD	1	29	8/7/2023
30	Solving Job sequencing with deadlines Problems	L+D	BB + LCD	1	30	10/7/2023
31	Minimum cost spanning trees: Prim's Algorithm	L+D	BB + LCD	1	31	11/7/2023
32	Kruskal's Algorithm with performance analysis	L+D	BB + LCD	1	32	12/7/2023
33	Single source shortest paths: Dijkstra's Algorithm	L+D	BB + LCD	1	33	14/7/2023
34	Optimal Tree problem	L+D	BB + LCD	1	34	17/7/2023

35	Huffman Trees and Codes	L+D	BB+LCD	1	35	18/7/2023
36	Transform and Conquer Approach	L+D	BB+LCD	1	36	19/7/2023
37	Heaps and Heap Sort.	L+D	BB+LCD	1	37	21/7/2023
38	Revision	L+D	BB+LCD	1	38	22/7/2023
39	Revision	L+D	BB+LCD	1	39	24/7/2023
Module- 4: Dynamic Programming						
40	Dynamic Programming: General method with Examples..	L+D	BB+LCD	1	40	25/7/2023
41	Multistage Graphs	L+D	BB+LCD	1	41	26/7/2023
42	Transitive Closure: Warshall's Algorithm	L+D	BB+LCD	1	42	28/7/2023
43	All Pairs Shortest Paths: Floyd's Algorithm.	L+D	BB+LCD	1	43	04/7/2023
IA – 2 (31/7/2023)						
44	Knapsack problem	L+D	BB+LCD	1	44	5/8/2023
45	Bellman-Ford Algorithm	L+D	BB+LCD	1	45	7/8/2023
46	Travelling Sales Person problem	L+D	BB+LCD	1	46	8/8/2023
47	Space-Time Tradeoffs: Introduction, Sorting by Counting	L+D	BB+LCD	1	47	9/8/2023
48	Input Enhancement in String Matching - Harspool's algorithm.	L+D	BB+LCD	1	48	11/8/2023
49	Harspool's algorithm.	L+D	BB+LCD	1	49	14/8/2023
50	Revision	L+D	BB+LCD	1	50	16/8/2023
51	Revision	L+D	BB+LCD	1	51	18/8/2023
Module- 5: Backtracking						
52	Backtracking: General method	L+D	BB+LCD	1	52	19/8/2023
53	Solution using back tracking to N-Queens problem	L+D	BB+LCD	1	53	21/8/2023
54	Sum of subsets problem	L+D	BB+LCD	1	54	22/8/2023
55	Graph coloring	L+D	BB+LCD	1	55	23/8/2023
56	Hamiltonian cycles Problems	L+D	BB+LCD	1	56	25/8/2023
57	Travelling Sales Person problem	L+D	BB+LCD	1	57	28/8/2023
58	0/1 Knapsack problem	L+D	BB+LCD	1	58	29/8/2023
59	NP-Complete and NP-Hard problems: Basic concepts	L+D	BB+LCD	1	59	30/8/2023
60	Non- deterministic algorithms, P	L+D	BB+LCD	1	60	1/9/2023
61	Non- deterministic algorithms NP	L+D	BB+LCD	1	61	2/9/2023
62	NP- Complete, NP-Hard classes	L+D	BB+LCD	1	62	4/9/2023

63	Revision	L+ D	BB + LCD	1	63	5/9/2023
64	Revision	L+ D	BB + LCD	1	64	5/9/2023
IA - 3 (6/9/2023)						

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Introduction						
1	Sort a given set of n integer elements using Selection Sort method and compute its time complexity. Run the program for varied values of n > 5000 and record the time taken to sort. Plot a graph of the time taken versus n. The elements can be read from a file or can be generated using the random number generator. Demonstrate using C++/Java how the brute force method works along with its time complexity analysis: worst case, average case and best case.	L+ D	BB + LCD	3	3	B1: 18/5/2023 B2: 19/5/2023 B3: 22/5/2023
Module - 2: Divide and Conquer						
2	Sort a given set of n integer elements using Quick Sort method and compute its time complexity. Run the program for varied values of n > 5000 and record the time taken to sort. Plot a graph of the time taken versus n. The elements can be read from a file or can be generated using the random number generator. Demonstrate using C++/Java how the divide-and-conquer method works along with its time complexity analysis: worst case, average case and best case.	L+ D	BB + LCD	3	6	B1: 25/5/2023 B2: 26/5/2023 B3: 29/5/2023
3	Sort a given set of n integer elements using Merge Sort method and compute its time complexity. Run the program for varied values of n > 5000, and record	L+ D	BB + LCD	3	9	B1: 1/6/2023 B2: 2/6/2023 B3: 5/6/2023

	the time taken to sort. Plot a graph of the time taken versus n. The elements can be read from a file or can be generated using the random number generator. Demonstrate using C++/Java how the divide-and-conquer method works along with its time complexity analysis: worst case, average case and best case.					
Module- 3: Greedy Method						
4	To solve Knapsack problem using Greedy method	L+D	BB + LCD	3	12	B1: 8/6/2023 B2: 09/6/2023 B3: 12/6/2023
5	To find shortest paths to other vertices from a given vertex in a weighted connected graph, using Dijkstra's algorithm.	L+D	BB + LCD	3	15	B1: 15/6/2023 B2: 16/6/2023 B3: 26/6/2023
6	To find Minimum Cost Spanning Tree of a given connected undirected graph using Kruskal's algorithm. Use Union-Find algorithms in your program	L+D	BB + LCD	3	18	B1: 22/06/2023 B2: 23/6/2023 B3: 3/7/2023
7	To find Minimum Cost Spanning Tree of a given connected undirected graph using Prim's algorithm	L+D	BB + LCD	3	21	B1: 6/7/2023 B2: 30/6/2023 B3: 10/7/2023
Module- 4: Dynamic Programming						
8	Solve All-Pairs Shortest Paths problem using Floyd's algorithm	L+D	BB + LCD	3	24	B1: 13/7/2023 B2: 7/7/2023 B3: 17/7/2023
9	Solve All-Pairs Shortest Paths problem using Floyd's algorithm	L+D	BB + LCD	3	27	B1: 20/7/2023 B2: 14/7/2023 B3: 24/7/2023
10	Solve 0/1 Knapsack problem using Dynamic	L+D	BB + LCD	3	30	B1: 27/7/2023

	Programming method.					B2: 21/7/2023 B3: 5/8/2023
Module- 5 : Backtracking						
11	Design and implement C++/Java Program to find a subset of a given set $S = \{S_1, S_2, \dots, S_n\}$ of n positive integers whose SUM is equal to a given positive integer d . For example, if $S = \{1, 2, 5, 6, 8\}$ and $d = 9$, there are two solutions $\{1, 2, 6\}$ and $\{1, 8\}$. Display a suitable message, if the given problem instance doesn't have a solution.	L+ D	BB + LCD	3	33	B1: 3/8/2023 B2: 28/7/2023 B3: 7/8/2023
12	Design and implement C++/Java Program to find all Hamiltonian Cycles in a connected undirected Graph G of n vertices using backtracking principle.	L+ D	BB + LCD	3	36	B1: 10/8/2023 B2: 4/8/2023 B3: 14/8/2023
13	Revision	L+D	BB + LCD	3	39	B1: 17/8/2023 B1: 24/8/2023 B1: 1/9/2023 B2: 11/8/2023 B2: 18/8/2023 B2: 25/8/2023 B3: 19/8/2023 21/8/2023 28/8/2023 4/9/2023
14	Internal Assessment			3	42	B1: 11/9/2023 B2: 12/9/2023 B3: 13/9/2023

Total Number of Hours for theory - 64 HR

Total Number of Hours for Laboratory - 39 HR

Total Number of Hours for theory and Laboratory- 103 HR

TEXT BOOK:

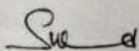
1. Introduction to the Design and Analysis of Algorithms, Anany Levitin: 2nd Edition, 2009. Pearson.
2. Computer Algorithms/C++, Ellis Horowitz, SatrajSahni and Rajasekaran, 2nd Edition, 2014, Universities Press.

REFERENCES:

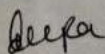
1. Introduction to Algorithms, Thomas H. Cormen, Charles E. Leiserson, Ronal L. Rivest, Clifford Stein, 3rd Edition, PHI.
2. Design and Analysis of Algorithms, S. Sridhar, Oxford (Higher Education)

Details for the teaching Aids

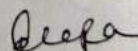
Black Board and LCD



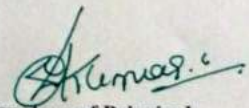
Signature of course In-charge



Signature of Module Coordinator



Signature of HOD



Signature of Principal



K.S.INSTITUTE OF TECHNOLOGY,BENGALURU - 560109

DEPARTMENT OF COMPUTER SCIENCE AND DESIGN ENGINEERING

LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : Surekha Byakod

COURSE CODE/TITLE : 21CS43/Microcontroller And Embedded systems

YEAR/ SEMESTER/SECTION : II/III

BRANCH : Computer Science And Design

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1:ARM Processor Fundamentals:						
1	Microprocessors versus Microcontrollers,	L+D+I	BB, PPT	1	1	17/5/23
2	ARM Embedded Systems:	L+D+I	BB, PPT	1	2	17/5/23
3	The RISC design philosophy,	L+D+I	BB, PPT	1	3	18/5/23
4	The ARM Design Philosophy,	L+D+PS	BB, PPT	1	4	19/5/23
5	Embedded System Hardware Embedded System Software.	L+D+I	BB, PPT	1	5	23/5/23
6	ARM Processor Fundamentals:	L+D+I	BB, PPT	1	6	24/5/23
7	Registers, Current Program Status Register	L+D+I	BB, PPT	1	7	25/5/23

8	Pipeline, Exceptions,	L+D+I	BB, PPT	1	8	26/5/23
9	Interrupts,	L+D+I	BB, PPT	1	9	27/5/23
10	Vector Table, Core Extensions	L+D+I	BB, PPT	1	10	30/5/23
MODULE 2: Introduction to the ARM Instruction Set						
11	Introduction to the ARM Instruction Set:	L+D+I	BB, PPT	1	11	31/5/23
12	Data Processing Instructions , Branch Instructions,	L+D,PS	BB, PPT	1	12	1/6/23
13	Software Interrupt Instructions,	L+D+I	BB, PPT	1	13	2/6/23
14	Program Status Register Instructions, Coprocesor Instructions,		BB, PPT	1	14	6/6/23
15	Loading Constants C Compilers and Optimization :	L+D+I	BB, PPT	1	15	7/6/23
16	Basic C Data Types,	L+D+I	BB, PPT	1	16	8/6/23
17	C Looping Structures, ,	L+D+I	BB, PPT	1	17	9/6/23
18	Register Allocation	L+D+I	BB, PPT	1	18	10/6/23
19	Function,Calls	L+D+I	BB, PPT	1	19	14/6/23
20	Pointer Aliasing	L+D+I	BB, PPT	1	20	15/6/23
MODULE 3 : C Compilers and Optimization						
21	1st Internal				21	20/6/23
22	C Compilers and Optimization Structure Arrangement,	L+D+I	BB, PPT	1	22	22/6/23
23	Bit Fields,Unaligned Data and Endianness, Division	L+D+I	BB, PPT	1	23	23/6/23
24	Division,Floating Point,	L+D+I	BB, PPT	1	24	24/6/23
25	Inline Functions	L+D+I	BB, PPT	1	25	27/6/23
26	Inline Assembly	L+D+I	BB, PPT	1	26	27/6/23
27	Portability Issues ARM programming using Assembly language	L+D+I	BB, PPT	1	27	28/6/23

28	Writing Assembly code,	L+D+I	BB, PPT	1	28	30/6/23
29	Profiling and cycle counting	L+D+I	BB, PPT	1	29	4/7/23
30	Instruction scheduling,	L+D+I	BB, PPT	1	30	5/7/23
31	Register Allocation,	L+D+I	BB, PPT	1	31	6/7/23
32	Conditional Execution	L+D+I	BB, PPT	1	32	7/7/23
33	Looping Constructs	L+D+I	BB, PPT	1	33	8/7/23
MODULE 4: Embedded System Components						
34	Embedded Vs General computing system	L+D+I	BB, PPT	1	34	11/7/23
35	History of embedded systems	L+D+I	BB, PPT	1	35	12/7/23
36	Classification of Embedded systems,			1	36	13/7/23
37	Major applications areas of embedded systems,	L+D+I	BB, PPT	1	37	14/7/23
38	purpose of embedded systems.	L+D+I	BB, PPT	1	38	20/7/23
39	LED, 7 segment LED display,	L+D+I	BB, PPT	1	39	21/7/23
40	Stepper motor,	L+D+I	BB, PPT	1	49	26/7/23
41	Keyboard, Push button switch,	L+D+I	BB, PPT	1	41	27/7/23
42	Communication Interface onboard and external types),	L+D+I	BB, PPT	1		28/7/23
43	2nd Internal				42	1/8/23
44	Embedded firmware, Other system components.	L+D+I	BB, PPT	1	43	2/8/23
45	Operating Systems	L+D+I	BB, PPT	1	44	3/8/23
MODULE 5 : RTOS and IDE for Embedded System Design						
46	Operating System basics, Types of operating systems,	L+D+I	BB, PPT	1	45	4/8/23
47	Task, process and threads (Only POSIX Threads with an example program),	L+D+I	BB, PPT	1	46	8/8/23
48	Thread preemption, Multiprocessing and	L+D+I	BB, PPT	1	47	9/8/23

	Multitasking,					
49	Task Communication (without any program), Task synchronization issues –	L+D+I	BB, PPT	1	48	10/8/23
50	Racing and Deadlock,	L+D+I	BB, PPT	1	49	11/8/23
51	How to choose an RTOS,	L+D+I	BB, PPT	1	50	17/8/23
52	Integration and testing of Embedded hardware and firmware.	L+D+I	BB, PPT	1	51	18/8/23
53	Embedded system Development Environment –	L+D+I	BB, PPT	1	52	19/8/23
54	Block diagram (excluding Keil), Disassembler/decompiler,	L+D+I	BB, PPT	1	53	22/8/23
55	Simulator, emulator and debugging techniques,,	L+D+I	BB, PPT	1	54	23/8/23
56	Target hardware debugging, boundary scan	L+D+I	BB, PPT	1	55	24/8/23
57	Dissembled/decompiler	L+D+I	BB, PPT	1	56	25/8/23
58	Explanation on Debugging Techniques	L+D+I	BB, PPT	1	57	29/8/23
59	Target hardware debugging	L+D+I	BB, PPT	1	58	30/8/23
60	Revision	L+D+I	BB, PPT	1	59	1/8/23
61	Revision	L+D+I	BB, PPT	1	60	2/8/23
62	Revision	L+D+I	BB, PPT	1	61	5/8/23
63	3rd Internals				62	7/8/23

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	Module 1 Using Keil software, observe the various registers, dump, CPSR, with a simple ALP programme.	Instruction and Demonstration	Keil vision LPC:2148	LabSession -2 HR	2	B1:22/5/23 B2:24/5/23 B3:26/5/23
MODULE 2						
1	Module 2 Write a program to find the sum of the first 10 integer numbers.	Instruction and Demonstration	Keil vision LPC:2148	LabSession-2 HR	4	B1:22/5/23 B2:24/5/23 B3:26/5/23
2	Write a program to find the factorial of a number	Instruction and Demonstration	Keil vision LPC:2148	LabSession-2 HR	6	B1:22/5/23 B2:24/5/23 B3:26/5/23
3	Write a program to add an array of 16 bit numbers and store the 32 bit result in internal RAM.	Instruction and Demonstration	Keil vision LPC:2148	LabSession-2 HR	8	B1:29/5/23 B2:31/5/23 B3:2/6/23
4	Write a program to find the square of a number (1 to 10) using a look-up table	Instruction and Demonstration	Keil vision LPC:2148	LabSession-2 HR	10	B1:29/5/23 B2:31/5/23 B3:2/6/23
5	Write a program to find the largest or smallest number in an array of 32 numbers.	Instruction and Demonstration	Keil vision LPC:2148	LabSession-2 HR	12	B1:5/6/23 B2:7/6/23 B3:9/6/23
MODULE 3						
1	Module 3 Write a program to arrange a series of 32 bit numbers in ascending/descending order.	Instruction and Demonstration	Keil vision LPC:2148	LabSession -2 HR	14	B1:5/6/23 B2:7/6/23 B3:9/6/23
2	Write a program to count the number of ones and zeros in two consecutive memory locations.	Instruction and Demonstration	Keil vision LPC:2148	LabSession-2 HR	16	B1:12/6/23 B2:14/6/23 B3:16/6/23
3	Display "Hello World" message using Internal UART.	Instruction and Demonstration	Keil vision LPC:2148 Microcontroller	LabSession-2 HR	18	B1:27/6/23 B2:28/6/23

			KIT			B3:30/6/23
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Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 4						
	LAB INTERNALS				20	B1:4/7/23 B2:5/7/23 B3:7/7/23
1	Interface and Control a DC Motor.	Instruction and Demonstration	Keil vision LPC:2148 Microcontroller KIT DC motor	LabSession -2 HR	22	B1:18/7/23 B2:19/7/23 B3:21/7/23
2	Interface a Stepper motor and rotate it in clockwise and anti-clockwise direction.	Instruction and Demonstration	Keil vision LPC:2148 Microcontroller KIT Stepper Motor	LabSession -2 HR	24	B1:18/7/23 B2:19/7/23 B3:21/7/23
3	3. Determine Digital output for a given Analog input using Internal ADC of ARM controller.	Instruction and Demonstration	Keil vision LPC:2148 Microcontroller KIT Digital CRO	LabSession -2 HR	26	B1:25/7/23 B2:26/7/23 B3:28/7/23
4	4. Interface a DAC and generate Triangular and Square waveforms.	Instruction and Demonstration	Keil vision LPC:2148 Microcontroller KIT Digital CRO	LabSession -2 HR	28	B1:8/8/23 B2:9/8/23 B3:11/8/23
5	5. Interface a 4x4 keyboard and display the key code on an LCD.	Instruction and Demonstration	Keil vision LPC:2148 Microcontroller KIT Flash Magic	LabSession -2 HR	30	B1:16/8/23 B2:18/8/23 B3:19/8/23
6	6. Demonstrate the use of an external interrupt to toggle an LED On/Off.	Instruction and Demonstration	Keil vision LPC:2148 Microcontroller	LabSession -2 HR	32	B1:16/8/23 B2:18/8/23 B3:19/8/23

			KIT Flash Magic			
7	7. Display the Hex digits 0 to F on a 7-segment LED interface, with an appropriate delay in between.	Instruction and Demonstration	Keil vision LPC:2148 Microcontroller KIT Flash Magic	LabSession -2 HR	34	B1:22/8/23 B2:24/8/23 B3:25/8/23
MODULE5						
1	Demonstration of IoT applications by using Arduino and Raspberry Pi	Workshop 0n IoT	Keil vision LPC:2148 Microcontroller KIT Flash Magic	Keil vision LPC:2148 Microcontroller KIT Flash Magic	36	B1:22/8/23 B2:24/8/23 B3:25/8/23
2	Demonstration of IoT applications by using Arduino and Raspberry Pi	Workshop 0n IoT	Keil vision LPC:2148 Microcontroller KIT Flash Magic	Keil vision LPC:2148 Microcontroller KIT Flash Magic	38	B1:29/8/23 B2:30/8/23 B3:1/8/23
	LAB INTERNALS				40	B1:11/8/23 B2:12/8/23 B3:13/8/23

Note - Mention test dates.

Total Number of Hours for theory - 60 HR

Total Number of Hours for Laboratory - 40 HR

Total Number of Hours for theory and Laboratory - 100 HR

Text Books:


1. Andrew N Sloss, Dominic Symes and Chris Wright, ARM system developers guide, Elsevier, Morgan Kaufman publishers, 2008.
2. Shibu K V, "Introduction to Embedded Systems", Tata McGraw Hill Education, Private Limited, 2nd Edition.


Reference Books:

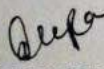
1. Raghunandan. G.H, Microcontroller (ARM) and Embedded System, Cengage learning Publication, 2019
2. The Insider's Guide to the ARM7 Based Microcontrollers, Hitex Ltd., 1st edition, 2005.
3. Steve Furber, ARM System-on-Chip Architecture, Second Edition, Pearson, 2015.
4. Raj Kamal, Embedded System, Tata McGraw-Hill Publishers, 2nd Edition, 2008. 4. David A. Bell, Electronic Devices and Circuits, 5th Edition, Oxford University Press, 2008

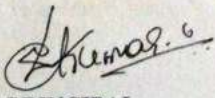
Details for the teaching Aids

Keil vision
LPC:2148
Microcontroller KIT DC motor


Course Incharge


Module Coordinator


HOD-CSD


PRINCIPAL

**K S INSTITUTE OF TECHNOLOGY BENGALURU
DEPARTMENT OF COMPUTER SCIENCE & DESIGN**



LESSON PLAN

NAME OF THE STAFF: **Prof. S Subhash Kumar & Dr. Deepa S R**

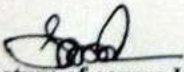
SUBJECT CODE/NAME: **21CSL46/Python Programming Laboratory (PPL)**

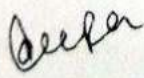
SEMESTER/YEAR/SEC: **IV/III/A**

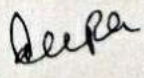
ACADEMIC YEAR : **2022-2023**

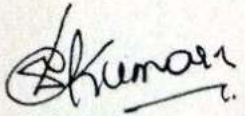
Sl. No.	Topic to be covered	Teaching Aid	Proposed Date
1	a) Write a python program to find the best of two test average marks out of three tests' marks accepted from the user. b) Develop a Python program to check whether a given number is palindrome or not and also count the number of occurrences of each digit in the input number.	Projector and Board	B1: 29/05/23 B2: 01/06/23 B3: 02/06/23
2	a) Defined as a function F as $F_n = F_{n-1} + F_{n-2}$. Write a Python program which accepts a value for N (where $N > 0$) as input and pass this value to the function. Display suitable error message if the condition for input value is not followed. b) Develop a python program to convert binary to decimal, octal to hexadecimal using functions.	Projector and Board	B1: 05/06/23 B2: 08/06/23 B3: 09/06/23
3	a) Write a Python program that accepts a sentence and find the number of words, digits uppercase letters and lowercase letters. b) Write a Python program to find the string similarity between two given strings	Projector and Board	B1: 12/06/23 B2: 15/06/23 B3: 16/06/23
4	a) Write a python program to implement insertion sort and merge sort using lists b) Write a program to convert roman numbers in to integer values using dictionaries.	Projector and Board	B1: 19/06/23 B2: 22/06/23 B3: 23/06/23
5	LAB TEST -1		B1: 03/07/23 B2: 06/07/23 B3: 07/07/23

6	a) Write a function called isphonenumber () to recognize a pattern 415-555-4242 without using regular expression and also write the code to recognize the same pattern using regular expression. b) Develop a python program that could search the text in a file for phone numbers (+919900889977) and email addresses (sample@gmail.com)	Projector and Board	B1: 10/07/23 B2: 13/07/23 B3: 14/07/23
7	a) Write a python program to accept a file name from the user and perform the following operations 1. Display the first N line of the file 2. Find the frequency of occurrence of the word accepted from the user in the file b) Write a python program to create a ZIP file of a particular folder which contains several files inside it.	Projector and Board	B1: 10/07/23 B2: 20/07/23 B3: 21/07/23
8	a) By using the concept of inheritance write a python program to find the area of triangle, circle and rectangle. b) Write a python program by creating a class called Employee to store the details of Name, Employee_ID, Department and Salary, and implement a method to update salary of employees belonging to a given department.	Projector and Board	B1: 24/07/23 B2: 27/07/23 B3: 28/07/23
9	Write a python program to find the whether the given input is palindrome or not (for both string and integer) using the concept of polymorphism and inheritance	Projector and Board	B1: 31/07/23 B2: 03/08/23 B3: 04/08/23
10	a) Write a python program to download the all XKCD comics b) Demonstrate python program to read the data from the spreadsheet and write the data in to the spreadsheet	Projector and Board	B1: 07/08/23 B2: 10/08/23 B3: 11/08/23
11	a) Write a python program to combine select pages from many PDFs b) Write a python program to fetch current weather data from the JSON file	Projector and Board	B1: 10/08/23 B2: 12/08/23 B3: 14/08/23
12	LAB TEST-2		B1: 21/09/23 B2: 22/09/23 B3: 23/09/23


Signature of course In charge


Signature of Module Coordinator


Signature of HOD


Principal



KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

NAME OF THE STAFF : Mr. SANJOY DAS

SUBJECT CODE/NAME : 18CS33/ ANALOG AND DIGITAL ELECTRONICS

SEMESTER/YEAR : III A/ II

ACADEMIC YEAR : 2021-2022

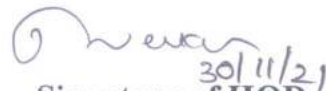
Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	Photodiodes	L+D	BB	1	1	19/10/2021
2	Light Emitting Diodes and Optocouplers	L+ D	BB	1	2	21/10/2021
3	Fixed bias ,Collector to base Bias, voltage divider bias	L+ D	BB	1	3	22/10/2021
4	Integrated Circuit(IC) Multivibrator	L+D	BB	1	4	23/10/2021
5	Peak Detector Circuit and Schmitt Trigger	L+D	BB	1	5	23/10/2021
6	Comparator and Active Filters	L+D	BB	1	6	26/10/2021
7	Non-Linear Amplifiers and Relaxation Oscillator	L+D	BB	1	7	27/10/2021
8	Current-To-Voltage and Voltage-To-Current Converter	L+D	BB	1	8	28/10/2021
9	Power Supply Parameters and voltage regulator	L+D	BB	1	9	30/10/2021
10	D to A and A to D converter	L+D	BB	1	10	02/11/2021
MODULE 2						
11	Basic Logic gates, Positive and Negative Logic	L+ D	BB	1	11	04/11/2021
12	Sum-of-Products Method	L+D	BB	1	12	09/11/2021
13	Truth Table to Karnaugh Map, Pairs Quads and Octets	L+D	BB	1	13	10/11/2021
14	Karnaugh Simplifications and Don't-care Conditions	L+D	BB	1	14	10/11/2021

15	Product-of-sums Method	L+D	BB	1	15	16/11/2021
16	Product-of Sums simplifications	L+D	BB	1	16	17/11/2021
17	Quine-McClusky Method	L+D	BB	1	17	17/11/2021
18	Simplification by Quine-McClusky Method	L+D	BB	1	18	18/11/2021
19	Petricks method	L+D	BB	1	19	23/11/2021
20	Simplification using map-entered variables	L+D	BB	1	20	24/11/2021
MODULE 3						
21	Review of Combinational circuit design	L+D	BB	1	21	24/11/2021
22	Gate delays and Timing diagrams	L+D	BB	1	22	25/11/2021
23	Hazards in combinational Logic	L+D	BB	1	23	27/11/2021
24	Simulation and testing of logic circuits	L+D	BB	1	24	30/11/2021
25	Multiplexers	L+D	BB	1	25	01/12/2021
26	1-of-16 Decoder and BCD to Decimal Decoders	L+D	BB	1	26	01/12/2021
27	Seven Segment Decoders and Encoders	L+D	BB	1	27	02/12/2021
28	Exclusive-OR Gates, Parity Generators and Checkers	L+D	BB	1	28	03/12/2021
29	Programmable Logic Arrays	L+D	BB	1	29	07/12/2021
30	Programmable Array Logic.	L+D	BB	1	30	08/12/2021
MODULE 4						
31	Set Reset Latch, Gated Latches	L+D	BB	1	31	08/12/2021
32	D flip-flop and SR flip-flop	L+D	BB	1	32	14/12/2021
33	JK flip-flop and JK Master-slave flip-flop	L+D	BB	1	33	14/12/2021
34	Switch Contact Bounce Circuits and Various Flip-Flops	L+D	BB	1	34	15/12/2021
35	VHDL Module	L+D	BB	1	35	21/12/2021
36	VHDL description of combinational circuits	L+D	BB	1	36	22/12/2021
37	VHDL Modules for multiplexer	L+D	BB	1	37	22/12/2021
38	VHDL Implementation of D-Flip-Flops	L+D	BB	1	38	23/12/2021
39	VHDL Implementation of JK-Flip-Flops	L+D	BB	1	39	28/12/2021
40	Asynchronous Counters and Decoding Gates	L+D	BB	1	40	29/12/2021
MODULE 5						

41	Shift registers	L+D	BB	1	41	29/12/2021
42	Serial In - Serial Out, Serial In -Parallel out Registers	L+D	BB	1	42	30/12/2021
43	Parallel In - Serial Out, Parallel In - Parallel Out Registers	L+D	BB	1	43	04/01/2022
44	Parallel Adder with accumulator	L+D	BB	1	44	04/01/2022
45	Design of Binary counters	L+D	BB	1	45	05/01/2022
46	Counter Design as a Synthesis problem	L+D	BB	1	46	05/01/2022
47	A Digital Clock	L+D	BB	1	47	06/01/2022
48	Synchronous Counters and Changing the Counter Modulus	L+D	BB	1	48	11/01/2022
49	Sequential parity checker	L+D	BB	1	49	12/01/2022
50	State tables and graphs	L+D	BB	1	50	13/01/2022
51	Revision	L+D	BB	1	51	17/01/2022
52	Revision	L+D	BB	1	52	18/01/2022



Signature of faculty



Signature of HOD

Head of the Department
 Dept. of Computer Science & Engg
 K.S. Institute of Technology
 Bengaluru -560 109



Signature of Principal

PRINCIPAL
 K.S. INSTITUTE OF TECHNOLOGY
 BENGALURU - 560 109.



KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

NAME OF THE STAFF : Mr. Roopesh Kumar B N

SUBJECT CODE/NAME : 21CS34/ COMPUTER ORGANIZATION & ARCHITECTURE

SEMESTER/YEAR/SEC : III / II/ A

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	Basic Operational Concepts	L+I	LCD	1	1	2/11/2022
2	Bus Structures	L+I	LCD	1	2	3/11/2022
3	Performance	L+I	LCD	1	3	4/11/2022
4	Memory Location	L+I	LCD	1	4	8/11/2022
5	Memory Operations	L+I	LCD	1	5	9/11/2022
6	Instruction Sequencing	L+I	LCD	1	6	10/11/2022
7	Instruction Sequencing	L+I	LCD	1	7	12/11/2022
8	Addressing Modes	L+I	LCD	1	8	15/11/2022
MODULE 2						
9	Accessing I/O Devices	L+I	LCD	1	9	16/11/2022
10	Interrupts	L+I	LCD	1	10	17/11/2022
11	DMA	L+I	LCD	1	11	18/11/2022
12	BUSES	L+I	LCD	1	12	22/11/2022
13	Interface Circuits	L+I	LCD	1	13	23/11/2022

14	Interface Circuits	L+I	LCD	1	14	24/11/2022
15	Interface Circuits	L+I	LCD	1	15	25/11/2022
16	Interface Circuits	L+I	LCD	1	16	26/11/2022
MODULE 3						
17	Memory System	L+I	LCD	1	17	1/12/2022
18	RAM	L+I	LCD	1	18	2/12/2022
19	Read Only Memories	L+I	LCD	1	19	6/12/2022
20	Speed, Size, and Cost	L+I	LCD	1	20	8/12/2022
21	Cache Memories	L+I	LCD	1	21	13/12/2022
22	Mapping Functions	L+I	LCD	1	22	17/12/2022
23	Virtual memories	L+I	LCD	1	23	18/12/2022
24	Virtual memories	L+I	LCD	1	24	19/12/2022
MODULE 4						
25	Numbers	L+I	LCD	1	25	3/1/2023
26	Signed Numbers	L+I	LCD	1	26	4/1/2023
27	Design of Fast Adders	L+I	LCD	1	27	5/1/2023
28	Multiplication	L+I	LCD	1	28	12/1/2023
29	Execution of a Complete Instruction	L+I	LCD	1	29	13/1/2023
30	Hardwired control	L+I	LCD	1	30	17/1/2023
31	Microprogrammed control	L+I	LCD	1	31	18/1/2023
32	Microprogrammed control	L+I	LCD	1	32	25/1/2023
MODULE 5						
33	Parallel Processing	L+I	LCD	1	33	20/06/2022
34	Parallel Processing	L+I	LCD	1	34	27/06/2022
35	Pipelining,	L+I	LCD	1	35	27/06/2022
36	Arithmetic Pipeline	L+I	LCD	1	36	27/06/2022
37	Instruction Pipeline	L+I	LCD	1	37	27/06/2022
38	Instruction Pipeline	L+I	LCD	1	38	28/06/2022
39	Vector Processing	L+I	LCD	1	39	28/06/2022
40	Array Processors	L+I	LCD	1	40	28/06/2022
I INTERNALS						15/12/2022
II INTERNALS						11/01/2023
III INTERNALS						29/03/2023

1.	Text Books: 1. Carl Hamacher, Zvonko Vranesic, Safwat Zaky, Computer Organization, 5th Edition, Tata McGraw Hill 2. M. Morris Mano, Computer System Architecture, PHI, 3rd Edition
2.	Reference Books: 1. William Stallings: Computer Organization & Architecture, 9th Edition, Pearson
3.	Useful Websites: 1. https://nptel.ac.in/courses/106/103/106103068/ 2. https://nptel.ac.in/content/storage2/courses/106103068/pdf/coa.pdf 3. https://nptel.ac.in/courses/106/105/106105163/ 4. https://nptel.ac.in/courses/106/106/106106092/ 5. https://nptel.ac.in/courses/106/106/106106166/

PS R N

COURSE-INCHARGE

N. Venkatesh

Signature of HOD

*Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109*



KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

NAME OF THE STAFF : Mr. Roopesh Kumar B N

SUBJECT CODE/NAME : 21CS34/ COMPUTER ORGANIZATION & ARCHITECTURE

SEMESTER/YEAR/SEC : III / II/ **B**

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	Basic Operational Concepts	L+I	LCD	1	1	2/11/2022
2	Bus Structures	L+I	LCD	1	2	3/11/2022
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4	Memory Location	L+I	LCD	1	4	8/11/2022
5	Memory Operations	L+I	LCD	1	5	9/11/2022
6	Instruction Sequencing	L+I	LCD	1	6	10/11/2022
7	Instruction Sequencing	L+I	LCD	1	7	12/11/2022
8	Addressing Modes	L+I	LCD	1	8	15/11/2022
MODULE 2						
9	Accessing I/O Devices	L+I	LCD	1	9	16/11/2022
10	Interrupts	L+I	LCD	1	10	17/11/2022
11	DMA	L+I	LCD	1	11	18/11/2022
12	BUSES	L+I	LCD	1	12	22/11/2022
13	Interface Circuits	L+I	LCD	1	13	23/11/2022

14	Interface Circuits	L+I	LCD	1	14	24/11/2022
15	Interface Circuits	L+I	LCD	1	15	25/11/2022
16	Interface Circuits	L+I	LCD	1	16	26/11/2022
MODULE 3						
17	Memory System	L+I	LCD	1	17	1/12/2022
18	RAM	L+I	LCD	1	18	2/12/2022
19	Read Only Memories	L+I	LCD	1	19	6/12/2022
20	Speed, Size, and Cost	L+I	LCD	1	20	8/12/2022
21	Cache Memories	L+I	LCD	1	21	13/12/2022
22	Mapping Functions	L+I	LCD	1	22	17/12/2022
23	Virtual memories	L+I	LCD	1	23	18/12/2022
24	Virtual memories	L+I	LCD	1	24	19/12/2022
MODULE 4						
25	Numbers	L+I	LCD	1	25	3/1/2023
26	Signed Numbers	L+I	LCD	1	26	4/1/2023
27	Design of Fast Adders	L+I	LCD	1	27	5/1/2023
28	Multiplication	L+I	LCD	1	28	12/1/2023
29	Execution of a Complete Instruction	L+I	LCD	1	29	13/1/2023
30	Hardwired control	L+I	LCD	1	30	17/1/2023
31	Microprogrammed control	L+I	LCD	1	31	18/1/2023
32	Microprogrammed control	L+I	LCD	1	32	25/1/2023
MODULE 5						
33	Parallel Processing	L+I	LCD	1	33	20/06/2022
34	Parallel Processing	L+I	LCD	1	34	27/06/2022
35	Pipelining,	L+I	LCD	1	35	27/06/2022
36	Arithmetic Pipeline	L+I	LCD	1	36	27/06/2022
37	Instruction Pipeline	L+I	LCD	1	37	27/06/2022
38	Instruction Pipeline	L+I	LCD	1	38	28/06/2022
39	Vector Processing	L+I	LCD	1	39	28/06/2022
40	Array Processors	L+I	LCD	1	40	28/06/2022
I INTERNALS						15/12/2022
II INTERNALS						11/01/2023
III INTERNALS						29/03/2023

1.	Text Books: 1. Carl Hamacher, Zvonko Vranesic, Safwat Zaky, Computer Organization, 5th Edition, Tata McGraw Hill 2. M. Morris Mano, Computer System Architecture, PHI, 3rd Edition
2.	Reference Books: 1. William Stallings: Computer Organization & Architecture, 9th Edition, Pearson
3.	Useful Websites: 1. https://nptel.ac.in/courses/106/103/106103068/ 2. https://nptel.ac.in/content/storage2/courses/106103068/pdf/coa.pdf 3. https://nptel.ac.in/courses/106/105/106105163/ 4. https://nptel.ac.in/courses/106/106/106106092/ 5. https://nptel.ac.in/courses/106/106/106106166/

R. R. N.

COURSE-INCHARGE

[Handwritten Signature]

Signature of HOD

*Head of the Department
Dept. of Computer Science & Engg.
K.S. Institute of Technology
Bengaluru -560 109*



**K S INSTITUTE OF TECHNOLOGY
BENGALURU**

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

NAME OF THE STAFF : Mrs. Supreetha Ganesh

SUBJECT CODE/NAME : 18CS51/ Management and Entrepreneurship For It Industry

SEMESTER/YEAR/SEC : V SEM A and B Section/ III

ACADEMIC YEAR : 2022-2023


Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Introduction						
1	Meaning, nature and characteristics of management	L+D	BB+LCD	1	1	10-10-2022
2	Scope and Functional areas of management	L+ D	BB+LCD	1	2	12-10-2022
3	Goals of management, Levels of Management	L+ D	BB+LCD	1	3	13-10-2022
4	Brief Overview of Evolution of Management	L+D	BB+LCD	1	4	14-10-2022
5	Planning - Nature, Importance	L+D	BB+LCD	1	5	17-10-2022
6	Types of Plans	L+D	BB+LCD	1	6	19-10-2022
7	Steps in Planning	L+D	BB+LCD	1	7	20-10-2022
8	Organizing - nature and purpose	L+D	BB+LCD	1	8	21-10-2022
9	Types of organization	L+D	BB+LCD	1	9	24-10-2022
10	Staffing: Meaning, Process of Recruitment and Selection	L+D.	BB+LCD	1	10	26-10-2022
MODULE 2: Directing and Controlling						
11	Meaning and Nature of Directing	L+D	BB+LCD	1	11	29-10-2022
12	Leadership Styles	L+ D	BB+LCD	1	12	31-10-2022
13	Motivation Theories	L+ D	LCD	1	13	03-11-2022
14	Communication - Meaning and Importance , Coordination - Meaning and Importance	L+ D	LCD	1	15	04-11-2022

FIRST INTERNALS						
15	Controlling-Meaning	L+ D	LCD	1	16	10-11-2022
16	Steps in Controlling	L+ D	LCD	1	17	12-11-2022
17	Methods of establishing control	L+ D	LCD	1	18	14-11-2022
18	Group Discussion	L+ D	LCD	1	19	16-11-2022
MODULE 3: Entrepreneur						
19	Meaning of Entrepreneur, Characteristics of Entrepreneur	L+ D	LCD	1	21	17-11-2022
20	Classification and types of entrepreneur	L+ D	LCD	1	22	18-11-2022
21	Various Stages of entrepreneurial process	L+ D	LCD	1	23	21-11-2022
22	Role of entrepreneurs in economic development	L+ D	LCD	1	24	23-11-2022
23	Entrepreneurship in India, Barriers to Entrepreneurship	L+ D	LCD	1	25	24-11-2022
24	Identification of business opportunities	L+ D	LCD	1	26	25-11-2022
25	Market Feasibility Study	L+ D	LCD	1	27	25-11-2022
26	Technical Feasibility Study	L+ D	LCD	1	28	26-11-2022
27	Financial Feasibility Study	L+ D	LCD	1	29	28-11-2022
28	Social Feasibility Study	L+ D	LCD	1	30	30-11-2022
MODULE 4: Preparation of project and ERP						
29	Meaning of Project	L+ D	LCD	1	31	01-12-2022
30	Project Identification, Project Selection	L+ D	LCD	1	32	02-12-2022
31	Project Report, Need and Significance of Report	L+ D	LCD	1	33	05-12-2022
32	Contents, Formulation	L+ D	LCD	1	34	07-12-2022
33	Guidelines by planning commission for project report	L+ D	LCD	1	35	08-12-2022
SECOND INTERNALS						
34	Enterprise Resource Planning: Meaning and Importance	L+ D	LCD	1	36	15-12-2022
35	ERP and Functional Areas of Management - Marketing	L+ D	LCD	1	38	16-12-2022
36	Sales - Supply Chain Management	L+ D	LCD	1	39	19-12-2022
37	Finance and Accounting	L+ D	LCD	1	40	21-12-2022
38	Human Resources	L+ D	LCD	1	41	22-12-2022
39	Types of reports and methods of report generation	L+ D	LCD	1	42	23-12-2022

MODULE 5: Micro and Small Enterprises						
40	Definition of micro and small enterprises	L+ D	LCD	1	43	24-12-2022
41	Characteristics and Advantages of Micro and Small Enterprises	L+ D	LCD	1	44	26-12-2022
42	Steps in establishing micro and small enterprises	L+ D	LCD	1	45	28-12-2022
43	Government of India industrial policy 2007 on micro and small enterprises	L+ D	LCD	1	46	29-12-2022
44	Case study (Microsoft), Case study(Captain G R Gopinath)	L+ D	LCD	1	47	30-12-2022
45	Case study (N R Narayana Murthy & Infosys)	L+ D	LCD	1	48	02-01-2023
46	Institutional support: MSME-DI, NSIC	L+ D	LCD	1	49	04-01-2023
47	Introduction to IPR	L+ D	LCD	1	50	05-01-2023
48	SIDBI, KIADB, KSSIDC, TECSOK	L+ D	LCD	1	51	06-01-2023
49	KSFC, DIC and District level single window agency	L+ D	LCD	1	52	07-01-2023
50	Case Studies (pedagogical Activity)	L+ D	LCD	1	53	09-01-2023
51	REVISION	L+ D	LCD	1	54	10-01-2023
THIRD INTERNALS						
52	Discussion of Previous Question Papers	L+ D	LCD	1	55	16-01-2023


Signature of course In-charge


Signature of Module Coordinator


Signature of HOD
Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109



KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME OF THE STAFF : Mrs. PALLAVI R

SUBJECT CODE/NAME : 18CS52/ COMPUTER NETWORKS AND SECURITY

SEMESTER/YEAR : V B

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: Application Layer						
1	Network Application Architectures	L+D	LCD+BB	1	1	10/10/23
2	Processes Communicating, Transport Services Available to Applications	L+D	LCD+BB	1	2	10/10/23
3	Transport Services Provided by the Internet, Application-Layer Protocols	L+D	LCD+BB	1	3	11/10/23
4	The Web and HTTP: Overview of HTTP, Non-persistent and Persistent Connections	L+D	LCD+BB	2	5	12/10/23 13/10/23
5	HTTP Message Format, User-Server Interaction: Cookies, Web Caching, The Conditional GET, File Transfer	L+D	LCD+BB	3	8	14/10/23 17/10/23 18/10/23
6	FTP Commands & Replies, Electronic Mail in the Internet: SMTP Comparison with HTTP	L+D	LCD+BB	1	9	19/10/23
7	Mail Message Format, Mail Access Protocols, DNS; The Internet's Directory	L+D	LCD+BB	1	10	19/10/23
8	Services Provided by DNS, Overview of How DNS Works, DNS Records and Messages	L+D	LCD+BB	2	12	20/10/23 27/10/23
9	Peer-to-Peer Applications: P2P File Distribution, Distributed Hash Tables,	L+D	LCD+BB	2	14	29/10/23

10	Socket Programming: creating Network Applications: Socket Programming with UDP, Socket Programming with TCP.	L+D	LCD	1	15	2//11/23
MODULE 2: NETWORK LAYER						
11	What's Inside a Router?: Input Processing, Switching	L+D	LCD+BB	1	16	3/11/23
12	Routing control plane Output Processing, Where Does Queuing Occur?	L+D	LCD+BB	1	17	7/11/23
13	IPv6	L+ D	LCD+BB	1	18	8/11/23
14	A Brief foray into IP Security, Routing Algorithms, The Link-State (LS) Routing Algorithm,	L+D+PS	BB	2	20	9/11/23 10/11/23
IA-1 (14/11/23)						
15	The Distance-Vector (DV) Routing Algorithm	PS	BB	2	23	24/11/23 26/11/23
16	Hierarchical Routing, Routing in the Internet, RIP	L+ D	LCD+BB	1	24	28/11/23
17	OSPF, Inter/AS Routing	L+D	LCD+BB	1	25	29/11/23
18	BGP, Broadcast Routing Algorithms, Multicast.	L+D	LCD+BB	1	26	5/12/23
MODULE 3: NETWORK SECURITY						
19	Overview of Network Security, Elements of Network Security	L+ D	LCD+BB	1	27	5/12/23
20	Classification of Network Attacks, Security Methods	L+D	LCD+BB	1	28	6/12/23
21	Symmetric-Key Cryptography : Data Encryption Standard (DES), Advanced Encryption Standard (AES)	L+D	LCD+BB	1	29	7/12/23
22	Public-Key Cryptography : RSA Algorithm	PS	BB	1	30	8/12/23 9/12/23
23	Diffie-Hellman Key-Exchange Protocol	PS	BB	1	31	12/12/23 13/12/23
24	Authentication, Hash Function , Secure Hash Algorithm	L+ D	LCD+BB	1	32	14/12/23
25	Digital Signatures , Firewalls Digital Signatures , Firewalls	L+D	LCD+BB	1	33	15/12/23
MODULE 4: MULTIMEDIA NETWORKING						
26	Properties of video, properties of Audio	L+ D	LCD+BB	1	34	19/11/23
27	Types of multimedia Network Applications	L+ D	LCD+BB	1	35	20/11/23

IA-2 (22/12/2023)						
28	Streaming stored video: UDP Streaming, HTTP Streaming, Adaptive streaming	L+ D	LCD+BB	1	36	26/12/23
29	DASH, content distribution Networks	L+ D	LCD+BB	1	37	26/12/23
30	Voice-over-IP: Limitations of the Best-Effort IP Service	L+ D	LCD+BB	1	38	27/12/23
31	Removing Jitter at the Receiver for Audio, Recovering from Packet Loss Protocols	L+ D	LCD+BB	1	39	28/12/23
32	Real-Time Conversational Applications, RTP , SIP	L+ D	LCD+BB	1	40	29/12/23
MODULE 5: TRANSPORT LAYER						
33	Transport-Layer Services: Relationship Between Transport and Network Layers, Multiplexing and De multiplexing	L+ D	LCD+BB	1	41	31/1/23
34	Overview of the Transport Layer in the Internet, UDP Segment Structure	L+ D	LCD+BB	1	42	4/1/23
35	UDP Checksum	PS	LCD+BB	1	43	4/1/23
36	Principles of Reliable Data Transfer: Building a Reliable Data Transfer Protocol	L+ D+PS	LCD+BB	1	44	5/1/23
37	Pipelined Reliable Data Transfer Protocols, Go-Back-N, Selective repeat	L+ D+PS	LCD+BB	1	45	9/1/23
38	Connection-Oriented Transport TCP: The TCP Connection, TCP Segment Structure	L+ D	LCD+BB	1	46	10/1/23
39	Flow Control, TCP Connection Management	L+ D	LCD+BB	1	47	11/1/23
40	Principles of Congestion Control, Approaches to Congestion Control	L+ D	LCD+BB	1	48	11/1/23
41	Network-assisted congestion-control example	L+ D	LCD+BB	1	49	12/1/23
42	ATM ABR Congestion control, TCP Congestion Control: Fairness	L+ D	LCD+BB	1	50	16/1/23
IA-3 (18/1/23)						

Text Books:

1. James F Kurose and Keith W Ross, Computer Networking, A Top-Down Approach, Sixth edition Pearson, 2017.
2. Nader F Mir, Computer and Communication Networks, 2nd Edition, Pearson, 2014.

Reference Books, Web reference:

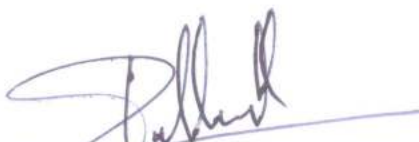
1. Behrouz A Forouzan, Data and Communications and Networking, Fifth Edition, McGraw Hill, Indian Edition
2. Larry L Peterson and Bruce S Davie, Computer Networks, fifth edition, ELSEVIER
3. Andrew S Tanenbaum, Computer Networks, fifth edition, Pearson
4. Mayank Dave, Computer Networks, Second edition, Cengage Learning


Web Materials:


1. <https://nptel.ac.in/courses/106105183>
2. <https://nptel.ac.in/courses/106105162>
3. <https://nptel.ac.in/courses/106105031>
4. <https://nptel.ac.in/courses/106106091>

Details for the teaching Aids

Black Board and LCD


Signature of Course In-Charge


Signature of Module Coordinator


Signature of HOD-CSE
Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : Rashmi H
COURSE CODE/TITLE : 18CS53/Database Management System
YEAR/ SEMESTER/SECTION : III/V/B
BRANCH : Computer Science & Engineering

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: Introduction to Databases						
1	Introduction: Characteristics of database approach, Advantages of using the DBMS approach.	L+D	LCD	1	1	10/10/2022
2	History of database applications. Overview of Database Languages and Architectures:	L+D	LCD	2	3	12/10/2022
3	Data Models, Schemas, and Instances. .	L+D	LCD	1	4	14/10/2022
4	Three schema architecture and data independence	L+D	LCD	2	6	15/10/2022
5	Database languages and interfaces, The Database System environment.	L+D	LCD	1	7	17/10/2022
6	Conceptual Data Modeling using Entities and Relationships: Entity types, Entity sets	L+D	LCD	2	9	19/10/2022
7	Attributes, roles, and structural constraints.	L+D	LCD	1	10	21/10/2022
Module 2: Relational Model						
8	Relational Model Concepts, Relational Model Constraints and relational database schemas.	L+D	LCD	1	11	28/10/2022
9	Update operations, transactions, and dealing with constraint violations	L+D	LCD	1	12	29/10/2022
10	Relational Algebra: Unary and Binary relational	L+D	LCD	1	13	31/10/2022

	operations. Additional relational operations (aggregate, grouping, etc.)					
11	Examples of Queries in relational algebra.	L+D	LCD	2	15	2/11/2022
12	Revision	L+D	LCD	1	16	4/11/2022
13	Mapping Conceptual Design into a Logical Design: Relational Database Design using ER-to-Relational mapping.	L+D	LCD	2	18	12/11/2022
14	SQL: SQL data definition and data types, specifying constraints in SQL.	L+D	LCD	1	19	14/11/2022
15	Retrieval queries in SQL, INSERT, DELETE, and UPDATE statements in SQL, Additional features of SQL.	L+D	LCD	2	21	16/11/2022
Module 3: SQL						
16	Advances Queries: More complex SQL retrieval queries.	L+D	LCD	1	22	18/11/2022
17	Specifying constraints as assertions and action triggers.	L+D	LCD	1	23	21/11/2022
18	Views in SQL, Schema change statements in SQL.	L+D	LCD	2	25	23/11/2022
19	Database Application Development: Accessing databases from applications.	L+D	LCD	1	26	25/11/2022
20	An introduction to JDBC, JDBC classes and interfaces, SQLJ, Stored procedures..	L+D	LCD	1	27	26/11/2022
21	Case study: The internet Bookshop.	L+D	LCD	1	28	28/11/02022
22	Internet Applications: The three-Tier application architecture	L+D	LCD	2	30	30/11/2022
23	The presentation layer, The Middle Tier.	L+D	LCD	1	31	2/12/2022
Module 4: Normalization						
24	Database Design Theory – Introduction to Normalization using Functional and Multivalued Dependencies: Informal design guidelines for relation schema.	L+D	LCD	1	32	5/12/2022
25	Functional Dependencies, Normal Forms based on Primary Keys, Second and Third Normal Forms.	L+D	LCD	2	35	7/12/2022
26	Revision	L+D	LCD	1	36	9/12/2022
27	Boyce-Codd Normal Form, Multivalued Dependency and Fourth Normal Form.	L+D	LCD	1	37	16/12/2022

	Dependency and Fourth Normal Form.					
28	Join Dependencies and Fifth Normal,	L+D	LCD	1	38	19/12/2022
29	Form Normalization Algorithms: Inference Rules, Equivalence, and Minimal Cover,.	L+D	LCD	1	39	21/12/2022
30	Properties of Relational Decompositions, Algorithms for Relational Database Schema Design	L+D	LCD	1	40	23/12/2022
31	Nulls, Dangling tuples, and alternate Relational Designs, ,	L+D	LCD	1	41	26/12/2022
32	Further discussion of Multivalued dependencies and 4NF, Other dependencies and Normal Forms	L+D	LCD	2	43	28/12/2022
Module 5: Transaction Processing						
33	Introduction to Transaction Processing, Transaction and System concepts, Desirable properties of Transactions,	L+D	LCD	1	44	30/12/2022
34	Characterizing schedules based on recoverability. Characterizing schedules based on Serializability. Transaction support in SQL	L+D	LCD	1	45	2/1/2023
35	Concurrency Control in Databases: Two-phase locking techniques for Concurrency control, Concurrency control based on Timestamp ordering.	L+D	LCD	2	47	4/1/2023
36	Multiversion Concurrency control techniques. Validation Concurrency control techniques.	L+D	LCD	1	48	6/1/2023
37	Granularity of Data items and Multiple Granularity Locking. Introduction to Database Recovery Protocols: Recovery Concepts.	L+D	LCD	2	50	7/1/2023
38	NO-UNDO/REDO recovery based on Deferred update, Recovery techniques based on immediate update Shadow paging, Database backup and recovery from catastrophic failures	L+D	LCD	1	51	9/1/2023
39	Revision	L+D	LCD	1	52	16/1/2023
40	Revision	L+D	LCD	1	53	17/1/2023

Total No. of Lecture Hours = 53

Total No. of Revision Hours = 4

Text Books: 1. Fundamentals of Database Systems, Ramez Elmasri and Shamkant B. Navathe, 7th Edition, 2017, Pearson.

2. Database management systems, Ramakrishnan, and Gehrke, 3rd Edition, 2014, McGraw Hill.

Reference Books: 1. Silberschatz Korth and Sudharshan, Database System Concepts, 6th Edition, Mc-GrawHill, 2013.

2. Coronel, Morris, and Rob, Database Principles Fundamentals of Design, Implementation and Management, Cengage Learning 2012.

RASHMI.H Rashmi.H.

Name & Signature of Faculty

Kumar. K. Chir. K.

Name & Signature of Module Coordinator



HOD CSE

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K.S. INSTITUTE OF TECHNOLOGY, BENGALURU- 560109
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME OF THE STAFF : Prof. Kavya M S
 SUBJECT CODE/NAME : 18CS54/AUTOMATA THEORY AND COMPUTABILITY
 SEMESTER/SEC/YEAR : V / B / III
 ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Why study the Theory of Computation, Languages and Strings						
1	Why study the Theory of Computation, Languages and Strings:	L+D	BB+LCD	1	1	10-10-2022
2	Strings, Languages. A Language Hierarchy, Computation,	L+ D	BB+LCD	1	2	11-10-2022
3	Finite State Machines (FSM): Deterministic FSM, Regular languages, Designing FSM,	L+ D	BB+LCD	1	3	12-10-2022
4	Nondeterministic FSMs, From FSMs to Operational Systems,	L+D	BB	1	4	13-10-2022
5	Simulators for FSMs,	L+ D	BB	1	5	17-10-2022
6	Minimizing FSMs, Canonical form of Regular languages,	L+D	BB	1	6	18-10-2022
7	Finite State Transducers,	L+D	BB	1	7	19-10-2022
8	Bidirectional Transducers	L+ D	BB	1	8	20-10-2022
MODULE 2: Regular Expressions (RE)						
9	what is a RE?, Kleene's theorem,	L+D	BB	1	9	27-10-2022
10	Applications of REs,	L+ D	BB	1	10	29-10-2022

11	Manipulating and Simplifying REs.	L+D	BB	1	11	31-10-2022
12	Regular Grammars: Definition,	L+ D	BB	1	12	02-11-2022
13	Regular Grammars and Regular languages.	L+ D	BB	1	13	03-11-2022
14	Regular Languages (RL) and Non-regular Languages:	L+ D	BB	1	14	07-11-2022
15	How many RLs, To show that a language is regular,	L+ D	BB	1	15	07-11-2022
16	Closure properties of RLs, to show some languages are not RLs.	L+ D	BB	1	16	08-11-2022
MODULE 3: Context-Free Grammars(CFG)						
17	Introduction to Rewrite Systems and Grammars,	L+ D	BB	1	17	09-11-2022
18	CFGs and languages, designing CFGs, simplifying CFGs,	L+D	BB	1	18	10-11-2022
19	proving that a Grammar is correct, Derivation and Parse trees,	L+ D	BB	1	19	15-11-2022
20	Ambiguity, Normal Forms. Pushdown Automata (PDA):	L+D	BB	1	20	24-11-2022
21	Definition of non-deterministic PDA,	L+D	BB	1	21	26-11-2022
22	Deterministic and Non-deterministic PDAs,	L+ D	BB	1	22	28-11-2022
23	Non-determinism and Halting, alternative equivalent definitions of a PDA,	L+D	BB	1	23	29-11-2022
24	alternatives that are not equivalent to PDA.	L+D	BB	1	24	30-11-2022
MODULE 4: Algorithms and Decision Procedures for CFLs						
25	Algorithms and Decision Procedures for CFLs	L+ D	BB	1	25	30-11-2022
26	Decidable questions, Un-decidable questions.	L+D	BB	1	26	01-12-2022
27	Turing Machine: Turing machine model,	L+ D	BB	1	27	05-12-2022
28	Representation, Language acceptability	L+D	BB	1	28	06-12-2022

	by TM,					
29	design of TM,	L+D	BB	1	29	07-12-2022
30	Techniques for TM construction.	L+D	BB	1	30	08-12-2022
31	Variants of Turing Machines (TM),	L+ D	BB	1	31	12-12-2022
32	The model of Linear Bounded automata.	L+ D	BB	1	32	12-12-2022
MODULE 5: Decidability						
33	Decidability:	L+D	BB+LCD	1	33	13-12-2022
34	Definition of an algorithm, decidability,	L+ D	BB+LCD	1	34	14-12-2022
35	Decidable languages, Undecidable languages,	L+D	BB+LCD	1	35	15-12-2022
36	Halting problem of TM, Post correspondence problem.	L+D	BB+LCD	1	36	19-12-2022
37	Complexity: Growth rate of functions,	L+D	BB+LCD	1	37	20-12-2022
38	The classes of P and NP,	L+D	BB+LCD	1	38	21-12-2022
39	Quantum Computation: quantum computers, Church Turing thesis.	L+D	BB+LCD	1	39	23-12-2022
40	Applications.	L+D	BB+LCD	1	40	31-12-2022
REVISION						
41	Revision-Module 1	L+D	BB+LCD	1	41	03-01-2023
42	Revision-Module 1	L+D	BB+LCD	1	42	03-01-2023
43	Revision-Module 2	L+D	BB+LCD	1	43	04-01-2023
44	Revision-Module 2	L+D	BB+LCD	1	44	05-01-2023
45	Revision-Module 3	L+D	BB+LCD	1	45	09-01-2023
46	Revision-Module 3	L+D	BB+LCD	1	46	09-01-2023
47	Revision-Module 4	L+D	BB+LCD	1	47	10-01-2023
48	Revision-Module 4	L+D	BB+LCD	1	48	11-01-2023
49	Revision-Module 5	L+D	BB+LCD	1	49	12-01-2023
50	Revision-Module 5	L+D	BB+LCD	1	50	16-01-2023
51	Question Paper Solving	L+D	BB	1	51	17-01-2023
52	Question Paper Solving	L+D	BB	1	52	19-01-2023

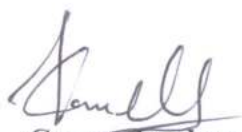
53	Question Paper Solving	L+D	BB	1	53	24-01-2023
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Textbooks:


1. Elaine Rich, Automata, Computability and Complexity, 1st Edition, Pearson education, 2012/2013
2. K L P Mishra, N Chandrasekaran, 3rd Edition, Theory of Computer Science, PHI, 2012.

Reference Books:

1. John E Hopcroft, Rajeev Motwani, Jeffery D Ullman, Introduction to Automata Theory, Languages, and Computation, 3rd Edition, Pearson Education, 2013
2. Michael Sipser : Introduction to the Theory of Computation, 3rd edition, Cengage learning, 2013
3. John C Martin, Introduction to Languages and The Theory of Computation, 3rd Edition, Tata McGraw –Hill Publishing Company Limited, 2013
4. Peter Linz, “An Introduction to Formal Languages and Automata”, 3rd Edition, Narosa Publishers, 1998
5. Basavaraj S. Anami, Karibasappa K G, Formal Languages and Automata theory, Wiley India, 2012
6. C K Nagpal, Formal Languages and Automata Theory, Oxford University press, 2012.


Course In charge


Module Coordinator


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K.S. Institute of Technology
Bengaluru -560 109



KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

NAME OF THE STAFF : Mr. Manoj Kumar S

SUBJECT CODE/NAME : 18CS54/ AUTOMATA THEORY & COMPUTABILITY

SEMESTER/YEAR/SEC : V A

ACADEMIC YEAR : 2022-2023


Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	Why ATC: Strings and Languages	L+I	BB	1	1	10/10/2022
2	Operations on String, Enumerations	L+I	BB	1	2	11/10/2022
3	Uniqueness, Encoding, Decision Problems	L+I	BB	1	3	12/10/2022
4	Chomsky Hierarchy, FSM, RE, CFG, PDA, Turing M	L+I	BB	1	4	13/10/2022
5	Computation, Non determinism, Intro to FSM	L+I	BB	1	5	17/10/2022
6	DFSM and Problems	L+I	BB	1	6	18/10/2022
7	DFSM Problems contd	L+I	BB	1	7	19/10/2022
8	DFSM Problems contd	L+I	BB	1	8	20/10/2022
9	DFSM Hard Problems	L+I	BB	1	9	21/10/2022
10	Intro to NFSM	L+I	BB	1	10	25/10/2022
11	NFSM Contd	L+I	BB	1	11	27/10/2022
12	eNFSM and eNFSM to DFSM	L+I	BB	1	12	29/10/2022
13	NFSM to DFSM	L+I	BB	1	13	31/10/2022
14	NFSM to DFSM, Equivalence of two states, Minimization of DFSM	L+I	BB	1	14	02/11/2022

15	Minimization of DFMS Problems	L+I	BB	1	15	03/11/2022
MODULE 2						
16	Introduction to Regular Expression	L+I	BB	1	16	04/11/2022
17	Problems on RE and Identities	L+I	BB	1	17	07/11/2022
18	RE to eNFSM	L+I	BB	1	18	08/11/2022
19	RE to eNFSM	L+I	BB	1	19	09/11/2022
20	FSM to RE by eliminating states	L+I	BB	1	20	10/11/2022
21	REVISION	L+I	BB	1	21	12/11/2022
FIRST INTERNALS						
22	Kleene's Theorem & problems	L+I	BB	1	22	17/11/2022
23	Kleene's theorem problems	L+I	BB	1	23	21/11/2022
24	Regular grammar and problems, Closure Properties of RE	L+I	BB	1	24	22/11/2022
25	Pumping lemma theorem, prove L is not Regular	L+I	BB	1	25	23/11/2022
MODULE 3						
26	CFG, Problems	L+I	BB	1	26	24/11/2022
27	CFG Problems	L+I	BB	1	27	25/11/2022
28	CFG Problems, Derivations	L+I	BB	1	28	26/11/2022
29	Derivation problems, Parse Tree, Ambiguous grammar	L+I	BB	1	29	28/11/2022
30	Chomsky Normal Form	L+I	BB	1	30	29/11/2022
31	Greibach Normal Form	L+I	BB	1	31	30/11/2022
32	Pushdown Automata Introduction	L+I	BB	1	32	01/12/2022
33	Pushdown Automata Problems	L+I	BB	1	33	05/12/2022
34	Pushdown Automata Problems	L+I	BB	1	34	06/12/2022
35	Deterministic PDA	L+I	BB	1	35	07/12/2022
36	Non-Deterministic PDA	L+I	BB	1	36	08/12/2022
37	Deterministic PDA, Non-Deterministic PDA problems	L+I	BB	1	37	10/12/2022
38	Nondeterminism and Halting	L+I	BB	1	38	12/12/2022
MODULE 4						
39	Decidable questions,	L+I	BB	1	39	13/12/2022
40	Un-decidable questions.	L+I	BB	1	40	14/12/2022

41	Turing machine model Representation	L+I	BB	1	41	15/12/2022
SECOND INTERNALS						
42	Language acceptability by TM	L+I	BB	1	42	22/12/2022
43	design of TM, Techniques for TM construction	L+I	BB	1	43	24/12/2022
44	TM Problems		BB	1	44	26/12/2022
45	TM Problems		BB	1	45	27/12/2022
46	Pedagogy:Quiz		BB	1	46	28/12/2022
47	Variants of Turing Machines (TM)		BB	1	47	29/12/2022
48	Variants of Turing Machines (TM)		BB	1	48	31/12/2022
49	The model of Linear Bounded automata.		BB	1	49	02/01/2023
50	CBS: Introduction to LEX & YACC		LCD	1	50	03/01/2023
MODULE 5						
51	Definition of an algorithm, decidability, decidable languages		LCD	1	51	04/01/2023
52	Undecidable languages		LCD	1	52	05/01/2023
53	halting problem of TM		LCD	1	53	09/01/2023
54	Post correspondence problem		LCD	1	54	10/01/2023
55	Complexity: Growth rate of functions, the classes of P and NP		LCD	1	55	11/01/2023
56	Quantum Computation: quantum computers		LCD	1	56	12/01/2023
57	Church-Turing thesis.		LCD	1	57	16/01/2023
58	Applications: G.1 Defining syntax of programming language, Appendix J: Security		LCD	1	58	17/01/2023
THIRD INTERNALS						


Course in charge


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BENGALURU - 560 109.



K S INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME OF THE STAFF : Dr. REKHA B VENKATAPUR

SUBJECT CODE/NAME : 18CS56 UNIX PROGRAMMING

SEMESTER/YEAR : V 'A' Section


ACADEMIC YEAR : 2022-2023


Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Introduction						
1.	Introduction. Unix Components/Architecture. Features of Unix, The UNIX Environment and UNIX Structure,	L+D	Power point presentations(PPTs)	1	1	10-10-2022
2.	POSIX and single Unix specification. The login prompt. General features of Unix commands/ command structure.	L+ D	PPTs	1	2	11-10-2022
3.	Command arguments and options. Understanding of some basic commands such as echo, printf, ls, who, date, passwd, cal.	L+ D	PPTs Ubuntu Operating system	1	3	13-10-2022
4.	Combining commands. Meaning of Internal and external commands.	L+D	PPTs Ubuntu Operating system	1	4	14-10-2022
5.	The type command: knowing the type of a command and locating it. The root Login , Becoming Super user: su command	L+D	Cygwin Simulator	1	5	17-10-2022
6.	Unix Files: Naming files, Basic file types/categories, Organization of files.	L+D	PPTs	1	6	18-10-2022
7.	Hidden files, Standard directories. Parent Child relationship. Home directory and HOME variable	L+D	Cygwin Simulator	1	7	20-10-2022

8.	The PATH variable, Manipulating the PATH, Relative and absolute path names. Directory commands – pwd,cd, mkdir,rmdir,the (.) dotand double dots(..) notations to represent	L+D	PPTs Ubuntu, Cygwin Simulator	1	8	21-10-2022
9.	File related commands –cat,mv.rm,cp and od commands	L+D	PPTs Cygwin Simulator	1	9	25-10-2022
10.	Pedagogy activity – I	Quiz				27-10-2022
11.	Afile attributes and permissions : The ls Command with options, Changing file permissions: the relative and absolute permissions changing methods. Recursively changing file permissions, Directory permissions.	L+D	PPTs Cygwin Simulator	1	10	28-10-2022
12.	The Shells interpretive cycle: Wild cards. Removing the special meaning of wild cards. Three standard files and redirection.	L+D	PPTs ' Ubuntu	1	11	29-10-2022
13.	Connecting Commands pipe.Basic and extended regular expressions The grep,egrep. Typical ex. Involving diff. regular expressions	L+ D	PPTs Ubuntu	1	12	31-10-2022
14.	Shell Programming : Ordinary and environment variables	L+D	PPTs Ubuntu	1	13	03-11-2022
15.	The .profile. Read and readonly commands. Command line arguments.	L+D	PPTs Ubuntu	1	14	04-11-2022
16.	Internal Assessment - I					09-11-2022
17.	exit and exit status of command. Logical operators for conditional execution. The test command & short cuts	L+D	PPTs Ubuntu	1	15	10-11-2022
18.	The if, while, for and case control statements	L+D	PPTs Ubuntu	1	16	14-11-2022
19.	The set and shift commands	L+D	PPTs Ubuntu	1	17	15-11-2022
20.	Handling positional parameters. The HERE (<<) document and trap command, Simple shell program examples	L+D	PPTs Ubuntu	1	18	21-11-2022
21.	Pedagogy Activity - II	Group Discussion-Execution of Shell Programs				22-11-2022
22.	UNIX File APIs: General File APIs	L+D	PPTs Ubuntu	1	19	24-11-2022
23.	File and Record locking, Directory File APIs, Device File APIs	L+D	PPTs Ubuntu	1	20	25-11-2022
24.	FIFO File APIs, Symbolic Link APIs	L+D	PPTs Ubuntu	1	21	26-11-2022

25.	UNIX PROCESSES and Process Control : The Environment of a UNIX Process: Introduction, main function, Process termination, Command-line arguments	L+D	PPTs Ubuntu	1	22	28-11-2022
26.	Environment List, Memory layout of a C program, Shared Libraries, Memory Allocation	L+D	PPTs Ubuntu	1	23	29-11-2022
27.	Environmental Variables, setjmp, longjmp Functions, getrlimit, setrlimit functions	L+D	PPTs Ubuntu	1	24	01-12-2022
28.	Unix Kernel Support for Processes, Process Control: Introduction	L+D	PPTs Ubuntu	1	25	02-12-2022
29.	Process identifier, fork, vfork	L+D	PPTs Ubuntu	1	26	05-12-2022
30.	wait, waitpid, wait3, wait4 Functions	L+D	PPTs Ubuntu	1	27	06-12-2022
31.	Race Conditions, exec Functions	L+D	PPTs Ubuntu	1	28	08-12-2022
32.	Changing User IDs and Group IDs, Interpreter Files, system Function, Process Accounting,	L+D	PPTs Ubuntu	1	29	09-12-2022
33.	User Identification, Process Times, I/O Redirection.	L+D	PPTs Ubuntu	1	30	10-12-2022
34.	Internal Assessment – II					14-12-2022
35.	Overview of IPC Methods,	L+D	PPTs Ubuntu	1	31	15-12-2022
36.	Pipes, popen, pclose Functions,	L+D	PPTs Ubuntu	1	32	16-12-2022
37.	Coprocesses, FIFOs,	L+D	PPTs Ubuntu	1	33	19-12-2022
38.	System V IPC, Message Queues, Semaphores.	L+D	PPTs Ubuntu	1	34	20-12-2022
39.	Shared Memory, Client-Server Properties,	L+D	PPTs Ubuntu	1	35	22-12-2022
40.	Stream Pipes, Passing File Descriptors	L+D	PPTs Ubuntu	1	36	23-12-2022
41.	An Open Server-Version 1,	L+D	PPTs Ubuntu	1	37	24-12-2022
42.	Client-Server Connection Functions.	L+D		1	38	26-12-2022
43.	Signals: The UNIX Kernel Support for Signals,	L+D	PPTs Ubuntu	1	39	27-12-2022
44.	signal, Signal Mask, sigaction,	L+D	PPTs Ubuntu	1	40	29-12-2022

45.	The SIGCHLD Signal and the waitpid Function	L+D	PPTs Ubuntu	1	41	30-12-2022	
46.	The sigsetjmp and siglongjmp Functions	L+D	PPTs Ubuntu	1	42	02-01-2023	
47.	Kill, Alarm, Interval Timers,	L+D	PPTs Ubuntu	1	43	03-01-2023	
48.	POSIX.lb Timers.	L+D	PPTs Ubuntu	1	44	05-01-2023	
49.	Daemon Processes: Introduction,	L+D	PPTs Ubuntu	1	45	06-01-2023	
50.	Daemon Characteristics,	L+D	PPTs Ubuntu	1	46	09-01-2023	
51.	Coding Rules, Error Logging, Client-Server Model.	L+D	PPTs Ubuntu,	1	47	10-01-2023	
52.	Internal Assessment - III						13-01-2023
53.	Revision						16-01-2023 17-01-2022


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K S INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME OF THE STAFF : LAXMIKANTHA K

SUBJECT CODE/NAME : 18CS56/ UNIX PROGRAMMING

SEMESTER/YEAR : V B/ III

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Introduction						
1	Unix Components/Architecture. Features of Unix. The UNIX Environment and UNIX Structure,	L+D	LCD	1	1	10/10/2022
2	Posix and Single Unix specification. General features of Unix commands/ command structure.	L+D	LCD+BB	1	2	11/10/2022
3	Command arguments and options. Basic Unix commands such as echo, printf, ls, who, date, passwd, cal, Combining commands.	L+D	LCD+BB	1	3	12/10/2022
4	Meaning of Internal and external commands. The type command: knowing the type of a command and locating it.	L+D	LCD+BB	1	4	14/10/2022
5	The root login. Becoming the super user: su command. Unix files: Naming files. Basic file types/categories. Organization of files. Hidden files.	L+D	LCD+BB	1	5	17/10/2022
6	Standard directories. Parent child relationship. The home directory and the HOME variable.	L+D, PS	LCD	1	6	18/10/2022
7	Reaching required files- the PATH variable, manipulating the PATH, Relative and absolute pathnames.	L+I	LCD+BB	1	7	19/10/2022

8	Directory commands – pwd, cd, mkdir, rmdir commands. The dot (.) and double dots (..) notations to represent present and	L+D, PS	BB	1	8	20/10/2022
9	Parent directories and their usage in relative path names. File related commands – cat, mv, rm, cp, wc and od commands	L+D, PS	BB	1	9	28/10/2022
MODULE 2: File attributes and permissions						
10	The ls command with options. Changing file permissions: the relative and absolute permissions changing methods. Recursively changing file permissions. Directory permissions.	L+D	LCD+BB	1	10	29/10/2022
11	The shells interpretive cycle: Wild cards. Removing the special meanings of wild cards.	L+D	LCD+BB	1	11	31/10/2022
12	Three standard files and redirection. Connecting commands: Pipe. Basic and Extended regular expressions.	L+ D	BB	2	12	02/11/2022
IA-I (16/11/2022)						
13	The grep, egrep. Typical examples involving different regular expressions.	L+D	BB	1	13	04/11/2022
14	Shell programming: Ordinary and environment variables. The .profile. Read and read only commands.	L+D, PS	LCD+BB	1	14	07/11/2022
15	Command line arguments. exit and exit status of a command. Logical operators for conditional execution.	PS	LCD+BB	1	15	08/11/2022
16	The test command and its shortcut. The if, while, for and case control statements.	L+I	LCD+BB	1	16	09/11/2022
17	The set and shift commands and handling positional parameters.	L+D	LCD+BB	1	17	12/11/2022
18	The here (<<) document and trap command. Simple shell program examples.	L+D	BB	1	18	13/11/2022
MODUL E 3: UNIX File APIs						
19	General File APIs, File and Record Locking,	L+D, L+I	BB	1	19	14/11/2022
20	Directory File APIs, FIFO File APIs	L+I	BB	1	20	15/11/2022
21	Symbolic Link File APIs. Device File APIs, UNIX	L+D	BB	1	21	

	Processes and Process Control					21/11/2022
22	The Environment of a UNIX Process: Introduction, main function	L+D	BB	1	22	22/11/2022
23	Process Termination, Command-Line Arguments,	L+D	BB	1	23	23/11/2022
24	Environment List, Memory Layout of a C Program,	L+D	BB	1	24	28/11/2022
25	Shared Libraries, Memory Allocation,	L+D	BB	1	25	29/11/2022
26	Environment Variables, setjmp and longjmp Functions	L+I,	BB	1	26	30/11/2022
MOD ULE 4: IPC						
27	Changing User IDs and Group IDs, Interpreter Files, system Function, Process Accounting	L+D	BB	1	27	02/12/2022
28	User Identification, Process Times, I/O Redirection. Overview of IPC Methods	L+D	BB	1	28	05/12/2022
IA-II (24/12/2022)						
29	Pipes, popen, pclose Functions,	L+D, PS	LCD+BB	1	29	06/12/2022
30	Co processes, FIFOs, System V IPC,	L+D	LCD+BB	1	30	07/12/2022
31	Message Queues, Semaphores	L+D	LCD+BB	1	31	09/12/2022
32	Shared Memory, Client-Server Properties	L+D	LCD+BB	1	32	10/12/2022
33	Stream Pipes, Passing File Descriptors	L+D	LCD+BB	1	33	12/12/2022
34	An Open Server-Version 1, Client-Server Connection Functions			1	34	13/12/2022
MODULE 5: Signals						
35	The UNIX Kernel Support for Signals,	L+D	LCD+BB	1	35	14/12/2022
36	signal, Signal Mask, sigaction,	L+D	LCD+BB	1	36	16/12/2022
37	The SIGCHLD Signal and the waitpid Function,	L+D	LCD+BB	1	37	

						23/12/2022
38	The sigsetjmp and siglongjmp Functions,	L+D	LCD+BB	1	38	24/12/2022
39	Kill, Alarm, Interval Timers, POSIX.lb Timers	L+D	BB	1	39	26/12/2022
40	Daemon Processes: Introduction, Daemon Characteristics	L+D, PS	BB	1	40	27/12/2022
41	Coding Rules, Error Logging	L+D	LCD+BB	1	41	28/12/2022
42	Client-Server Model.	L+D	LCD+BB	1	42	30/12/2022
IA-3(20/01/2023)						

Text Books:

1. Sumitabha Das., Unix Concepts and Applications., 4th Edition., Tata McGraw Hill (Chapter 1,2 ,3,4,5,6,8,13,14)
2. W. Richard Stevens: Advanced Programming in the UNIX Environment, 2nd Edition, Pearson Education, 2005 (Chapter 3,7,8,10,13,15)
3. Unix System Programming Using C++ - Terrence Chan, PHI, 1999. (Chapter 7,8,9,10)

Reference Books:

1. M.G. Venkatesh Murthy: UNIX & Shell Programming, Pearson Education.
2. Richard Blum , Christine Bresnahan : Linux Command Line and Shell Scripting Bible, 2nd Edition, Wiley, 2014.

Web Materials:

Weblinks and Video Lectures (e-Resources):

- 1) <https://archive.nptel.ac.in/courses/117/106/117106113/>
- 2) https://nptel.ac.in/content/storage2/courses/106108101/pdf/PPTs/Mod_13.pdf

Details for the teaching Aids

Black Board and LCD



Signature of Course In-Charge



Signature of Module Coordinator



Signature of HOD-CSE

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Bengaluru -560 109*

5	ORDER DATABASE QUERIES	BB+LCD	3	B1	04/12/2022
		BB+LCD	3	B2	10/11/2022
		BB+LCD	3	B3	12/11/2022
6	MOVIE DATABASE	BB+LCD	3	B1	18/11/2022
		BB+LCD	3	B2	17/11/2022
		BB+LCD	3	B3	22/11/2022
7	MOVIE DATABASE QUERIES	BB+LCD	3	B1	25/11/2022
		BB+LCD	3	B2	24/11/2022
		BB+LCD	3	B3	29/11/2022
8	COLLEGE DATABASE	BB+LCD	3	B1	02/12/2022
		BB+LCD	3	B2	01/12/2022
		BB+LCD	3	B3	06/12/2022
9	COMPANY DATABASE	BB+LCD	3	B1	09/12/2022
		BB+LCD	3	B2	08/12/2022
		BB+LCD	3	B3	10/12/2022
10	Mini Project	BB+LCD	3	B1	16/12/2022
		BB+LCD	3	B2	15/12/2022
		BB+LCD	3	B3	12/12/2022
11	Mini Project	BB+LCD	3	B1	23/12/2022

		BB+LCD	3	B2	22/12/2022
		BB+LCD	3	B3	27/12/2023
12	Revision(Practice Lab)	BB	3	B1	30/12/2022
		BB	3	B2	29/12/2023
		BB	3	B3	03/01/2023
13	Revision(Practice Lab)	BB	3	B1	06/01/2023
		BB	3	B2	05/01/2023
		BB	3	B3	10/01/2023
14	Internal Test	BB	3	B1	18/01/2023
		BB	3	B2	19/01/2023
		BB	3	B3	20/01/2023

WEB MATERIALS:

- <https://nptel.ac.in/courses/106106139>
- <https://www.coursera.org/learn/machine-learning>
- <https://www.udemy.com/machinelearning/>

Details for the teaching Aids

BB-Black Board

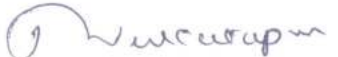
LCD-Projector

Rashmi. H

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K.S. INSTITUTE OF TECHNOLOGY, BENGALURU- 560109
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME OF THE STAFF : Prof. Kavya M S
SUBJECT CODE/NAME : 18CS744/ CRYPTOGRAPHY
SEMESTER/SEC/YEAR : VII / A / IV
ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Classical Encryption Techniques						
1	Classical Encryption Techniques Symmetric Cipher Model, Cryptography, Cryptanalysis	L+D	BB+LCD	1	1	19/09/2022
2	Brute-Force Attack, Substitution Techniques, Caesar Cipher, Monoalphabetic Cipher,	L+ D	BB+LCD	1	2	20/09/2022
3	Playfair Cipher, Hill Cipher, Polyalphabetic Cipher, One Time Pad. Block Ciphers and the data encryption standard: Traditional block Cipher structure, stream Ciphers and block Ciphers,	L+ D	BB+LCD	1	3	21/09/2022
4	Motivation for the feistel Cipher structure, the feistel Cipher,	L+D	BB	1	4	23/0/9/2022
5	The data encryption standard, DES encryption, DES decryption, A DES example, results,	L+ D	BB	1	5	26/09/2022
6	The avalanche effect, the strength of DES, the use of 56-Bit Keys,	L+D	BB	1	6	27/09/2022

7	The nature of the DES algorithm, timing attacks, Block cipher design principles	L+D	BB	1	7	28/09/2022
8	number of rounds, design of function F, key schedule algorithm	L+ D	BB	1	8	30/09/2022
9	Revision-Module 1	L+ D	BB	1	9	1/10/2022
10	Revision-Module 1	L+ D	BB	1	10	7/10/2022
MODULE 2: Public-Key Cryptography and RSA						
11	Public-Key Cryptography and RSA: Principles of public-key cryptosystems.	L+D	BB	1	11	8/10/2022
12	Public-key cryptosystems. Applications for public-key cryptosystems,	L+ D	BB	1	12	8/10/2022
13	Requirements for public-key cryptosystems. Public-key cryptanalysis.	L+D	BB	1	13	10/10/2022
14	The RSA algorithm, description of the algorithm,	L+ D	BB	1	14	11/10/2022
15	Computational aspects, the security of RSA. Other Public-Key Cryptosystems:	L+ D	BB	1	15	12/10/2022
16	Diffie-Hellman key exchange, The algorithm, key exchange protocols,	L+ D	BB	1	16	14/10/2022
17	Man in the middle attack,	L+ D	BB	1	17	15/10/2022
18	Elgamal Cryptographic systems	L+ D	BB	1	18	17/10/2022
19	Revision-Module 2	L+ D	BB	1	19	18/10/2022
20	Revision-Module 2	L+ D	BB	1	20	19/10/2022
MODULE 3: Elliptic Curve Cryptography						
21	Elliptic curve arithmetic, abelian groups, elliptic curves over real numbers,	L+ D	BB	1	21	21/10/2022
22	elliptic curves over \mathbb{Z}_p , elliptic curves over $\text{GF}(2^m)$, Elliptic curve cryptography,	L+D	BB	1	22	28/10/2022
23	Analog of Diffie-Hellman key exchange, Elliptic curve encryption/ decryption,	L+ D	BB	1	23	09/11/2022
24	Security of Elliptic curve cryptography, Pseudorandom number generation based on an asymmetric cipher, PRNG based on RSA.	L+D	BB	1	24	12/11/2022

25	Key Management and Distribution: Symmetric key distribution using Symmetric encryption, A key distribution scenario,	L+D	BB	1	25	15/11/2022
26	Hierarchical key control, session key lifetime, a transparent key control scheme,	L+ D	BB	1	26	15/11/2022
27	Decentralized key control, controlling key usage, Symmetric key distribution using asymmetric encryption,	L+D	BB	1	27	16/11/2022
28	simple secret key distribution, Public keys certificates.	L+D	BB	1	28	18/11/2022
29	Revision-Module 3	L+D	BB	1	29	21/11/2022
30	Revision-Module 3	L+D	BB	1	30	22/11/2022
MODULE 4: X-509 certificates						
31	X-509 certificates. Certificates, X-509 version 3, public key infrastructure .User Authentication:	L+ D	BB	1	31	23/11/2022
32	Remote user Authentication principles, Mutual Authentication, one way Authentication, remote user Authentication using Symmetric encryption,	L+D	BB	1	32	25/11/2022
33	Mutual Authentication, one way Authentication, Kerberos, Motivation , Kerberos version 4,	L+ D	BB	1	33	29/11/2022
34	Kerberos version 5, Remote user Authentication using Asymmetric encryption,	L+D	BB	1	34	05/12/2022
35	Mutual Authentication, one way Authentication. Electronic Mail Security:	L+D	BB	1	35	06/12/2022
36	Pretty good privacy, notation, operational; description, S/MIME, RFC5322, Multipurpose internet mail extensions, S/MIME functionality,	L+D	BB	1	36	07/12/2022
37	S/MIME messages, S/MIME certificate processing, enhanced security services,	L+ D	BB	1	37	09/12/2022
38	Domain keys identified mail, internet mail architecture, E-Mail threats, DKIM strategy, and	L+ D	BB	1	38	09/12/2022

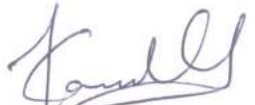
	DKIM functional flow.					
39	Revision-Module 4	L+D	BB+LCD	1	39	13/12/2022
40	Revision-Module 4	L+D	BB+LCD	1	40	14/12/2022
MODULE 5: IP Security						
41	IP Security: IP Security overview, applications of IPsec, benefits of IPsec, Routing applications, IPsec documents,	L+D	BB+LCD	1	41	16/12/2022
42	IPsec services, transport and tunnel modes, IP Security policy, Security associations, Security associations database,	L+ D	BB+LCD	1	42	16/12/2022
43	Security policy database, IP traffic processing, Encapsulating Security payload,	L+D	BB+LCD	1	43	19/12/2022
44	ESP format, encryption and authentication algorithms, Padding, Anti replay service	L+D	BB+LCD	1	44	20/12/2022
45	Transport and tunnel modes, combining security associations, authentication plus	L+D	BB+LCD	1	45	21/12/2022
46	confidentiality, basic combinations of security associations,	L+D	BB+LCD	1	46	23/12/2022
47	Internet key exchange, key determinations protocol,	L+D	BB+LCD	1	47	27/12/2022
48	Header and payload formats, cryptographic suits.	L+D	BB+LCD	1	48	27/12/2022
49	Revision-Module 5	L+D	BB+LCD	1	49	29/12/2022
50	Revision-Module 5	L+D	BB+LCD	1	50	29/12/2022
REVISION						
51	Question Paper Solving	L+D	BB	1	51	31/12/2022
52	Question Paper Solving	L+D	BB	1	52	31/12/2022

Textbooks:

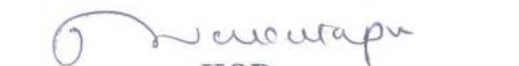
1. William Stallings: Cryptography and Network Security, Pearson 6th edition.

Reference Books:

1. V K Pachghare: Cryptography and Information Security, PHI 2nd Edition.


Course In charge


Module Coordinator


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K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : PALLAVI K N
COURSE CODE/TITLE : 18CS734 / USER INTERFACE DESIGN
YEAR/ SEMESTER/SECTION : IV/ VII / A
BRANCH : CSE

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: The User Interface						
1	Introduction, Overview	L+D	LCD	1	1	19/09/2022
2	The importance of user interface,	L+D	LCD	1	2	21/09/2022
3	Defining the user interface	L+D	LCD	1	3	21/09/2022
4	The importance of good design	L+D	LCD	1	4	22/09/2022
5	Characteristics of GUI and web user interface	L+D	LCD	1	5	26/09/2022
6	Principles of user interface Design	L+D	LCD	1	6	28/09/2022
7	Discussion	-	-	1	7	28/09/2022
Module 2: The User Interface Design Process						
8	Obstacles	L+D	LCD	1	8	29/09/2022
9	Usability	L+D	LCD	1	9	01/10/2022

10	Human characteristics in Design.	L+D	LCD	1	10	01/10/2022
11	Human Interaction speeds.	L+D	LCD	1	11	03/10/2022
12	Business functions-Business definition and requirement analysis.	L+D	LCD	1	12	06/10/2022
13	Basic business functions.	L+D	LCD	1	13	10/10/2022
14	Design standards.	L+D	LCD	1	14	12/10/2022
15	Discussion			1	15	12/10/2022
Module 3: System menus and Navigation schemes						
16	Structures of menus.	L+D	LCD	1	16	13/10/2022
17	Functions of menus.	L+D	LCD	1	17	20/10/2022
18	Contents of menus.	L+D	LCD	1	18	31/10/2022
19	Formatting of menus.	L+D	LCD	1	19	02/11/2022
20	Phrasing the menu.	L+D	LCD	1	20	02/11/2022
21	Selecting menu choices.	L+D	LCD	1	21	03/11/2022
22	Navigating menus.	L+D	LCD	1	22	07/11/2022
23	Kinds of graphical menus.	L+D	LCD	1	23	09/11/2022
24	Revision	D	D	1	24	09/11/2022
25	Pedagogy Activity			4	25-28	10/11/2022 14/11/2022 16/11/2022
Module 4: Windows						
26	Characteristics.	L+D	LCD	1	29	17/11/2022

27	Components of window,	L+D	LCD	1	30	24/11/2022
28	Window presentation styles,	L+D	LCD	1	31	26/11/2022
29	Types of window,	L+D	LCD	1	32	26/11/2022
30	Window management,	L+D	LCD	1	33	28/11/2022
31	Organizing window functions,	L+D	LCD	1	34	30/11/2022
32	Window operations,	L+D	LCD	1	35	30/11/2022
33	Web systems,	L+D	LCD	1	36	01/12/2022
34	Characteristics of device based controls.	L+D	LCD	1	37	05/12/2022
35	Revision			1	38	07/12/2022
Module 5:Screen based controls						
36	Operable control,	L+D	LCD	1	39	07/12/2022
37	Text control,	L+D	LCD	1	40	08/12/2022
38	Selection control,	L+D	LCD	1	41	12/12/2022
39	Custom control,	L+D	LCD	1	42	14/12/2022
40	Presentation control,	L+D	LCD	1	43	14/12/2022
41	Windows Tests-prototypes,	L+D	LCD	1	44	15/12/2022
42	kinds of tests.	L+D	LCD	1	45	19/12/2022
43	Discussion(Module 5)	D	D	1	46	21/12/2022
44	Revision (Module 1)	D	D	1	47	21/12/2022

45	Revision (Module 2)	D	D	1	48	26/12/2022
46	Revision (Module 3)	D	D	1	49	28/12/2022
47	Revision (Module 4)	D	D	1	50	28/12/2022
48	VTU Question Paper Discussion	D	D	1	51	31/12/2022

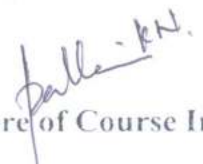
Text Books: Wilbert O. Galitz, "The Essential Guide to User Interface Design", John Wiley & Sons. Second Edition 2002.

Reference Books:

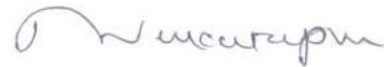
1. Ben Sheiderman, "Design the User Interface", Pearson Education, 1998.
2. Alan Cooper, "The Essential of User Interface Design", Wiley- Dream Tech Ltd., 2002.

Details of the teaching aid:

1. LCD- Projector


Signature of Course In-Charge


Signature of Module Coordinator


HOD CSE
Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109



K S INSTITUTE OF TECHNOLOGY BENGALURU
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

NAME OF THE STAFF : **KRISHNA GUDI**
SUBJECT CODE/NAME : **18CS734/ USER INTERFACE DESIGN**
SEMESTER/SEC/YEAR : **VII / B / IV**
ACADEMIC YEAR : **2022-2023**

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	The User Interface-Introduction	L+D	BB+LCD	1	1	20/09/2022
2	The User Interface- Overview	L+ D	BB+LCD	1	2	22/09/2022
3	The importance of user interface	L+ D	BB+LCD	1	3	23/09/2022
4	Defining the user interface	L+D	BB+LCD	1	4	23/09/2022
5	The importance of Good design	L+D	BB+LCD	1	5	27/09/2022
6	Characteristics of graphical user interfaces	L+D	BB+LCD	1	6	29/09/2022
7	Web user interfaces	L+D	BB+LCD	1	7	30/09/2022
8	Principles of user interface design.	L+D	BB+LCD	1	8	30/09/2022

MODULE 2						
9	The User Interface Design process- Obstacles	L+D	BB+LCD	1	9	06/10/2022
10	The User Interface Design process--Obstacles	L+ D	BB+LCD	1	10	07/10/2022
11	The User Interface Design process-Usability	L+ D	BB+LCD	1	11	07/10/2022
12	Human characteristics in Design	L+D	BB+LCD	1	12	11/10/2022
13	Business functions-Business definition	L+D	BB+LCD	1	13	13/10/2022
14	Business functions-Requirement analysis	L+D	BB+LCD	1	14	14/10/2022
15	Basic business functions	L+D	BB+LCD	1	15	14/10/2022
16	Design standards	L+D	BB+LCD	1	16	15/10/2022
MODULE 3						
17	System menus and navigation schemes	L+D	BB+LCD	1	17	15/10/2022
18	Internal Assessment - 1				18	18/10/2022
19	Structures of menus, functions of menus	L+D	BB+LCD	1	19	25/10/2022
20	Contents of menus	L+D	BB+LCD	1	20	3/11/2022
21	Formatting of menus	L+D	BB+LCD	1	21	4/11/2022
22	Phrasing the menu	L+D	BB+LCD	1	22	4/11/2022
23	Selecting menu choices	L+D	BB+LCD	2	23	8/11/2022
24	Navigating menus	GD	BB+LCD	2	24	10/11/2022
MODULE - 4						

25	Windows – Characteristics	GD	BB+LCD	1	25	12/11/2022
26	Windows – Characteristics	GD	BB+LCD	1	26	15/11/2022
27	Components of window	L+D	BB+LCD	1	27	17/11/2022
28	Window presentation styles	L+D	BB+LCD	1	28	18/11/2022
29	Types of window	L+D	BB+LCD	1	29	18/11/2022
30	Internal Assessment - 2				30	22/11/2022
31	Window management	L+D	BB+LCD	1	31	24/11/2022
32	Organizing window functions	L+D	BB+LCD	1	32	25/11/2022
33	Window operations	L+D	BB+LCD	1	33	25/11/2022
34	Characteristics of device based controls	L+D	BB+LCD	1	34	29/11/2022
MODULE 5						
35	Screen based controls- Operable control	GD	BB+LCD	1	35	01/12/2022
36	Text control	L+D	BB+LCD	1	36	02/12/2022
37	Selection control	L+D	BB+LCD	1	37	02/12/2022

38	Custom control	L+D	BB+LCD	1	38	06/12/2022
39	Presentation control	L+D	BB+LCD	1	39	08/12/2022
40	Windows Tests-prototypes	L+D	BB+LCD	1	40	09/12/2022
41	Kinds of tests	L+D	BB+LCD	1	41	09/12/2022
42	Internal Assessment - 3				42	23/12/2022

Textbooks:

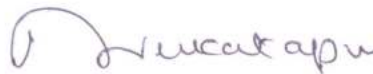
1. Wilbert O. Galitz, "The Essential Guide to User Interface Design", John Wiley & Sons, Second Edition 2002.

Reference Books:

1. Ben Sheiderman, "Design the User Interface", Pearson Education, 1998.
2. Alan Cooper, "The Essential of User Interface Design", Wiley- Dream Tech Ltd.,2002



Signature of Faculty



Signature of HoD



Signature of Principal

PRINCIPAL

K.S. INSTITUTE OF TECHNOLOGY

BENGALURU - 560 109.



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : GEETHA.R
COURSE CODE/TITLE : 18CS72/BIG DATA ANALYTICS
YEAR/ SEMESTER/SECTION : IV/VII/B
BRANCH : CSE

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: Introduction to Big Data Analytics						
1	Big Data	L+D	BB+LCD	2	2	20/9/2022 22/9/2022
2	Scalability and Parallel Processing	L+D	BB+LCD	2	4	23/9/2022 23/9/2022
3	Designing Data Architecture	L+D	BB+LCD	2	6	27/9/2022 29/9/2022
4	Data Sources, Quality, Pre-Processing and Sorting	L+D	BB+LCD	2	8	30/9/2022 30/9/2022
5	Data Storage and Analysis	L+D	BB+LCD	2	10	6/10/2022 7/10/2022
6	Big Data Analytics Applications and Case Studies	L+D	BB+LCD	1	11	7/10/2022
Module 2: Introduction to Hadoop, HDFS and Tools						
7	Introduction, Hadoop and its Ecosystem	L+D	BB+LCD	2	13	11/10/2022 13/10/2022
8	Hadoop Distributed File System	L+D	BB+LCD	2	15	14/10/2022 14/10/2022

9	MapReduce Framework and Programming Model	L+D	BB+LCD	1	16	15/10/2022
10	Hadoop YARN, Hadoop Ecosystem Tools	L+D	BB+LCD	1	17	15/10/2022
11	Hadoop Distributed File System Basics: HDFS Design Features	L+D	BB+LCD	1	18	20/10/2022
12	Components, HDFS User Commands	L+D	BB+LCD	1	19	21/10/2022
13	Essential Hadoop Tools: Using Apache Pig,	L+D	BB+LCD	1	20	21/10/2022
14	Hive, Sqoop	L+D	BB+LCD	1	21	25/10/2022
15	Flume, Oozie, HBase	L+D	BB+LCD	1	22	03/11/2022
MODULE 3: NoSQL Big Data Management, MongoDB and Cassandra						
16	Introduction	L+D	BB+LCD	1	23	4/11/2022
17	NoSQL Data Store	L+D	BB+LCD	2	25	4/11/2022 8/11/2022
18	NoSQL Data Architecture Patterns	L+D	BB+LCD	2	27	10/11/2022 12/11/2022
19	NoSQL to Manage Big Data	L+D	BB+LCD	2	29	15/11/2022 17/11/2022
20	Shared-Nothing Architecture for Big Data Tasks	L+D	BB+LCD	1	30	18/11/2022
21	MongoDB, Databases	L+D	BB+LCD	1	31	18/11/2022
22	Cassandra Databases.	L+D	BB+LCD	1	32	24/11/2022
23	Pedagogy Activity	D+I	BB+LCD	1	33	25/11/2022
MODULE 4: MapReduce, Hive and Pig						
24	Introduction	L+D	BB+LCD	1	34	25/11/2022
25	MapReduce Map Tasks Reduce Tasks and MapReduce Execution	L+D	BB+LCD	1	35	29/11/2022
26	Composing MapReduce for Calculations and Algorithms	L+D	BB+LCD	2	37	1/12/2022,2/12/2022

27	Hive	L+D	BB+LCD	2	39	2/12/2022 6/12/2022
28	HiveQL	L+D	BB+LCD	1	40	8/12/2022
29	Pig	L+D	BB+LCD	1	41	9/12/2022
MODULE 5: Machine Learning Algorithms for Big Data Analytics						
30	Introduction, Estimating the relationships, Outliers, Variances, Probability Distributions	L+D	BB+LCD	2	43	9/12/2022 10/12/2022
31	Correlations, Regression analysis, Finding Similar Items, Similarity of Sets	L+D	BB+LCD	2	45	13/12/2022 15/12/2022
32	Collaborative Filtering, Frequent Item sets and Association Rule Mining	L+D	BB+LCD	2	47	16/12/2022 16/12/2022
33	Text, Web Content, Link, and Social Network Analytics: Introduction, Text mining, Web Mining	L+D	BB+LCD	1	48	20/12/2022
34	Web Content and Web Usage Analytics, Page Rank, Structure of Web	L+D	BB+LCD	1	49	27/12/2022
35	Analyzing a Web Graph, Social Network as Graphs and Social Network Analytics	L+D	BB+LCD	1	50	29/12/2022
36	Pedagogy Activity	L+D	BB+LCD	1	51	30/12/2022
37	Revision	L+D	BB+LCD	1	52	30/12/2022

Text Books:

1. 'Raj Kamal and Preeti Saxena, "Big Data Analytics Introduction to Hadoop, Spark, and Machine-Learning", McGraw Hill Education, 2018 ISBN: 9789353164966, 9353164966.
2. Douglas Eadline, "Hadoop 2 Quick-Start Guide: Learn the Essentials of Big Data Computing in the Apache Hadoop 2 Ecosystem", 1st Edition, Pearson Education, 2016. ISBN-13: 978-9332570351

Reference Books:

1. Tom White, "Hadoop: The Definitive Guide", 4 th Edition, O'Reilly Media, 2015. ISBN-13: 978- 9352130672

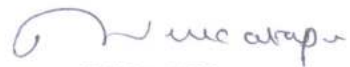
2. Boris Lublinsky, Kevin T Smith, Alexey Yakubovich, "Professional Hadoop Solutions", 1st Edition, Wrox Press, 2014 ISBN-13: 978-8126551071
3. Eric Sammer, "Hadoop Operations: A Guide for Developers and Administrators", 1st Edition, O'Reilly Media, 2012. ISBN-13: 978- 9350239261
4. Arshdeep Bahga, Vijay Madiseti, "Big Data Analytics: A Hands-On Approach", 1st Edition, VPT Publications, 2018. ISBN-13: 978-0996025577

Details of the teaching aids:

Black Board and Power Point Presentation


Course Incharge


Module coordinator


HOD CSE
Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109


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BENGALURU - 560 109.



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : GEETHA.R
COURSE CODE/TITLE : 18CS72/BIG DATA ANALYTICS
YEAR/ SEMESTER/SECTION : IV/VII/A
BRANCH : CSE

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: Introduction to Big Data Analytics						
1	Big Data	L+D	BB+LCD	2	2	19/9/2022 20/9/2022
2	Scalability and Parallel Processing	L+D	BB+LCD	2	4	21/9/2022 23/9/2022
3	Designing Data Architecture	L+D	BB+LCD	2	6	26/9/2022 27/9/2022
4	Data Sources, Quality, Pre-Processing and Sorting	L+D	BB+LCD	2	8	28/9/2022 30/9/2022
5	Data Storage and Analysis	L+D	BB+LCD	2	10	1/10/2022 3/10/2022
6	Big Data Analytics Applications and Case Studies	L+D	BB+LCD	1	11	7/10/2022
Module 2: Introduction to Hadoop, HDFS and Tools						
7	Introduction, Hadoop and its Ecosystem	L+D	BB+LCD	2	13	10/10/2022 11/10/2022
8	Hadoop Distributed File System	L+D	BB+LCD	2	15	12/10/2022 14/10/2022

9	MapReduce Framework and Programming Model	L+D	BB+LCD	1	16	15/10/2022
10	Hadoop YARN, Hadoop Ecosystem Tools	L+D	BB+LCD	1	17	21/10/2022
11	Hadoop Distributed File System Basics: HDFS Design Features	L+D	BB+LCD	1	18	25/10/2022
12	Components, HDFS User Commands	L+D	BB+LCD	1	19	28/10/2022
13	Essential Hadoop Tools : Using Apache Pig,	L+D	BB+LCD	1	20	29/10/2022
14	Hive, Sqoop	L+D	BB+LCD	1	21	31/10/2022
15	Flume, Oozie, HBase	L+D	BB+LCD	1	22	2/11/2022
MODULE 3: NoSQL Big Data Management, MongoDB and Cassandra						
16	Introduction	L+D	BB+LCD	1	23	4/11/2022
17	NoSQL Data Store	L+D	BB+LCD	2	25	7/11/2022 8/11/2022
18	NoSQL Data Architecture Patterns	L+D	BB+LCD	2	27	9/11/2022 12/11/2022
19	NoSQL to Manage Big Data	L+D	BB+LCD	2	29	14/11/2022 15/11/2022
20	Shared-Nothing Architecture for Big Data Tasks	L+D	BB+LCD	1	30	16/11/2022
21	MongoDB, Databases	L+D	BB+LCD	1	31	18/11/2022
22	Cassandra Databases.	L+D	BB+LCD	1	32	25/11/2022
23	Pedagogy Activity	D+I	BB+LCD	1	33	26/11/2022
24	Revision	L+D	BB+LCD	1	34	28/11/2022
MODULE 4: MapReduce, Hive and Pig						
25	Introduction	L+D	BB+LCD	1	35	29/11/2022

26	MapReduce Map Tasks Reduce Tasks and MapReduce Execution	L+D	BB+LCD	1	36	30/11/2022
27	Composing MapReduce for Calculations and Algorithms	L+D	BB+LCD	2	38	2/12/2022 5/12/2022
28	Hive	L+D	BB+LCD	2	40	6/12/2022 7/12/2022
29	HiveQL	L+D	BB+LCD	2	42	9/12/2022 10/12/2022
30	Pig	L+D	BB+LCD	1	43	12/12/2022
31	Revision	L+D	BB+LCD	1	44	13/12/2022
MODULE 5: Machine Learning Algorithms for Big Data Analytics						
32	Introduction, Estimating the relationships, Outliers, Variances, Probability Distributions	L+D	BB+LCD	2	46	14/12/2022 16/12/2022
33	Correlations, Regression analysis, Finding Similar Items, Similarity of Sets	L+D	BB+LCD	2	48	19/12/2022 20/12/2022
34	Collaborative Filtering, Frequent Item sets and Association Rule Mining	L+D	BB+LCD	2	50	21/12/2022 26/12/2022
35	Text, Web Content, Link, and Social Network Analytics: Introduction, Text mining, Web Mining	L+D	BB+LCD	1	51	27/12/2022
36	Web Content and Web Usage Analytics, Page Rank, Structure of Web	L+D	BB+LCD	1	52	28/12/2022
37	Analyzing a Web Graph, Social Network as Graphs and Social Network Analytics	L+D	BB+LCD	1	53	29/12/2022
38	Pedagogy Activity	L+D	BB+LCD	1	54	30/12/2022
39	Revision	L+D	BB+LCD	1	55	31/12/2022

Text Books:

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2. Douglas Eadline, "Hadoop 2 Quick-Start Guide: Learn the Essentials of Big Data Computing in the Apache Hadoop 2 Ecosystem", 1st Edition, Pearson Education, 2016. ISBN-13: 978-9332570351

Reference Books:

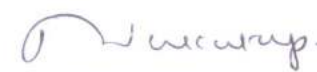
1. Tom White, "Hadoop: The Definitive Guide", 4th Edition, O'Reilly Media, 2015. ISBN-13: 978-9352130672
2. Boris Lublinsky, Kevin T Smith, Alexey Yakubovich, "Professional Hadoop Solutions", 1st Edition, Wrox Press, 2014. ISBN-13: 978-8126551071
3. Eric Sammer, "Hadoop Operations: A Guide for Developers and Administrators", 1st Edition, O'Reilly Media, 2012. ISBN-13: 978-9350239261
4. Arshdeep Bahga, Vijay Madisetti, "Big Data Analytics: A Hands-On Approach", 1st Edition, VPT Publications, 2018. ISBN-13: 978-0996025577

Details of the teaching aids:

Black Board and Power Point Presentation


Course Incharge


Module coordinator


HOD CSE
Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru - 560 109


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BENGALURU - 560 109.



K S INSTITUTE OF TECHNOLOGY, BANGALORE
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : Mr. NAVEEN V
COURSE CODE/TITLE : 21MATCS41/ MATHEMATICAL FOUNDATIONS FOR
COMPUTING, PROBABILITY & STATISTICS
YEAR/ SEMESTER/SECTION : II / IV / A
BRANCH : CSE

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1						
1	Introduction to Correlation and regression	L+D,PS	BB	1	1	17/05/2023
2	Problems on Karl Pearson's coefficient of correlation	L+D,PS	BB	2	3	18/05/2023 22/05/2023
3	Problems on coefficient of rank correlation	L+D,PS	BB	2	5	23/05/2023 24/05/2023
4	Introduction to Regression analysis- lines of regression	L+D,PS	BB	1	6	25/05/2023
5	Problems on lines of regression	L+D,PS	BB	2	8	27/05/2023 29/05/2023
6	Introduction to curve fitting by the method of least squares	L+D,PS	BB	1	9	30/05/2023
7	Problems on fitting the curves of the form- $y = ax + b$	L+D,PS	BB	1	10	31/05/2023
8	Problems on fitting the curves of the form- $y = ax^b$	L+D,PS	BB	1	11	01/06/2023
9	Problems on fitting the curves of the form- $y = ax^2 + bx + c$	L+D,PS	BB	1	12	05/06/2023

Module 2						
10	Introduction to basic probability theory and Random variables (discrete and continuous)	L+D,PS	BB	1	13	06/06/2023
11	Problems on discrete probability mass and density functions	L+D,PS	BB	1	14	07/06/2023
12	Problems on mathematical expectation, mean and variance	L+D,PS	BB	1	15	08/06/2023
13	Binomial distributions- derivations for mean and standard deviation	L+D,PS	BB	1	16	10/06/2023
14	Problems on Binomial distributions	L+D,PS	BB	2	18	12/06/2023 13/06/2023
15	Poisson distributions- derivations for mean and standard deviation	L+D,PS	BB	1	19	14/06/2023
16	Problems on Poisson distributions	L+D,PS	BB	1	20	15/06/2023
IA-1(19/06/2023-21/06/2023)						
17	Problems on continuous probability mass and density functions	L+D,PS	BB	2	22	22/06/2023 24/06/2023
18	Problems on Normal distributions	L+D,PS	BB	2	24	26/06/2023 27/06/2023
Module 3						
19	Joint Probability distribution for two discrete random variables	L+D,PS	BB	1	25	28/06/2023
20	Expectation of Joint Probability distribution	L+D,PS	BB	1	26	03/07/2023
21	Covariance of Joint Probability distribution	L+D,PS	BB	1	27	04/07/2023
22	Correlation of two discrete random variables	L+D,PS	BB	2	29	05/07/2023 06/07/2023
23	Introduction to sampling distributions	L+D,PS	BB	1	30	08/07/2023
24	Standard error- Type-I and Type II errors	L+D,PS	BB	2	32	10/07/2023 11/07/2023
25	Test of hypothesis for means	L+D,PS	BB	1	33	12/07/2023
26	Student's t-distribution	L+D,PS	BB	2	35	13/07/2023 17/07/2023
27	Chi-square distribution as a test of goodness of fit.	L+D,PS	BB	2	37	18/07/2023 19/07/2023
Module 4						

28	Fundamentals of Logic	L+D,PS	BB	1	38	20/07/2023
29	Basic connectives and truth tables	L+D,PS	BB	2	40	22/07/2023 24/07/2023
30	Logical equivalence – The laws of Logic	L+D,PS	BB	2	42	25/07/2023 26/07/2023
31	Logical implication – Rules of Inference	L+D,PS	BB	2	44	27/07/2023 03/08/2023
32	Fundamentals of Logic: The Use of Quantifiers	L+D,PS	BB	2	46	05/08/2023 07/08/2023
IA-2(31/07/2023- 02/08/2023)						
33	Quantifiers and Definitions,	L+D,PS	BB	2	48	08/08/2023 09/08/2023
34	Proofs of Theorems.	L+D,PS	BB	2	50	10/08/2023 14/08/2023
Module 5						
35	Introduction to Cartesian Products and Relations	L+D,PS	BB	1	51	16/08/2023
36	Functions – Plain and One-to-One and Onto Functions	L+D,PS	BB	1	52	17/08/2023
37	Function Composition and Inverse Functions	L+D,PS	BB	1	53	19/08/2023
38	Relations: Properties of Relations	L+D,PS	BB	1	54	21/08/2023
39	Computer Recognition – Zero-One Matrices	L+D,PS	BB	1	55	22/08/2023
40	Directed Graphs	L+D,PS	BB	1	56	23/08/2023
41	Partial Orders – Hasse Diagrams	L+D,PS	BB	1	57	24/08/2023
42	Equivalence Relations and Partitions	L+D,PS	BB	1	58	28/08/2023
43	Introduction to Graph Theory: Definitions and Examples	L+D,PS	BB	1	59	29/08/2023
44	Definitions and Examples of Sub-graphs	L+D,PS	BB	1	60	30/08/2023
45	Complements	L+D,PS	BB	1	61	31/08/2023
46	Graph Isomorphism	L+D,PS	BB	1	62	02/09/2023
47	Vertex Degree, Euler Trails and Circuits	L+D,PS	BB	2	64	04/09/2023 05/09/2023
IA-3(06/09/2023- 08/09/2023)						
48	Revision	L+D,PS	BB	2	66	14/09/2023 16/09/2023

Textbooks:

Textbooks:

1. Ralph P. Grimaldi and B V Ramana, Discrete and Combinatorial Mathematics- An Applied Introduction, Pearson Education, Asia, Fifth edition – 2007. ISBN 978-81- 7758-424-0.
2. Higher Engineering Mathematics B. S. Grewal Khanna Publishers 44th Edition, 2017

Reference Books:

- Kenneth H. Rosen, Discrete Mathematics and its Applications, Tata – McGraw Hill, Sixth Edition, Sixth reprint 2008. ISBN- (13):978-0-07-064824-1.
- Advanced Engineering Mathematics C. Ray Wylie, Louis C.Barrett McGraw-Hill 6th Edition 1995
- Higher Engineering Mathematics B. V. Ramana McGraw-Hill 11th Edition,2010

Web Materials:

List of NPTEL videos for various topics of Discrete Mathematical Structures

<https://www.youtube.com/watch?v=9AUCdsmBGmA&list=PL0862D1A947252D20&index=10>

<https://www.youtube.com/watch?v=oU60TuGHxe0&list=PL0862D1A947252D20&index=11>

<https://www.youtube.com/watch?v=0uTE24o3q-o&list=PL0862D1A947252D20&index=2>

<https://www.youtube.com/watch?v=DmClf8ypks&list=PL0862D1A947252D20&index=3>

<https://www.youtube.com/watch?v=jNeISigUCo0&list=PL0862D1A947252D20&index=4>

<http://nptel.ac.in/courses.php?disciplineID=111>

[http://www.class-central.com/subject/math\(MOOCs\)](http://www.class-central.com/subject/math(MOOCs))

Details of the teaching aids:

- 1.BLACK BOARD USAGE
- 2.SELF STUDY



Signature of Course In-Charge



Signature of Module Coordinator



Signature of HOD

Head of the Department
Dept. of Science and Humanities
K.S. Institute of Technology
Bengaluru - 560 109



Signature of Principal



K.S.INSTITUTE OF TECHNOLOGY, BENGALURU-560109

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME OF THE STAFF : Rashmi H

SUBJECT CODE/NAME: 21CS42 / Design and Analysis of Algorithms

SEMESTER/ SEC / YEAR : IV/B/2023

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Introduction						
1	Introduction	L+ D	BB	1	1	18/5/2023
2	What is an Algorithm? It's Properties. Algorithm Specification-using natural language	L+ D	BB + LCD	1	2	19/5/2023
3	Pseudo code convention, Fundamentals of Algorithmic Problem solving	L+ D	BB + LCD	1	3	22/5/2023
4	Analysis Framework, Time efficiency and space efficiency, Worst-case, Best-case and Average case efficiency	L+D	BB + LCD	1	4	23/5/2023
5	Performance Analysis: Estimating Space complexity and Time complexity of algorithms	L+D	BB + LCD	1	5	25/5/2023
6	Asymptotic Notations: Big-Oh notation (O), Omega notation (Ω), Theta notation (Θ) with examples	L+ D	BB + LCD	1	6	26/5/2023

7	Mathematical analysis of Non-Recursive	L+ D	BB + LCD	1	7	27/5/2023
8	Recursive Algorithms with Examples.	L+ D	BB + LCD	1	8	29/5/2023
9	Brute force design technique: Selection sort	L+D	BB + LCD	1	9	30/5/2023
10	Sequential search	L+D	BB + LCD	1	10	1/6/2023
11	String matching algorithm with complexity Analysis	L+D	BB + LCD	1	11	2/6/2023
12	Revision	L+D	BB + LCD	1	12	5/6/2023
13	Revision	L+D	BB + LCD	1	13	6/6/2023
Module – 2: Divide and Conquer						
14	Divide and Conquer, General method, Recurrence equation for divide and conquer	L+D	BB + LCD	1	14	8/6/2023
15	Solving it using Master's theorem	L+D	BB + LCD	1	15	9/6/2023
16	Divide and Conquer algorithms and complexity Analysis of Finding the maximum & minimum	L+D	BB + LCD	1	16	12/6/2023
17	Binary search	L+D	BB + LCD	1	17	13/6/2023
18	Merge sort	L+D	BB + LCD	1	18	15/6/2023
19	Quick sort	L+D	BB + LCD	1	19	16/6/2023
IA-1 (19/6/2023)						
20	Decrease and Conquer Approach: Introduction	L+D	BB + LCD	1	20	22/6/2023
21	Insertion sort.	L+D	BB + LCD	1	21	23/6/2023
22	Graph searching algorithms	L+D	BB + LCD	1	22	24/6/2023
23	Topological Sorting	L+D	BB + LCD	1	23	26/6/2023
24	Efficiency analysis.	L+D	BB + LCD	1	24	27/6/2023
25	Revision	L+D	BB + LCD	1	25	30/6/2023
26	Revision	L+D	BB + LCD	1	26	3/7/2023
Module-3: Greedy Method						
27	Greedy Method: General method	L+D	BB + LCD	1	27	4/7/2023
28	Coin Change Problem	L+D	BB + LCD	1	28	6/7/2023
29	Knapsack Problem	L+D	BB + LCD	1	29	7/7/2023
30	Solving Job sequencing with deadlines Problems	L+D	BB + LCD	1	30	10/7/2023
31	Minimum cost spanning trees: Prim's Algorithm	L+D	BB + LCD	1	31	11/7/2023
32	Kruskal's Algorithm with performance analysis	L+ D	BB + LCD	1	32	13/7/2023

33	Single source shortest paths: Dijkstra's Algorithm	L+ D	BB + LCD	1	33	14/7/2023
34	Optimal Tree problem	L+ D	BB + LCD	1	34	17/7/2023
35	Huffman Trees and Codes	L+ D	BB + LCD	1	35	18/7/2023
36	Transform and Conquer Approach	L+ D	BB + LCD	1	36	20/7/2023
37	Heaps and Heap Sort.	L+ D	BB + LCD	1	37	21/7/2023
38	Revision	L+ D	BB + LCD	1	38	22/7/2023
39	Revision	L+ D	BB + LCD	1	39	27/7/2023
Module- 4: Dynamic Programming						
40	Dynamic Programming: General method with Examples,.	L+ D	BB + LCD	1	40	25/7/2023
41	Multistage Graphs	L+ D	BB + LCD	1	41	26/7/2023
42	Transitive Closure: Warshall's Algorithm	L+ D	BB + LCD	1	42	27/7/2023
43	All Pairs Shortest Paths: Floyd's Algorithm.	L+ D	BB + LCD	1	43	28/7/2023
IA – 2 (31/7/2023)						
44	Knapsack problem	L+ D	BB + LCD	1	44	3/8/2023
45	Bellman-Ford Algorithm	L+ D	BB + LCD	1	45	4/8/2023
46	Travelling Sales Person problem	L+ D	BB + LCD	1	46	5/8/2023
47	Space-Time Tradeoffs: Introduction, Sorting by Counting	L+ D	BB + LCD	1	47	7/8/2023
48	Input Enhancement in String Matching - Harspool's algorithm.	L+ D	BB + LCD	1	48	8/8/2023
49	Harspool's algorithm.	L+ D	BB + LCD	1	49	10/8/2023
50	Revision	L+ D	BB + LCD	1	50	11/8/2023
51	Revision	L+ D	BB + LCD	1	51	14/8/2023
Module- 5: Backtracking						
52	Backtracking: General method	L+ D	BB + LCD	1	52	17/8/2023
53	Solution using back tracking to N-Queens problem	L+ D	BB + LCD	1	53	18/8/2023
54	Sum of subsets problem	L+ D	BB + LCD	1	54	19/8/2023
55	Graph coloring	L+ D	BB + LCD	1	55	21/8/2023
56	Hamiltonian cycles Problems	L+ D	BB + LCD	1	56	22/8/2023
57	Travelling Sales Person problem	L+ D	BB + LCD	1	57	24/8/2023
58	0/1 Knapsack problem	L+ D	BB + LCD	1	58	25/8/2023
59	NP-Complete and NP-Hard problems: Basic concepts	L+ D	BB + LCD	1	59	28/8/2023
60	Non- deterministic algorithms, P	L+ D	BB + LCD	1	60	29/8/2023

61	Non- deterministic algorithms NP	L+ D	BB + LCD	1	61	31/8/2023
62	NP- Complete, NP-Hard classes	L+ D	BB + LCD	1	62	1/9/2023
63	Revision	L+ D	BB + LCD	1	63	4/9/2023
64	Revision	L+ D	BB + LCD	1	64	5/9/2023
IA – 3 (6/9/2023)						

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Introduction						
1	Sort a given set of n integer elements using Selection Sort method and compute its time complexity. Run the program for varied values of n> 5000 and record the time taken to sort. Plot a graph of the time taken versus n. The elements can be read from a file or can be generated using the random number generator. Demonstrate using C++/Java how the brute force method works along with its time complexity analysis: worst case, average case and best case.	L+ D	BB + LCD	3	3	B1: 22/5/2023 B2: 23/5/2023 B3: 17/5/2023 B4: 18/5/2023
Module – 2: Divide and Conquer						
2	Sort a given set of n integer elements using Quick Sort method and compute its time complexity. Run the program for varied values of n> 5000 and record the time taken to sort. Plot a graph of the time taken versus n. The elements can be read from a file or can be generated using the random number generator. Demonstrate using C++/Java how the divide-and-conquer method works along with its time complexity analysis: worst case, average case and best case.	L+ D	BB + LCD	3	6	B1: 29/5/2023 B2: 30/5/2023 B3: 24/5/2023 B4: 25/5/2023
3	Sort a given set of n integer elements using Merge	L+ D	BB + LCD	3	9	B1: 5/6/2023

	Sort method and compute its time complexity. Run the program for varied values of $n > 5000$, and record the time taken to sort. Plot a graph of the time taken versus n . The elements can be read from a file or can be generated using the random number generator. Demonstrate using C++/Java how the divide-and-conquer method works along with its time complexity analysis: worst case, average case and best case.					B2: 6/6/2023 B3: 31/5/2023 B4: 1/6/2023
Module- 3: Greedy Method						
4	To solve Knapsack problem using Greedy method	L+ D	BB + LCD	3	12	B1: 12/6/2023 B2: 13/6/2023 B3: 7/6/2023 B4: 8/6/2023
5	To find shortest paths to other vertices from a given vertex in a weighted connected graph, using Dijkstra's algorithm.	L+ D	BB + LCD	3	15	B1: 26/6/2023 B2: 27/6/2023 B3: 10/6/2023 B4: 15/6/2023
6	To find Minimum Cost Spanning Tree of a given connected undirected graph using Kruskal's algorithm. Use Union-Find algorithms in your program	L+ D	BB + LCD	3	18	B1: 3/7/2023 B2: 4/7/2023 B3: 14/6/2023 B4: 22/6/2023
7	To find Minimum Cost Spanning Tree of a given connected undirected graph using Prim's algorithm	L+ D	BB + LCD	3	21	B1: 10/7/2023 B2: 11/7/2023 B3: 28/6/2023 B4: 6/07/2023
Module- 4: Dynamic Programming						
8	Solve All-Pairs Shortest Paths problem using Floyd's algorithm	L+ D	BB + LCD	3	24	B1: 17/7/2023 B2: 18/7/2023 B3: 05/7/2023 B4: 13/7/2023
9	Solve All-Pairs Shortest Paths problem using Floyd's algorithm	L+ D	BB + LCD	3	27	B1: 24/7/2023 B2: 25/7/2023 B3: 12/7/2023

						B4: 20/7/2023
10	Solve 0/1 Knapsack problem using Dynamic Programming method.	L+ D	BB + LCD	3	30	B1: 7/8/2023 B2: 8/8/2023 B3: 19/7/2023 B4: 27/7/2023
Module- 5 : Backtracking						
11	Design and implement C++/Java Program to find a subset of a given set $S = \{S_1, S_2, \dots, S_n\}$ of n positive integers whose SUM is equal to a given positive integer d. For example, if $S = \{1, 2, 5, 6, 8\}$ and $d= 9$, there are two solutions $\{1, 2, 6\}$ and $\{1, 8\}$. Display a suitable message, if the given problem instance doesn't have a solution.	L+ D	BB + LCD	3	33	B1: 14/8/2023 B2: 22/8/2023 B3: 26/7/2023 B4: 03/8/2023
12	Design and implement C++/Java Program to find all Hamiltonian Cycles in a connected undirected Graph G of n vertices using backtracking principle.	L+ D	BB + LCD	3	36	B1: 21/8/2023 B2: 29/8/2023 B3: 9/8/2023 B4: 10/8/2023
13	Revision	L+D	BB + LCD	3	39	B1: 28/8/2023 4/9/2023 B2: 5/9/2023 B3: 16/8/2023 23/8/2023 B4: 17/8/2023 24/8/2023
14	Internal Assessment			3	42	B1: 11/9/2023 B2: 12/9/2023 B3: 13/9/2023 B4: 13/9/2023

Total Number of Hours for theory - 64 HR

Total Number of Hours for Laboratory - 39 HR

Total Number of Hours for theory and Laboratory- 103 HR

TEXT BOOK:

1. Introduction to the Design and Analysis of Algorithms, Anany Levitin: 2nd Edition, 2009. Pearson.
2. Computer Algorithms/C++, Ellis Horowitz, SatrajSahni and Rajasekaran, 2nd Edition, 2014, Universities Press.

REFERENCES:

1. Introduction to Algorithms, Thomas H. Cormen, Charles E. Leiserson, Ronal L. Rivest, Clifford Stein, 3rd Edition, PHI.
2. Design and Analysis of Algorithms, S. Sridhar, Oxford (Higher Education)

Details for the teaching Aids

- Black Board and LCD

Rashmi. H

Signature of course In-charge



Signature of Module Coordinator



Signature of HOD

Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109



Signature of Principal

PRINCIPAL
K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109.



K S INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

NAME OF THE STAFF : Mr. SANJOY DAS

SUBJECT CODE/NAME : 21CS43/ MICROCONTROLLER AND EMBEDDED SYSTEMS

SEMESTER/YEAR : IVA/ II

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	Introduction to Microprocessors & Microcontrollers	L+D	BB	1	1	17/05/2023
2	Microprocessors versus Microcontrollers	L+ D	BB	1	2	18/05/2023
3	The RISC design philosophy	L+ D	BB	1	3	19/05/2023
4	The ARM Design Philosophy	L+D	BB	1	4	22/05/2023
5	Embedded System Hardware and Software	L+D	BB	1	5	24/05/2023
6	ARM Registers	L+D	BB	1	6	25/05/2023
7	ARM Current Program Status Register	L+D	BB	1	7	26/05/2023
8	ARM Pipeline	L+D	BB	1	8	29/05/2023
9	ARM Exceptions, Interrupts, and the Vector Table	L+D	BB	1	9	31/05/2023
10	ARMCORE Extensions	L+D	BB	1	10	01/06/2023
MODULE 2						
11	ARM Data Processing Instructions	L+ D	BB	1	11	02/06/2023
12	ARM Branch Instructions	L+D	BB	1	12	05/06/2023
13	ARM Software Interrupt Instructions	L+D	BB	1	13	07/06/2023

14	ARM Program Status Register Instructions	L+D	BB	1	14	08/06/2023
15	ARM Coprocessor Instructions and Loading Constants	L+D	BB	1	15	09/06/2023
16	Basic C Data Types	L+D	BB	1	16	10/06/2023
17	C Looping Structures	L+D	BB	1	17	12/06/2023
18	Register Allocation	L+D	BB	1	18	14/06/2023
19	Function Calls	L+D	BB	1	19	15/06/2023
20	Pointer Aliasing	L+D	BB	1	20	16/06/2023
MODULE 3						
21	Structure Arrangement and Bit-fields	L+D	BB	1	21	22/06/2023
22	Unaligned Data and Endianness	L+D	BB	1	22	23/06/2023
23	Division and Floating Point	L+D	BB	1	23	26/06/2023
24	Inline Functions and Inline Assembly	L+D	BB	1	24	28/06/2023
25	Portability Issues	L+D	BB	1	25	30/06/2023
26	Writing Assembly code	L+D	BB	1	26	06/07/2023
27	Profiling and cycle counting	L+D	BB	1	27	07/07/2023
28	Instruction scheduling	L+D	BB	1	28	08/07/2023
29	Register Allocation	L+D	BB	1	29	10/07/2023
30	Conditional Execution and Looping Constructs	L+D	BB	1	30	12/07/2023
MODULE 4						
31	Embedded Vs General computing system	L+D	BB	1	31	13/07/2023
32	History of embedded systems	L+D	BB	1	32	14/07/2023
33	Classification of Embedded systems	L+D	BB	1	33	17/07/2023
34	Major applications areas of embedded systems	L+D	BB	1	34	19/07/2023
35	Purpose of embedded systems.	L+D	BB	1	35	20/07/2023
36	Core of an Embedded System including all types of processor/controller	L+D	BB	1	36	21/07/2023
37	Memory, Sensors and Actuators	L+D	BB	1	37	24/07/2023
38	LED, 7 segment LED display and stepper motor	L+D	BB	1	38	26/07/2023
39	Keyboard, Push button switch, and Communication Interface	L+D	BB	1	39	27/07/2023
40	Embedded firmware and Other system components	L+D	BB	1	40	28/07/2023



K S INSTITUTE OF TECHNOLOGY BENGALURU
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

NAME OF THE STAFF : **Supreetha Ganesh & Sanjoy Das**

SUBJECT CODE/NAME: 21CS43/Microcontrollers and Embedded systems

SEMESTER/YEAR/SEC: IV/B

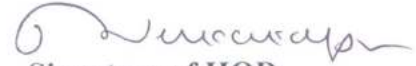
ACADEMIC YEAR: **2022-2023**

Sl. No.	Topic to be covered	Teaching Aid	No. of Periods	Proposed Date
1	MODULE 1 INTRODUCTION 1. Write a program to multiply two 16 bit binary numbers	LCD	3	B2: 17-05-2023 B1:18-05-2023 B3:22-05-2023 B4:23-05-2023
2	MODULE 2 2. Write a program to find the sum of first 10 integer numbers 3. Write a program to find factorial of a number. 4. Write a program to add an array of 16 bit numbers and store the 32 bit result in internal RAM	LCD	3	B2: 24-05-2023 B1:25-05-2023 B3:29-05-2023 B4:30-05-2023
3	5. Write a program to find the square of a number (1 to 10) using look-up table. 6. Write a program to find the largest/smallest number in an array of 32 numbers	LCD	3	B2: 31-05-2023 B1:01-06-2023 B3:05-06-2023 B4:06-06-2023
4	MODULE 3:	LCD	3	B2: 12-06-2023

				B4:27-07-2023
10	15.Demonstrate the use of an external interrupt to toggle an LED On/Off.	LCD	3	B2:07-08-2023 B1:25-07-2023 B3:16-08-2023 B4:17-08-2023
11	16.Display the Hex digits 0 to F on a 7-segment LED interface, with an appropriate delay in between	LCD	3	B2:21-07-2023 B1:08-08-2023 B3:23-08-2023 B4:24-08-2023
12	REVISION	LCD	3	B2:04-08-2023 B1:29-08-2023 B3:30-08-2023 B4: 31-08-2023
13	Lab Internals			B2:11-09-2023 B1:12-09-2023 B3:13-09-2023 B4: 14-09-2023


Signature of course In-charge


Signature of Module coordinator


Signature of HOD
Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109



KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME OF THE STAFF : Dr. PRASANTHA H S
SUBJECT CODE/NAME : 21CS43/Microcontrollers and Embedded system
SEMESTER/YEAR : IV B/ II
ACADEMIC YEAR : 2022-2023 (Even)

Sl.No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: ARM Embedded Systems:						
1	Introduction to the course	BB		-		17/5/2023
2	Prerequisites – Review of Number systems	BB		-		18/5/2023
3	Microprocessors versus Microcontrollers	BB		1	1	22/5/2023
4	ARM Embedded Systems: The RISC design philosophy	BB		1	2	23/5/2023
5	The RISC design philosophy (Contd...)	BB		1	3	24/5/2023
6	The ARM Design Philosophy	BB		1	4	29/5/2023
7	The ARM Design Philosophy (Contd...)	BB		1	5	30/5/2023
8	Embedded System Hardware	BB		1	6	31/5/2023
9	Embedded System Software	BB		1	7	2/6/2023
10	ARM Processor Fundamentals: Registers	BB		1	8	5/6/2023
11	Current Program Status Register	BB		1	9	6/6/2023
12	Pipeline, Exceptions, Interrupts, and the Vector Table	BB		1	10	7/6/2023
13	Core Extensions	BB		1	11	9/6/2023
MODULE 2: Introduction to the ARM Instruction Set, C Compilers and Optimization						
14	Introduction to the ARM Instruction Set	BB		1	12	10/6/2023
15	Data Processing Instructions	BB		1	13	12/6/2023
16	Branch Instructions	BB		1	14	13/6/2023
17	Software Interrupt Instructions, Program Status Register Instructions	BB		1	15	14/6/2023
18	Coprocessor Instructions, Loading Constants	BB		1	16	16/6/2023
IA 1: 19TH JUNE TO 21ST JUNE						
19	C Compilers and Optimization :Basic C Data Types	BB		1	17	24/6/2023
20	C Compilers and Optimization :Basic C Data Types (Contd...)	BB		1	18	26/6/2023
21	C Looping Structures	BB		1	19	27/6/2023
22	Register Allocation	BB		1	20	30/6/2023
MODULE 3: C Compilers and Optimization, ARM programming using Assembly language:						
23	Function Calls	BB		1	21	3/7/2023

24	Pointer Aliasing	BB		1	22	4/7/2023
25	Structure Arrangement	BB		1	23	5/7/2023
26	Bit-fields	BB		1	24	7/7/2023
27	Unaligned Data and Endianness	BB		1	25	8/7/2023
28	Unaligned Data and Endianness (Contd...)	BB		1	26	10/7/2023
29	Division	BB		1	27	11/7/2023
30	Floating Point Inline Functions and Inline Assembly, Portability Issues	BB		1	28	12/7/2023
31	ARM programming using Assembly language: Writing Assembly code	BB		1	29	14/7/2023
32	Profiling and cycle counting	BB		1	30	17/7/2023
33	instruction scheduling, Register Allocation	BB		1	31	18/7/2023
34	Conditional Execution	BB		1	32	19/7/2023
35	Looping Constructs	BB		1	33	21/7/2023
MODULE 4: Embedded System Components						
36	Embedded System Components: Embedded Vs General computing system	BB		1	34	22/7/2023
37	History of embedded systems, Classification of Embedded systems	BB		1	35	24/7/2023
38	Major applications areas of embedded systems, purpose of embedded systems	BB		1	36	25/7/2023
39	Core of an Embedded System including all types of processor/controller	BB		1	37	26/7/2023
40	Core of an Embedded System including all types of processor/controller (Contd...)	BB		1	38	28/7/2023
IA 1: 31st JULY TO 2nd AUGUST						
41	Memory	BB		1	39	4/8/2023
42	Sensors, Actuators	BB		1	40	7/8/2023
43	Sensors, Actuators (Contd...), LED, 7 segment LED display, stepper motor, Keyboard, Push button switch	BB		1	41	8/8/2023
44	Communication Interface (onboard and external types)	BB		1	42	9/8/2023
45	Communication Interface (onboard and external types)	BB		1	43	11/8/2023
46	Embedded firmware, Other system components	BB		1	44	14/8/2023
MODULE 5: RTOS and IDE for Embedded System Design:						
47	RTOS and IDE for Embedded System Design: Operating System basics	BB		1	45	16/8/2023
48	Types of operating systems	BB		1	46	18/8/2023
49	Task, process and threads (Only POSIX Threads with an example program)	BB		1	47	19/8/2023
50	Thread preemption, Multiprocessing and Multitasking	BB		1	48	21/8/2023
51	Task Communication (without any program)	BB		1	49	22/8/2023

52	Task synchronization issues – Racing and Deadlock	BB		1	50	23/8/2023
53	Task synchronization issues – Racing and Deadlock, Concept of Binary and counting semaphores (Mutex example without any program)	BB		1	51	25/8/2023
54	How to choose an RTOS	BB		1	52	28/8/2023
55	Integration and testing of Embedded hardware and firmware	BB		1	53	29/8/2023
56	Embedded system Development Environment – Block diagram (excluding Keil)	BB		1	54	30/8/2023
57	Disassembler/decompiler, simulator, emulator and debugging techniques	BB		1	55	1/9/2023
58	Target hardware debugging, boundary scan	BB		1	56	2/9/2023
59	REVISION	BB		1	57	4/9/2023
60	REVISION	BB		1	58	5/9/2023
61	REVISION	BB		1	59	15/9/2023

Text books

1. Andrew N Sloss, Dominic Symes and Chris Wright, ARM system developers guide, Elsevier, Morgan Kaufman publishers, 2008.
2. Shibu K V, “Introduction to Embedded Systems”, Tata McGraw Hill Education, Private Limited, 2nd Edition.

Reference Books

1. Raghunandan. G.H, Microcontroller (ARM) and Embedded System, Cengage learning Publication, 2019
2. The Insider’s Guide to the ARM7 Based Microcontrollers, Hitex Ltd., 1st edition, 2005.
3. Steve Furber, ARM System-on-Chip Architecture, Second Edition, Pearson, 2015.
4. Raj Kamal, Embedded System, Tata McGraw-Hill Publishers, 2nd Edition, 2008.

Web Resources:


1. https://doc.lagout.org/electronics/Game%20boy%20advance/ARM_BOOKS/ARM_System_Developers_Guide-Designing_and_Optimizing_System_Software.pdf
2. <https://www.ele.uva.es/~jesman/BigSeti/ftp/Microcontroladores/ARM/Arm%20System-On-Chip%20Architecture.pdf>
3. <https://www.arm.com/resources/education/books>
4. <https://archive.org/details/K.ShibuIntroductionToEmbeddedSystemsTmh2009>
5. <https://sushmatoravi.files.wordpress.com/2017/08/233633895-intro-to-embedded-systems-by-shibu-kv.pdf>



Signature of Course In-Charge



Signature of Module Coordinator



Signature of HOD-CSE

Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109



K S INSTITUTE OF TECHNOLOGY BENGALURU

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

NAME OF THE STAFF: Laxmikantha K

SUBJECT CODE/NAME: 21CSL46/Python Programming Laboratory

SEMESTER/YEAR/SEC: IV/II/A

ACADEMIC YEAR: 2022-2023

Sl. No.	Topic to be covered (PART – A)	Teaching Aid	No. of Periods	Batch No.	Proposed Date
1	a) Write a python program to find the best of two test average marks out of three test's marks accepted from the user. b) Develop a Python program to check whether a given number is palindrome or not and also count the number of occurrences of each digit in the input number.	LCD	3	A1	19/5/2023
		LCD	3	A2	18/5/2023
		LCD	3	A3	30/5/2023
		LCD	3	A4	31/5/2023
2	a) Defined as a function F as $F_n = F_{n-1} + F_{n-2}$. Write a Python program which accepts a value for N (where $N > 0$) as input and pass this value to the function. Display suitable error message if the condition for input value is not followed. b) Develop a python program to convert binary to decimal, octal to hexadecimal using functions	LCD	3	A1	2/6/2023
		LCD	3	A2	1/6/2023
		LCD	3	A3	6/6/2023
		LCD	3	A4	7/6/2023

3.	a) Write a Python program that accepts a sentence and find the number of words, digits, uppercase letters and lowercase letters.	LCD	3	A1	9/6/2023
		LCD	3	A2	8/6/2023
	b) Write a Python program to find the string similarity between two given strings Sample Output: Original string: Python Exercises Python Exercises Similarity between two said strings: 1.0 Sample Output: Original string: Python Exercises Python Exercise Similarity between two said strings: 0.967741935483871	LCD	3	A3	13/6/2023
		LCD	3	A4	10/6/2023

4	a) Write a python program to implement insertion sort and merge sort using lists	LCD	3	A1	16/6/2023
		LCD	3	A2	15/6/2023
	b) Write a program to convert roman numbers in to integer values using dictionaries.	LCD	3	A3	20/6/2023
		LCD	3	A4	14/6/2023
5	a) Write a function called isphonenumner () to recognize a pattern 415-555-4242 without using regular expression and also write the code to recognize the same pattern using regular expression.	LCD	3	A1	30/6/2023
		LCD	3	A2	6/7/2023
	b) Develop a python program that could search the text in a file for phone numbers (+919900889977) and email addresses (sample@gmail.com)	LCD	3	A3	11/7/2023
		LCD	3	A4	12/7/2023

6	a) Write a python program to accept a file name from the user and perform the following operations 1. Display the first N line of the file 2. Find the frequency of occurrence of the word accepted from the user in the file	LCD	3	A1	7/7/2023
		LCD	3	A2	13/7/2023
	b) Write a python program to create a ZIP file of a particular folder which contains several files inside it.	LCD	3	A3	18/7/2023
		LCD	3	A4	19/7/2023
7	a) By using the concept of inheritance write a python program to find the area of triangle, circle and rectangle.	LCD	3	A1	14/7/2023
		LCD	3	A2	20/7/2023
	b) Write a python program by creating a class called Employee to store the details of Name, Employee ID, Department and Salary, and implement a method to update salary of employees belonging to a given department.	LCD	3	A3	25/7/2023
		LCD	3	A4	26/07/2023

8	a) Write a python program to find the whether the given input is palindrome or not (for both string and integer) using the concept of polymorphism and inheritance.	LCD	3	A1	21/7/2023
		LCD	3	A2	27/7/2023
		LCD	3	A3	8/8/2023
		LCD	3	A4	9/8/2023


9	a) Write a python program to download the all XKCD comics	LCD	3	A1	28/7/2023
		LCD	3	A2	3/8/2023
	b) Demonstrate python program to read the data from the spreadsheet and write the data in to the spreadsheet	LCD	3	A3	22/8/2023
		LCD	3	A4	16/8/2023

10	a) Write a python program to combine select pages from many PDFs	LCD	3	A1	4/8/2023
		LCD	3	A2	10/8/2023
	b) Write a python program to fetch current weather data from the JSON file	LCD	3	A3	29/8/2023
		LCD	3	A4	23/8/2023

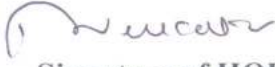
11	(PART – B) Practical Based Learning	LCD	3	A1	11/8/2023
		LCD	3	A2	17/8/2023
		LCD	3	A3	16/8/2023
		LCD	3	A4	30/8/2023


12	(PART – B) Practical Based Learning	LCD	3	A1	18/8/2023
		LCD	3	A3	23/8/2023
		LCD	3	A4	24/8/2023

13	Internal Assessment		3	A1	25/8/2023
			3	A2	12/9/2023
			3	A3	13/9/2023
			3	A4	13/9/2023


Signature of course In-charge


Signature of Module Coordinator


Signature of HOD
Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru - 560 109


Signature of Principal
PRINCIPAL
K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109.



KS INSTITUTE OF TECHNOLOGY BANGALORE
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME OF THE STAFF : Dr. Prashantha H S, Ms. Namyapriya Dayananda, Mr. Kushal Kumar B N
SUBJECT CODE /NAME : 21CSL483 /R PROGRAMMING
SEMESTER/YEAR : IV A / B
ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	TeachingAid	No. of Periods	Cumulative No. of Periods	Batch	Proposed Date
MODULE 1							
1	Introduction to R. Numeric, Arithmetic, Assignment, and Vectors- R for Basic Math, Arithmetic.	L+D+P	LCD+BB	3	3	A1	18/5/2023
		L+D+P	LCD+BB	3	3	A2	19/5/2023
		L+D+P	LCD+BB	3	3	A3	17/5/2023
		L+D+P	LCD+BB	3	3	A4	30/5/2023
		L+D+P	LCD+BB	3	3	B1	17/5/2023
		L+D+P	LCD+BB	3	3	B2	18/5/2023
		L+D+P	LCD+BB	3	3	B3	30/5/2023
		L+D+P	LCD+BB	3	3	B4	29/5/2023
2	Variables, Functions, Vectors, Expressions and assignments Logical expressions.	L+D+P	LCD+BB	3	6	A1	01/06/2023
		L+D+P	LCD+BB	3	6	A2	02/06/2023
		L+D+P	LCD+BB	3	6	A3	31/5/2023
		L+D+P	LCD+BB	3	6	A4	06/06/2023
		L+D+P	LCD+BB	3	6	B1	25/5/2023
		L+D+P	LCD+BB	3	6	B2	01/06/2023
		L+D+P	LCD+BB	3	6	B3	06/06/2023

		L+D+P	LCD+BB	3	6	B4	05/06/2023
MODULE 2							
3	Matrices and Arrays: Defining a Matrix, Sub-setting, Matrix Operations	L+D+P	LCD+BB	3	9	A1	08/06/2023
		L+D+P	LCD+BB	3	9	A2	09/06/2023
		L+D+P	LCD+BB	3	9	A3	07/06/2023
		L+D+P	LCD+BB	3	9	A4	13/06/2023
		L+D+P	LCD+BB	3	9	B1	31/5/2023
		L+D+P	LCD+BB	3	9	B2	08/06/2023
		L+D+P	LCD+BB	3	9	B3	13/06/2023
		L+D+P	LCD+BB	3	9	B4	12/06//2023
4	Conditions and Looping: if statements, looping with for, looping with while, vector-based programming	L+D+P	LCD+BB	3	12	A1	15/06/2023
		L+D+P	LCD+BB	3	12	A2	16/06/2023
		L+D+P	LCD+BB	3	12	A3	10/06/2023
		L+D+P	LCD+BB	3	12	A4	20/06/2023
		L+D+P	LCD+BB	3	12	B1	07/06/2023
		L+D+P	LCD+BB	3	12	B2	15/06/2023
		L+D+P	LCD+BB	3	12	B3	20/06/2023
		L+D+P	LCD+BB	3	12	B4	19/06/2023
MODULE 3							
5	Data Frames	L+D+P	LCD+BB	3	15	A1	22/06/2023
		L+D+P	LCD+BB	3	15	A2	23/06/2023
		L+D+P	LCD+BB	3	15	A3	14/06/2023
		L+D+P	LCD+BB	3	15	A4	24/06/2023

		L+D+P	LCD+BB	3	15	B1	10/06/2023
		L+D+P	LCD+BB	3	15	B2	22/06/2023
		L+D+P	LCD+BB	3	15	B3	04/07/2023
		L+D+P	LCD+BB	3	15	B4	03/07/2023
6	Lists, Special values, The apply family	L+D+P	LCD+BB	3	18	A1	06/07/2023
		L+D+P	LCD+BB	3	18	A2	30/06/2023
		L+D+P	LCD+BB	3	18	A3	21/06/2023
		L+D+P	LCD+BB	3	18	A4	04/07/2023
		L+D+P	LCD+BB	3	18	B1	14/06/2023
		L+D+P	LCD+BB	3	18	B2	06/07/2023
		L+D+P	LCD+BB	3	18	B3	11/07/2023
		L+D+P	LCD+BB	3	18	B4	10/07/2023
MODULE 4							
7	Functions: Calling functions, scoping, Arguments matching, writing functions	L+D+P	LCD+BB	3	21	A1	13/07/2023
		L+D+P	LCD+BB	3	21	A2	07/07/2023
		L+D+P	LCD+BB	3	21	A3	05/07/2023
		L+D+P	LCD+BB	3	21	A4	11/07/2023
		L+D+P	LCD+BB	3	21	B1	21/06/2023
		L+D+P	LCD+BB	3	21	B2	13/07/2023
		L+D+P	LCD+BB	3	21	B3	18/07/2023
		L+D+P	LCD+BB	3	21	B4	17/07/2023
8	The function command, Arguments, specialized function.	L+D+P	LCD+BB	3	24	A1	20/07/2023
		L+D+P	LCD+BB	3	24	A2	17/07/2023
		L+D+P	LCD+BB	3	24	A3	12/07/2023
		L+D+P	LCD+BB	3	24	A4	18/07/2023

		L+D+P	LCD+BB	3	24	B1	05/07/2023
		L+D+P	LCD+BB	3	24	B2	20/07/2023
		L+D+P	LCD+BB	3	24	B3	22/07/2023
		L+D+P	LCD+BB	3	24	B4	24/07/2023
MODULE 5							
9	Pointers: packages, frames, de bugging	L+D+P	LCD+BB	3	27	A1	27/07/2023
		L+D+P	LCD+BB	3	27	A2	21/07/2023
		L+D+P	LCD+BB	3	27	A3	19/07/2023
		L+D+P	LCD+BB	3	27	A4	22/07/2023
		L+D+P	LCD+BB	3	27	B1	08/07/2023
		L+D+P	LCD+BB	3	27	B2	27/07/2023
		L+D+P	LCD+BB	3	27	B3	25/07/2023
		L+D+P	LCD+BB	3	27	B4	19/08/2023
10	Manipulation of code, compilation of the code	L+D+P	LCD+BB	3	30	A1	10/08/2023
		L+D+P	LCD+BB	3	30	A2	28/07/2023
		L+D+P	LCD+BB	3	30	A3	26/07/2023
		L+D+P	LCD+BB	3	30	A4	25/07/2023
		L+D+P	LCD+BB	3	30	B1	12/07/2023
		L+D+P	LCD+BB	3	30	B2	10/08/2023
		L+D+P	LCD+BB	3	30	B3	22/08/2023
		L+D+P	LCD+BB	3	30	B4	21/08/2023
REVISION							
11	Practice Questions	L+D+P	LCD+BB	3	30	A1	16/5/2023
		L+D+P	LCD+BB	3	30	A2	11/08/2023
		L+D+P	LCD+BB	3	33	A3	09/08/2023

		L+D+P	LCD+BB	3	33	A4	22/08/2023
		L+D+P	LCD+BB	3	33	B1	19/07/2023
		L+D+P	LCD+BB	3	33	B2	17/07/2023
		L+D+P	LCD+BB	3	33	B3	29/08/2023
		L+D+P	LCD+BB	3	33	B3	28/08/2023
12	Practice Questions	L+D+P	LCD+BB	3	36	A1	17/08/2023
		L+D+P	LCD+BB	3	36	A2	18/08/2023
		L+D+P	LCD+BB	3	36	A3	16/08/2023
		L+D+P	LCD+BB	3	36	B1	26/07/2023
		L+D+P	LCD+BB	3	36	B3	24/08/2023
13	Practice Questions	L+D+P	LCD+BB	3	39	A1	24/08/2023
		L+D+P	LCD+BB	3	39	A2	25/08/2023
		L+D+P	LCD+BB	3	39	A3	23/08/2023
		L+D+P	LCD+BB	3	39	A4	29/08/2023
		L+D+P	LCD+BB	3	39	B1	09/08/2023
14	Practice Questions	L+D+P	LCD+BB	3	41	A1	31/08/2023
		L+D+P	LCD+BB	3	41	A2	01/09/2023
		L+D+P	LCD+BB	3	41	A3	30/08/2023
		L+D+P	LCD+BB	3	41	B1	16/08/2023
15	Practice Questions	L+D+P	LCD+BB	3	44	B1	23/08/2023
16	Practice Questions	L+D+P	LCD+BB	3	47	B1	30/08/2023

Text Books:

1. Jones, O., Maillardet, R. and Robinson, A. (2014). Introduction to Scientific Programming and Simulation Using R. Chapman & Hall/CRC, The R Series.

Reference Books, Web reference:

1. Michael J. Crawley, "Statistics: An Introduction using R", Second edition, Wiley, 2015.

Web Materials:

1. Wickham, H. & Grolemund, G. (2018). for Data Science. O'Reilly: New York. Available for free at <http://r4ds.had.co.nz>
Black Board and LCD



Signature of Course In-Charge



Signature of Module Coordinator



Signature of HOD-CSE

*Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109*



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : ABHILASH L BHAT
COURSE CODE/TITLE : 21UH49/UNIVERSAL HUMAN VALUES
YEAR/ SEMESTER/SECTION : 2nd / 4th
BRANCH : COMPUTER SCIENCE & ENGINEERING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1						
1	Right Understanding, Relationship and Physical Facility (Holistic Development and the Role of Education)	L+D	LCD+BB	1	1	23/05/23
2	Understanding Value Education, Self-exploration as the Process for Value Education	L+D	LCD+BB	1		27/05/23
3	Continuous Happiness and Prosperity – the Basic Human Aspirations	L+D	LCD+BB	1	2	30/05/23
4	Happiness and Prosperity – Current Scenario, Method to Fulfil the Basic Human Aspirations	L+D	LCD+BB	1	3	06/06/23
Module 2						
5	Understanding Human being as the Co-existence of the Self and the Body, Distinguishing between the Needs of the Self and the Body	L+D	LCD+BB	1	4	13/06/23
6	Internal Assessment Test - I				5	21/06/23
7	The Body as an Instrument of the Self, Understanding Harmony in the Self					24/06/23

8	Harmony of the Self with the Body, Programme to ensure self-regulation and Health	L+D	LCD+BB	1	6	27/06/23
Module 3						
9	Harmony in the Family – the Basic Unit of Human Interaction, 'Trust' – the Foundational Value in Relationship	L+D	LCD+BB	1	7	04/07/23
10	'Respect' – as the Right Evaluation, Other Feelings, Justice in Human-to-Human Relationship	L+D	LCD+BB	1	8	11/07/23
11	Understanding Harmony in the Society, Vision for the Universal Human Order	L+D	LCD+BB	1	9	18/07/23
Module 4						
12	Understanding Harmony in the Nature, Interconnectedness					22/07/23
13	self-regulation and Mutual Fulfilment among the Four Orders of Nature	L+D	LCD+BB	1	10	25/07/23
14	Internal Assessment Test - II				11	02/08/23
15	Realizing Existence as Co-existence at All Levels, The Holistic Perception of Harmony in Existence					08/08/23
Module 5						
16	Natural Acceptance of Human Values, Definitiveness of (Ethical) Human Conduct	L+D	LCD+BB	1	12	22/08/23
17	A Basis for Humanistic Education, Humanistic Constitution and Universal Human Order				13	29/08/23
18	Competence in Professional Ethics Holistic Technologies, Production Systems and Management Models-Typical Case Studies	L+D	LCD+BB	1	14	05/09/23
19	Internal Assessment Test - III	L+D	LCD+BB	1	15	07/09/23
20	Strategies for Transition towards Value-based Life and Profession					12/09/23

Text Book and Teachers Manual

- a. The Textbook A Foundation Course in Human Values and Professional Ethics, R R Gaur, R Asthana, G P Bagaria, 2nd Revised Edition, Excel Books, New Delhi, 2019. ISBN 978-93-87034- 47-1

b. The Teacher's Manual

Teachers' Manual for A Foundation Course in Human Values and Professional Ethics, R R Gaur, R Asthana, G

Reference Books

1. Jeevan Vidya: Ek Parichaya, A Nagaraj, Jeevan Vidya Prakashan, Amarkantak, 1999.
2. Human Values, A.N. Tripathi, New Age Intl. Publishers, New Delhi, 2004.
3. The Story of Stuff (Book).
4. The Story of My Experiments with Truth - by Mohandas Karamchand Gandhi
5. Small is Beautiful - E. F Schumacher.
6. Slow is Beautiful - Cecile Andrews
7. Economy of Permanence - J C Kumarappa
8. Bharat Mein Angreji Raj – Pandit Sunderlal
9. Rediscovering India - by Dharampal
10. Hind Swaraj or Indian Home Rule - by Mohandas K. Gandhi
11. India Wins Freedom - Maulana Abdul Kalam Azad
12. Vivekananda - Romain Rolland (English)
13. Gandhi - Romain Rolland (English)
14. Sussan George, 1976, How the Other Half Dies, Penguin Press. Reprinted 1986, 1991


15. Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, Limits to Growth – Club of Rome’s report, Universe Books.
16. A Nagraj, 1998, Jeevan Vidya Ek Parichay, Divya Path Sansthan, Amarkantak.
17. P L Dhar, RR Gaur, 1990, Science and Humanism, Commonwealth Publishers.
18. A N Tripathy, 2003, Human Values, New Age International Publishers.
19. SubhasPalekar, 2000, How to practice Natural Farming, Pracheen (Vaidik) KrishiTantraShodh, Amravati.
20. E G Seebauer & Robert L. Berry, 2000, Fundamentals of Ethics for Scientists & Engineers , Oxford University Press
21. M Govindrajran, S Natrajan & V.S. Senthil Kumar, Engineering Ethics (including Human Values), Eastern Economy Edition, Prentice Hall of India Ltd.
22. B P Banerjee, 2005, Foundations of Ethics and Management, Excel Books.
23. B L Bajpai, 2004, Indian Ethos and Modern Management, New Royal Book Co., Lucknow. Reprinted 2008.

Details of the teaching aids:

- **Black Board**
- **Power Point Presentation**


Course Incharge


Module coordinator


HOD CSE
Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : SWAPNA SUBHASH BANASODE
COURSE TYPE / CODE / TITLE : CORE / 21UHV49 / UNIVERSAL HUMAN VALUES-II:
UNDERSTANDING HARMONY and ETHICAL HUMAN CONDUCT
YEAR/ SEMESTER/SECTION : 2022-2023 / IVTH/B
BRANCH : COMPUTER SCIENCE & ENGINEERING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1						
01	Introduction to Value Education CHAPTER 1: Understanding Value Education	L+I	PPT	02	02	31/05/2023 02/06/2023
02	CHAPTER 2: Self Exploration as the Process for Value Education	L+I	PPT	01	03	02/06/2023
03	CHAPTER 3: Basic Human Aspirations and their Fulfillment	L+I	PPT	01	04	07/06/2023
04	CHAPTER 4: Understanding Happiness and Prosperity	L+I	PPT	01	06	07/06/2023 10/06/2023
Module II						
05	Harmony in the Human Being	L+I	PPT	01	07	14/06/2023

	CHAPTER 5: Understanding the Human Being as Co-existence of the Self and the Body					
IA-1(28/06/2023)						
06	CHAPTER 6: Harmony in the Self - Understanding Myself	L+I	PPT	02	09	04/07/2023 08/07/2023
07	CHAPTER 7: Harmony of the Self with the Body – Understanding Self-regulation and Health	L+I	PPT	01	10	28/07/2023
Module III						
08	CHAPTER 8: Harmony in the Family- The Basic Unit of Human Interaction, 'Trust' – the Foundational Value in Relationship, 'Respect' – as the Right Evaluation, Other Feelings, Justice in Human-to-Human Relationship	L+I	PPT	02	12	12/07/2023 18/07/2023
09	CHAPTER 9: Understanding Harmony in the Society, Vision for the Universal Human Order	L+I	PPT	01	13	19/07/2023
Module IV						
10	CHAPTER 10: Understanding Harmony in the Nature, Interconnectedness, Self-regulation, and Mutual Fulfillment among the Four Orders of Nature	L+I	PPT	01	14	20/07/2023
IA-2 (02/08/2023)						
12	CHAPTER 11: The Holistic Perception of Harmony in Existence	L+I	PPT	02	16	09/08/2023 16/08/2023
13	CHAPTER 12: Natural Acceptance of Human Values, Definitiveness of (Ethical) Human Conduct, A Basis for Humanistic Education, Humanistic Constitution and	L+I	PPT	01	17	16/08/2023 23/08/2023
14	CHAPTER 13: Holistic Development Towards Universal Human Order	L+I	PPT	01	18	23/08/2023
15	CHAPTER 14: Vision for Holistic Technologies, Production Systems and Management Models Typical	L+I	PPT	01	19	30/08/2023

	Case Studies, Strategies for Transition towards Value-based Life and Profession					
16	CHAPTER 15: Strategies for Transition towards Value-based Life and Profession	L+I	PPT	01	20	02/09/2023
IA-3(08/09/2023)						

Text Books:

1. The Textbook A Foundation Course in Human Values and Professional Ethics, R R Gaur, R Asthana, G P Bagaria, 2nd Revised Edition, Excel Books, New Delhi, 2019. ISBN 978-93-87034- 47-1
2. b. The Teacher"s Manual SAMPLE TEMPLATE 4 Teachers" Manual for A Foundation Course in Human Values and Professional Ethics, R R Gaur, R Asthana, G

Reference Books:

1. Jeevan Vidya: Ek Parichaya, A Nagaraj, Jeevan Vidya Prakashan, Amarkantak, 1999.
2. Human Values, A.N. Tripathi, New Age Intl. Publishers, New Delhi, 2004.
3. The Story of Stuff (Book).
4. The Story of My Experiments with Truth - by Mohandas Karamchand Gandhi
5. Small is Beautiful - E. F Schumacher.
6. Slow is Beautiful - Cecile Andrews
7. Economy of Permanence - J C Kumarappa
8. Bharat Mein Angreji Raj – Pandit Sunderlal
9. Rediscovering India - by Dharampal
10. Hind Swaraj or Indian Home Rule - by Mohandas K. Gandhi
11. India Wins Freedom - Maulana Abdul Kalam Azad
12. Vivekananda - Romain Rolland (English)

13. Gandhi - Romain Rolland (English)
14. Sussan George, 1976, How the Other Half Dies, Penguin Press. Reprinted 1986, 1991
15. Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, Limits to Growth – Club of Rome's report, Universe Books.
16. A Nagraj, 1998, Jeevan Vidya Ek Parichay, Divya Path Sansthan, Amarkantak.
17. P L Dhar, RR Gaur, 1990, Science and Humanism, Commonwealth Publishers.
18. A N Tripathy, 2003, Human Values, New Age International Publishers.
19. SubhasPalekar, 2000, How to practice Natural Farming, Pracheen (Vaidik) KrishiTantraShodh, Amravati.
20. E G Seebauer & Robert L. Berry, 2000, Fundamentals of Ethics for Scientists & Engineers , Oxford University Press
21. M Govindrajran, S Natrajan & V.S. Senthil Kumar, Engineering Ethics (including Human Values), Eastern Economy Edition, Prentice Hall of India Ltd.
22. B P Banerjee, 2005, Foundations of Ethics and Management, Excel Books.
23. B L Bajpai, 2004, Indian Ethos and Modern Management, New Royal Book Co., Lucknow. Reprinted 2008.

Web links and Video Lectures (e-Resources):

1. Value Education websites, <https://www.uhv.org.in/uhv-ii>, <http://uhv.ac.in>, <http://www.uptu.ac.in>
2. Story of Stuff, <http://www.storyofstuff.com>
3. Al Gore, An Inconvenient Truth, Paramount Classics, USA
4. Charlie Chaplin, Modern Times, United Artists, USA
5. IIT Delhi, Modern Technology – the Untold Story
6. Gandhi A., Right Here Right Now, Cyclewala Productions
7. https://www.youtube.com/channel/UCQxWr5QB_eZUnwxSwxXEKQw
8. https://fdp-si.aicte-india.org/8dayUHV_download.php

9. <https://www.youtube.com/watch?v=8ovkLRYXIjE>
10. <https://www.youtube.com/watch?v=OgdNx0X923I>
11. <https://www.youtube.com/watch?v=nGRcbRpvGoU>
12. <https://www.youtube.com/watch?v=sDxGXOgYEKM>

Details of the teaching aids:

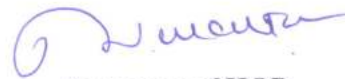
- BB – Black Board
- PPT- Power Point Presentation
- LCD – Liquid Crystal Display



**Signature of
Course In-Charge**



**Signature of
Module Coordinator**



Signature of HOD

*Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109*



Signature of Principal

**PRINCIPAL
K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109.**



KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

NAME OF THE STAFF : Mr. Manoj Kumar S

SUBJECT CODE/NAME : 18CS61/ SYSTEM SOFTWARE & COMPILERS

SEMESTER/YEAR/SEC : VI/III/A

ACADEMIC YEAR : 2022-2023

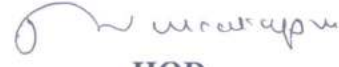
Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	Introduction to 18CS61	L+I	LCD	1	1	20/03/2023
2	Introduction to System Software	L+I	LCD	1	2	21/03/2023
3	Machine Architecture of SIC	L+I	LCD	1	3	23/03/2023
4	Machine Architecture of SIC	L+I	LCD	1	4	23/03/2023
5	Machine Architecture of SIC/XE	L+I	LCD	1	5	24/03/2023
6	Machine Architecture of SIC/XE	L+I	LCD	1	6	25/03/2023
7	Assemblers	L+I	LCD	1	7	27/03/2023
8	Basic assembler functions	L+I	LCD	1	8	29/03/2023
9	Machine dependent assembler features	L+I	LCD	1	9	30/03/2023
10	Machine dependent assembler features	L+I	LCD	1	10	30/03/2023
11	Machine independent assembler features	L+I	LCD	1	11	31/03/2023
12	Machine independent assembler features	L+I	LCD	1	12	01/04/2023
13	Assembler design options	L+I	LCD	1	13	05/04/2023
14	Basic Loader Functions	L+I	LCD	1	14	06/04/2023
15	Introduction: Language Processors	L+I	LCD	1	15	06/04/2023

MODULE 2						
16	The structure of a compiler	L+I	LCD	1	16	10/04/2023
17	The structure of a compiler	L+I	LCD	1	17	12/04/2023
18	The evaluation of programming languages	L+I	LCD	1	18	13/04/2023
19	The science of building compiler	L+I	LCD	1	19	13/04/2023
20	Applications of compiler technology.	L+I	LCD	1	20	15/04/2023
FIRST INTERNALS						
21	Lexical Analysis: The role of lexical analyzer	L+I	LCD	1	21	20/04/2023
22	Input buffering	L+I	LCD	1	22	20/04/2023
23	Specifications of token	L+I	BB	1	23	21/04/2023
24	Recognition of tokens	L+I	BB	1	24	24/04/2023
25	Revision	L+I	BB	1	25	26/04/2023
MODULE 3						
26	Syntax Analysis: Introduction	L+I	LCD	1	26	27/04/2023
27	Syntax Analysis: Introduction	L+I	LCD	1	27	27/04/2023
28	Context Free Grammars	L+I	BB	1	28	28/04/2023
29	Context Free Grammars	L+I	BB	1	29	29/04/2023
30	Writing a grammar	L+I	BB	1	30	03/05/2023
31	Writing a grammar	L+I	BB	1	31	04/05/2023
32	Top-Down Parsers	L+I	BB	1	32	04/05/2023
33	Top-Down Parsers	L+I	BB	1	33	05/05/2023
34	Top-Down Parsers	L+I	BB	1	34	06/05/2023
35	Top-Down Parsers	L+I	BB	1	35	22/05/2023
36	Bottom-Up Parsers	L+I	BB	1	36	24/05/2023
37	Bottom-Up Parsers	L+I	BB	1	37	25/05/2023
38	Bottom-Up Parsers	L+I	BB	1	38	25/05/2023
MODULE 4						
39	Lex and Yacc –The Simplest Lex Program, Grammars, Parser-Lexer Communication	L+I	LCD	1	39	26/05/2023
40	A YACC Parser, The Rules Section	L+I	LCD	1	40	29/05/2023
41	Running LEX and YACC, LEX and Hand- Written Lexers	L+I	LCD	1	41	31/05/2023

42	Using LEX - Regular Expression	L+I	LCD	1	42	01/06/2023
43	Examples of Regular Expressions	L+I	LCD	1	43	01/06/2023
44	A Word Counting Program	L+I	BB	1	44	02/06/2023
SECOND INTERNALS						
45	Using YACC – Grammars, Recursive Rules	L+I	LCD	1	45	08/06/2023
46	Shift/Reduce Parsing	L+I	LCD	1	46	08/06/2023
47	What YACC Cannot Parse A YACC Parser-The Definition Section, The Rules Section	L+I	LCD	1	47	09/06/2023
48	The LEXER	L+I	LCD	1	48	10/06/2023
49	Compiling and Running a Simple Parser	L+I	LCD	1	49	12/06/2023
50	Arithmetic Expressions and Ambiguity.	L+I	LCD	1	50	14/06/2023
MODULE 5						
51	PEDAGOGY: QUIZ	L+I	LCD	1	51	15/06/2023
52	Syntax Directed Translation	L+I	LCD	1	52	15/06/2023
53	Syntax Directed Translation problems	L+I	BB	1	53	16/06/2023
54	Syntax Directed Translation problems	L+I	BB	1	54	19/06/2023
55	Intermediate code generation	L+I	BB	1	55	21/06/2023
56	Intermediate code generation analysis	L+I	BB	1	56	22/06/2023
57	Intermediate code generation problems	L+I	BB	1	57	22/06/2023
58	Code generation	L+I	BB	1	58	23/06/2023
59	Code generation problem set 1	L+I	BB	1	59	26/06/2023
60	Code generation problem set 2	L+I	BB	1	60	28/06/2023
61	Revision	L+I	BB	1	61	30/06/2023
THIRD INTERNALS						


Course in charge


Module Coordinator


HOD
Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru - 560 109


Principal
PRINCIPAL
K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109.



KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME OF THE STAFF : Mrs. PALLAVI R

SUBJECT CODE/NAME : 18CS61/SYSTEM SOFTWARE & COMPILER DESIGN

SEMESTER/YEAR : VI B

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: ASSEMBLERS						
1	Introduction to System Software	L+D	LCD+BB	1	1	20/3/2023
2	Basic assembler functions, SIC Machine Architecture	L+D	LCD+BB+PS	3	4	21/3/2023 23/3/2023 23/3/2023
3	SIC/XE Machine Architecture	L+D	LCD+BB+PS	3	7	24/3/2023 25/3/2023 27/3/2023
4	Assembler Algorithms, Assembler Data Structures	L+D	LCD+BB	3	10	28/3/2023 30/3/2023 30/3/2023
5	Machine dependent assembler features	L+D	LCD+BB	1	11	31/3/2023
6	Machine independent assembler features	L+D	LCD+BB	3	14	1/4/2023 4/4/2023 6/4/2023
7	Assembler design options	L+D	LCD+BB	2	16	6/4/2023 10/4/2023
8	Basic Loader Functions	L+D	LCD+BB	1	17	11/4/2023
MODULE 2: INTRODUCTION, LEXICAL ANALYSIS						
9	Introduction , Language Processors	L+D	LCD+BB	2	19	13/4/2023
10	The structure of a compiler	L+D	LCD+BB	1	20	15/4/2023

IA-1 (17/11/23)						
11	The evaluation of programming languages	L+D	LCD+BB	2	23	20/4/2023
12	The science of building compiler	L+ D	LCD+BB	1	24	21/4/2023
13	Applications of compiler technology	L+D	LCD+BB	1	25	24/4/2023
14	The role of lexical analyzer	L+D	LCD+BB	1	26	25/4/2023
15	Input buffering	L+D	LCD+BB	2	28	27/4/2023 28/4/2023
16	Specifications of token	L+D	LCD+BB	2	30	29/4/2023 2/5/2023
17	Recognition of tokens	L+D	LCD+BB	2	32	4/5/2023
MODULE 3: SYNTAX ANALYSIS						
18	Syntax Analysis: Introduction	L+ D	LCD+BB	1	33	4/5/2023
19	Context Free Grammars	L+D+PS	LCD+BB	3	36	5/5/2023 8/5/2023 9/5/2023
20	Writing a grammar	L+D+PS	LCD+BB	3	39	11/5/2023 12/5/2023
21	Top Down Parsers	L+D+PS	LCD+BB	3	42	13/5/2023 15/5/2023 16/5/2023
22	Bottom-Up Parsers	L+D+PS	LCD+BB	3	45	18/5/2023 19/5/2023
MODULE 4: LEX AND YACC						
23	Introduction to Lex and yacc	L+ D	LCD+BB	1	46	25/5/2023
24	The Simplest Lex Program, Grammars	L+ D	LCD+BB	2	48	26/5/2023 27/5/2023

IA-2 (29/05/2023)						
25	Parser-Lexer Communication	L+ D	LCD+BB	1	49	1/6/2023
26	A YACC Parser, The Rules Section,	L+ D	LCD+BB	1	50	1/6/2023
27	Running LEX and YACC, LEX and Hand- Written Lexers	L+ D	LCD+BB+PS	1	51	2/6/2023
28	Using LEX - Regular Expression, Examples of Regular Expressions, A Word Counting Program	L+ D	LCD+BB+PS	2	53	5/6/2023 6/6/2023
29	Using LEX - Regular Expression, Examples of Regular Expressions, A Word Counting Program	L+ D	LCD+BB+PS	2	55	8/6/2023
30	Shift/Reduce Parsing, What YACC Cannot Parse, A YACC Parser - The Definition Section, The Rules Section	L+ D	LCD+BB+PS	2	57	9/6/2023 12/6/2023
31	The LEXER, Compiling and Running a Simple Parser, Arithmetic Expressions and Ambiguity.	L+ D	LCD+BB+PS	2	59	13/6/2023 15/6/2023
MODULE 5: SYNTAX DIRECTED TRANSLATION, INTERMEDIATE CODE GENERATION						
32	Syntax Directed Translation	L+ D	LCD+BB	2	61	16/6/2023 19/6/2023
33	Intermediate code generation	L+ D	LCD+BB	3	64	20/6/2023 22/6/2023
34	Code generation	L+ D	LCD+BB	3	67	23/6/2023 24/6/2023 30/6/2023
IA-3 (03/07/2023)						
35	Previous Year Question paper	L+D	LCD	4	71	6/6/2023 7/6/2023 8/6/2023 10/6/2023

Text Books:

1. System Software by Leland. L. Beck, D Manjula, 3rd edition, 2012
2. Alfred V Aho, Monica S. Lam, Ravi Sethi, Jeffrey D. Ullman , Compilers-Principles, Techniques and Tools, Pearson, 2nd edition, 2007
3. Doug Brown, John Levine, Tony Mason, lex & yacc, O'Reilly Media, October 2012.

Reference Books, Web reference:

1. Systems programming – Srimanta Pal , Oxford university press, 2016
2. System programming and Compiler Design, K C Louden, Cengage Learning
3. System software and operating system by D. M. Dhamdhare TMG
4. Compiler Design, K Muneeswaran, Oxford University Press 2013

Web Materials:

1. [Compiler Design | Great Learning \(mygreatlearning.com\)](http://mygreatlearning.com)
2. [Compiler Design - Course \(nptel.ac.in\)](http://nptel.ac.in)
3. [Free Online Course: Compilers from Coursera | Class Central](https://www.coursera.org/learn/compilers)
4. [Compiler Design | \(iitk.ac.in\)](http://iitk.ac.in)

Details for the teaching Aids

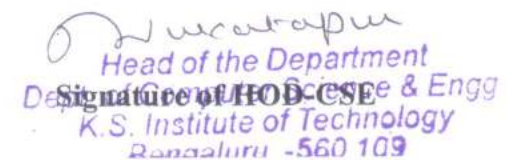
Black Board and LCD



Signature of Course In-Charge



Signature of Module Coordinator



Head of the Department
Department of Computer Science & Engg
K.S. Institute of Technology
Bangalore - 560 109



K.S. INSTITUTE OF TECHNOLOGY, BENGALURU- 560109
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME OF THE STAFF : Prof. KAVYA M S
SUBJECT CODE/NAME : 18CS62/COMPUTER GRAPHICS & VISUALIZATION
SEMESTER/SEC/YEAR : VI / B / III
ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Computer Graphics and OpenGL						
1	Computer Graphics and OpenGL: Computer Graphics: Basics of computer graphics,	L+D	BB+LCD	1	1	21-03-2023
2	Application of Computer Graphics, Video Display Devices: Random Scan and Raster Scan displays,	L+ D	BB+LCD	1	2	23-03-2023
3	Graphics software. OpenGL: Introduction to OpenGL ,	L+ D	BB+LCD	1	3	24-03-2023
4	Coordinate reference frames, specifying two-dimensional world coordinate reference frames in OpenGL,	L+D	BB+LCD	1	4	24-03-2023
5	OpenGL point functions,	L+ D	BB+LCD	1	5	28-03-2023
6	OpenGL line functions, point attributes, line attributes, curve attributes,	L+D	BB+LCD	1	6	29-03-2023
7	OpenGL point attribute functions, OpenGL line attribute functions,	L+D	BB+LCD	1	7	30-03-2023
8	Line drawing algorithms(DDA)	L+ D	BB+LCD	1	8	31-03-2023
9	Bresenham's Line Drawing Algorithm.	L+ D	BB+LCD	1	9	31-03-2023
10	Circle generation algorithms (Bresenham's).	L+ D	BB+LCD	1	10	05-04-2023

11	Revision-Module 1	L+D	BB+LCD	1	11	06-04-2023
12	Revision-Module 1	L+D	BB+LCD	1	12	11-04-2023
13	Revision-Module 1	L+D	BB+LCD	1	13	12-04-2023
MODULE 2: Fill area Primitives, 2D Geometric Transformations and 2D viewing						
14	Fill area Primitives: Polygon fill-areas, OpenGL polygon fill area functions,	L+D	BB+LCD	1	14	13-04-2023
15	fill area attributes, general scan line polygon fill algorithm, OpenGL fill-area attribute functions.	L+ D	BB+LCD	1	15	18-04-2023
16	2DGeometric Transformations: Basic 2D Geometric Transformations,	L+D	BB+LCD	1	16	20-04-2023
17	matrix representations and homogeneous coordinates.	L+ D	BB+LCD	1	17	21-04-2023
18	Inverse transformations, 2DComposite transformations, other 2D transformations,	L+ D	BB+LCD	1	18	21-04-2023
19	raster methods for geometric transformations,	L+ D	BB+LCD	1	19	25-04-2023
20	OpenGL raster transformations,	L+ D	BB+LCD	1	20	26-04-2023
21	OpenGL geometric transformations function,	L+ D	BB+LCD	1	21	27-04-2023
22	2D viewing: 2D viewing pipeline,	L+ D	BB+LCD	1	22	28-04-2023
23	OpenGL 2D viewing functions.	L+ D	BB+LCD	1	23	28-04-2023
24	Revision-Module 2	L+D	BB+LCD	1	24	29-04-2023
25	Revision-Module 2	L+D	BB+LCD	1	25	29-04-2023
26	Revision-Module 2	L+D	BB+LCD	1	26	02-05-2023
MODULE 3: Clipping, 3D Geometric Transformations, Color and Illumination Models						
27	Clipping: clipping window, normalization and viewport transformations,	L+ D	BB+LCD	1	27	03-05-2023
28	clipping algorithms,2D point clipping, 2D line clipping algorithms: cohen-sutherland line clipping only -polygon	L+D	BB+LCD	1	28	04-05-2023
29	fill area clipping: Sutherland-Hodgeman polygon clipping algorithm only.	L+ D	BB+LCD	1	29	05-05-2023
30	3DGeometric Transformations: 3D translation, rotation, scaling, composite 3D	L+D	BB+LCD	1	30	05-05-2023

	transformations,					
31	other 3D transformations, affine transformations, OpenGL geometric transformations functions.	L+D	BB+LCD	1	31	09-05-2023
32	Color Models: Properties of light, color models, RGB and CMY color models.	L+ D	BB+LCD	1	32	10-05-2023
33	Illumination Models: Light sources,	L+D	BB+LCD	1	33	11-05-2023
34	basic illumination models-Ambient light,	L+D	BB+LCD	1	34	12-05-2023
35	diffuse reflection, specular and phong model,	L+D	BB+LCD	1	35	12-05-2023
36	Corresponding openGL functions.	L+D	BB+LCD	1	36	13-05-2023
37	Revision-Module 3	L+D	BB+LCD	1	37	13-05-2023
38	Revision-Module 3	L+D	BB+LCD	1	38	16-05-2023
39	Revision-Module 3	L+D	BB+LCD	1	39	17-05-2023
Module 4: 3D Viewing and Visible Surface Detection						
40	3DViewing:3D viewing concepts, 3D viewing pipeline,	L+ D	BB+LCD	1	40	23-05-2023
41	3D viewing coordinate parameters ,	L+D	BB+LCD	1	41	25-05-2023
42	Transformation from world to viewing coordinates,	L+ D	BB+LCD	1	42	26-05-2023
43	Projection transformation, orthogonal projections,	L+D	BB+LCD	1	43	26-05-2023
44	perspective projections, The viewport transformation and 3D screen coordinates.	L+D	BB+LCD	1	44	27-05-2023
45	OpenGL 3D viewing functions.	L+D	BB+LCD	1	45	29-05-2023
46	Visible Surface Detection Methods:	L+ D	BB+LCD	1	46	01-06-2023
47	Classification of visible surface Detection algorithms,	L+ D	BB+LCD	1	47	02-06-2023
48	depth buffer method only and	L+ D	BB+LCD	1	48	06-06-2023
49	OpenGL visibility detection functions.	L+ D	BB+LCD	1	49	07-06-2023
50	Revision-Module 4	L+D	BB+LCD	1	50	08-06-2023
51	Revision-Module 4	L+D	BB+LCD	1	51	09-06-2023

52	Revision-Module 4	L+D	BB+LCD	1	52	09-06-2023
MODULE 5: Input & Interaction, Curves and Computer Animation						
53	Input and Interaction: Input devices, clients and servers,	L+D	BB+LCD	1	53	10-06-2023
54	Display Lists, Display Lists and Modeling,	L+ D	BB+LCD	1	54	13-06-2023
55	Programming Event Driven Input, Menus Picking,	L+D	BB+LCD	1	55	14-06-2023
56	Building Interactive Models, Animating Interactive programs,	L+D	BB+LCD	1	56	15-06-2023
57	Design of Interactive programs, Logic operations.	L+D	BB+LCD	1	57	16-06-2023
58	Curved surfaces, quadric surfaces,	L+D	BB+LCD	1	58	20-06-2023
59	OpenGL Quadric-Surface and	L+D	BB+LCD	1	59	21-06-2023
60	Cubic-Surface Functions,	L+D	BB+LCD	1	60	22-06-2023
61	Bezier Spline Curves, Bezier surfaces,	L+D	BB+LCD	1	61	23-06-2023
62	OpenGL curve functions. Corresponding openGL functions.	L+D	BB+LCD	1	62	24-06-2023
63	Revision-Module 5	L+D	BB+LCD	1	63	27-06-2023
64	Revision-Module 5	L+D	BB+LCD	1	64	30-06-2023
65	Revision-Module 5	L+D	BB	1	65	30-06-2023
REVISION						
66	Question Paper Solving	L+D	BB	1	66	04-07-2023
67	Question Paper Solving	L+D	BB	1	67	06-07-2023
68	Question Paper Solving	L+D	BB	1	68	07-07-2023
69	Question Paper Solving	L+D	BB	1	69	08-07-2023

Textbooks:

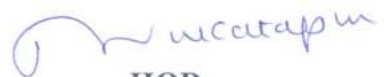
1. Donald Hearn & Pauline Baker: Computer Graphics with OpenGL Version,3rd / 4th Edition, Pearson Education,2011
2. Edward Angel: Interactive Computer Graphics- A Top Down approach with OpenGL, 5th edition. Pearson Education, 2008

Reference Books:

1. James D Foley, Andries Van Dam, Steven K Feiner, John F Huges Computer graphics with OpenGL: pearson education
2. Xiang, Plastock : Computer Graphics , sham's outline series, 2nd edition, TMG.
3. Kelvin Sung, Peter Shirley, steven Baer : Interactive Computer Graphics, concepts and applications, Cengage Learning
4. M M Raikar & Shreedhara K S Computer Graphics using OpenGL, Cengage publication


Course In charge


Module Coordinator


HOD
Head of the Department
Dept. of Computer Science & Engg.
K.S. Institute of Technology
Bengaluru -560 109



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : PALLAVI K N
COURSE CODE/TITLE : 18CS63 / Web Technology and its Applications
YEAR/ SEMESTER/SECTION : III/ VI / B
BRANCH : CSE

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: Introduction to HTML						
1	What is HTML and Where did it come from?, HTML Syntax,	L+D	LCD	1	1	21/03/2023
2	Semantic Markup	L+D	LCD	1	2	
3	Structure of HTML Documents,	L+D	LCD	1	3	23/03/2023
4	Quick Tour of HTML Elements,	L+D	LCD	1	4	24/03/2023
5	HTML5 Semantic Structure Elements,	L+D	LCD	1	5	28/03/2023
6	Introduction to CSS, What is CSS, CSS Syntax,	L+D	LCD	1	6	29/03/2023
7	Location of Styles, Selectors,	L+D	LCD	1	7	29/03/2023
8	The Box Model,	L+D	LCD	1	8	30/03/2023
9	CSS Text Styling,	L+D	LCD	1	9	31/03/2023
10	Discussion/ Practical Knowledge			1	10	04/04/2023

Module 2: HTML Tables and Forms						
11	Introducing Tables, Styling Tables	L+D	LCD	1	11	05/04/2023
12	Introducing Forms, Form Control Elements	L+D	LCD	1	12	05/04/2023
13	Table and Form Accessibility	L+D	LCD	1	13	06/04/2023
14	Microformats	L+D	LCD	1	14	11/04/2023
15	Advanced CSS: Layout, Normal Flow, Positioning Elements	L+D	LCD	1	15	12/04/2023
16	Floating Elements, Constructing Multicolumn Layouts.	L+D	LCD	1	16	12/04/2023
17	Approaches to CSS Layout	L+D	LCD	1	17	13/04/2023
18	Responsive Design	L+D	L+D	1	18	20/04/2023
19	CSS Frameworks.	L+D	L+D	1	19	21/04/2023
20	Revision	L+D	L+D	1	20	25/04/2023
Module 3:						
21	JavaScript: Client-Side Scripting, What is JavaScript and What can it do?.	L+D	LCD	1	21	26/04/2023
22	JavaScript Design Principles, Where does JavaScript Go?. Syntax,	L+D	LCD	1	22	26/04/2023
23	JavaScript Objects, The Document Object Model (DOM),	L+D	LCD	1	23	27/04/2023
24	JavaScript Events, Forms,	L+D	LCD	1	24	28/04/2023
25	Introduction to Server-Side Development with PHP, What is Server-Side Development,	L+D	LCD	1	25	29/04/2023
26	A Web Server's Responsibilities.	L+D	LCD	1	26	02/05/2023

27	Quick Tour of PHP,	L+D	LCD	1	27	03/05/2023
28	Program Control,	L+D	LCD	1	28	03/05/2023
29	Functions	L+D	LCD	1	29	04/05/2023
30	Revsion	L		1	30	05/05/2023
Module 4						
31	PHP Arrays and Superglobals, Arrays,	L+D	LCD	1	31	09/05/2023
32	\$_GET and \$_POST Superglobal Arrays.	L+D	LCD	1	32	10/05/2023
33	\$_SERVER Array, \$_FILES Array, Reading/Writing Files,	L+D	LCD	1	33	10/05/2023
34	PHP Classes and Objects,	L+D	LCD	1	34	11/05/2023
35	Object-Oriented Overview, Classes and Objects in PHP,	L+D	LCD	1	35	12/05/2023
36	Object Oriented Design,	L+D	LCD	1	36	13/05/2023
37	Error Handling and Validation,	L+D	LCD	1	37	16/05/2023
38	What are Errors and Exceptions?.	L+D	LCD	1	38	17/05/2023
39	PHP Error Reporting, PHP Error and Exception Handling	L+D	LCD	1	39	18/05/2023
40	Revision			1	40	19/05/2023
Module 5:						
41	Managing State, The Problem of State in Web Applications,	L+D	LCD	1	41	25/05/2023
42	Passing Information via Query Strings, Passing Information via the URL Path, Cookies,	L+D	LCD	1	42	26/05/2023
43	Serialization, Session State,	L+D	LCD	1	43	27/05/2023

44	HTML5 Web Storage, Caching,	L+D	LCD	1	44	01/06/2023
45	Advanced JavaScript and jQuery,	L+D	LCD	1	45	02/06/2023
46	JavaScript Pseudo Classes, jQuery Foundations,	L+D	LCD	1	46	06/06/2023
47	AJAX. Asynchronous File Transmission. Animation. Backbone 10	L+D	LCD	1	47	07/06/2023
48	MVC Frameworks, XML Processing and Web Services,	L+D	LCD	1	48	07/06/2023
49	XML Processing, JSON, Overview of Web Services.	L+D	LCD	1	49	08//06/2023
50	Revision			1	50	09/06/2023
51	Pedagogy			1	51	10/06/2023
52	Practical 1			1	52	13/06/2023
53	Practical 2			1	53	14/06/2023
54	Revision-1			3	54	14/06/2023- 16/06/2023
55	Revision-2			2	57	20//06/2023- 21/06/2023
56	Revision-3			3	59	22//06/2023- 24/06/2023
57	Revision-4			1	60	30//06/2023
58	Question Paper Discussion			5	65	06/07/2023- 10/07/2023

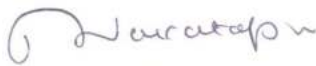
Text Book: Randy Connolly, Ricardo Hoar, "Fundamentals of Web Development", 1st Edition, Pearson Education India. (ISBN:978-9332575271)

Reference Books:

1. Robin Nixon, "Learning PHP, MySQL & JavaScript with jQuery, CSS and HTML5", 4th Edition, O'Reilly Publications, 2015. (ISBN:978-9352130153).
2. Luke Welling, Laura Thomson, "PHP and MySQL Web Development", 5th Edition, Pearson Education, 2016. (ISBN:978-9332582736)
3. Nicholas C Zakas, "Professional JavaScript for Web Developers", 3rd Edition, Wrox/Wiley India, 2012. (ISBN:978-8126535088)
4. David Sawyer Mcfarland, "JavaScript & jQuery: The Missing Manual", 1st Edition, O'Reilly/Shroff Publishers & Distributors Pvt Ltd, 2014


Course Incharge


Module Coordinator


HOD CSE
Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109



K S INSTITUTE OF TECHNOLOGY BENGALURU

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

NAME OF THE STAFF : Mrs. Supreetha Ganesh

SUBJECT CODE/NAME : 18CS643/ Cloud Computing and IT applications

SEMESTER/YEAR/SEC : VI SEM A Section/ III

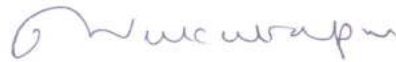
ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Introduction						
1	Module 1: Introduction ,Cloud Computing at a Glance	L+D	BB+LCD	1	1	20-03-2023
2	The Vision of Cloud Computing, Defining a Cloud	L+ D	BB+LCD	1	2	23-03-2023
3	A Closer Look, Cloud Computing Reference Model, Characteristics and Benefits	L+ D	BB+LCD	1	3	23-03-2023
4	Challenges Ahead, Historical Developments, Distributed Systems, Virtualization	L+D	BB+LCD	1	4	23-03-2023
5	Web 2.0, Service-Oriented Computing, Utility-Oriented Computing	L+D	BB+LCD	1	5	24-03-2023
6	Building Cloud Computing Environments, Application Development	L+D	BB+LCD	1	6	27-03-2023
7	Infrastructure and System Development, Computing Platforms and Technologies	L+D	BB+LCD	1	7	29-03-2023
8	Amazon Web Services (AWS)	L+D	BB+LCD	1	8	30-03-2023
9	Google AppEngine, Microsoft Azure, Hadoop, Force.com and Salesforce.com	L+D	BB+LCD	1	9	30-03-2023
10	Manjrasoft Aneka Virtualization, Introduction, Characteristics of Virtualized, Environments Taxonomy of Virtualization Techniques	L+D	BB+LCD	1	10	31-03-2023
11	Execution Virtualization, Other Types of Virtualization, Virtualization and Cloud Computing,	L+D	BB+LCD	1	11	31-03-2023
12	Pros and Cons of Virtualization, Technology Examples Xen: Para virtualization, VMware: Full Virtualization,	L+ D	BB+LCD	1	12	01-04-2023

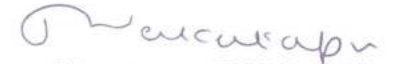
62	Cloud Applications Scientific Applications	L+ D	LCD	1	62	15-06-2023
63	Healthcare: ECG Analysis in the Cloud	L+ D	LCD	1	63	16-06-2023
64	Biology: Protein Structure Prediction	L+ D	LCD	1	64	19-06-2023
65	Biology: Gene Expression Data Analysis for Cancer Diagnosis	L+ D	LCD	1	65	21-06-2023
66	Geoscience: Satellite Image Processing	L+ D	LCD	1	66	22-06-2023
67	Business and Consumer Applications Contd	L+ D	LCD	1	67	22-06-2023
68	Application of cloud computing , Cloud career opportunities	L+ D	LCD	1	68	23-06-2023
69	CRM and ERP, Productivity , Social Networking	L+ D	LCD	1	69	26-06-2023
70	Multiplayer Online Gaming, Media Applications,	L+ D	LCD	1	70	28-06-2023
71	Revision	L+ D	LCD	1	71	30-06-2023
72	Revision	L+ D	LCD	1	72	03-07-2023
73	Discussion of previous year question papers	L+ D	LCD	1	73	05-07-2023
74	Discussion of previous year question papers	L+ D	LCD	1	74	10-07-2023
75	Discussion of previous year question papers	L+ D	LCD	1	75	10-07-2023



Signature of course In-charge



Signature of Module Coordinator



Signature of HOD-CSE

Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109



KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME OF THE STAFF : Ms. Namyapriya Dayananda

SUBJECT CODE /NAME : 18CS643 /Cloud Computing & its applications

SEMESTER/YEAR : VI B

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: INTRODUCTION TO CLOUD COMPUTING, VIRTUALIZATION						
1	Introduction, Cloud Computing at a Glance, The Vision of Cloud Computing, Defining a Cloud, A Closer Look	L+D	LCD+BB	1	1	20/3/2023
2	Cloud Computing Reference Model, Characteristics and Benefits	L+ D	LCD+BB	1	2	23/3/2023
3	Challenges Ahead, Historical Developments, Distributed Systems, Virtualization	L+ D	LCD+BB	1	3	23/3/2023
4	Web 2.0, Service-Oriented Computing, Utility-Oriented Computing, Building Cloud Computing Environments, Application Development, Infrastructure and System Development	L+D	LCD+BB	3	6	27/3/2023 29/3/2023 30/3/2023
5	Computing Platforms and Technologies, Amazon Web Services (AWS), Google App Engine, Microsoft Azure, Hadoop, Force.com and Salesforce.com, Manjrasoft Aneka	L+D	LCD+BB	2	8	31/3/2023 31/3/2023
6	Virtualization: Introduction, Characteristics of Virtualized Environments Taxonomy of Virtualization Techniques	L+D	LCD+BB	1	9	3/4/2023
7	Execution Virtualization, Other Types of Virtualizations, Virtualization and Cloud Computing, Pros and Cons of Virtualization	L+D	LCD+BB	1	10	5/4/2023
8	Technology Examples Xen: Paravirtualization, VMware: Full Virtualization, Microsoft Hyper-V	L+D	LCD+BB	1	11	5/4/2013

MODULE 2: CLOUD COMPUTING ARCHITECTURE, ANEKA						
9	Cloud Computing Architecture, Introduction, Cloud Reference Model, Architecture,	L+D	LCD+BB	1	12	6/4/2023
10	Infrastructure / Hardware as a Service, Platform as a Service, Software as a Service	L+D	LCD+BB	1	13	6/4/2023
11	Types of Clouds, Public Clouds, Private Clouds, Hybrid Clouds, Community Clouds, Economics of the Cloud, Open Challenges	L+D	LCD+BB	2	15	10/4/2023 12/04/2023
12	Cloud Definition, Cloud Interoperability and Standards Scalability and Fault Tolerance Security, Trust, and Privacy Organizational Aspects	L+D	LCD+BB	2	17	13/4/2023 13/4/2023
13	Aneka: Cloud Application Platform, Framework Overview, Anatomy of the Aneka Container	L+D	LCD+BB	2	19	20/4/2023 20/04/2023
14	From the Ground Up: Platform Abstraction Layer, Fabric Services, foundation Services, Application Services	L+D	LCD+BB	1	21	21/4/2023
15	Building Aneka Clouds, Infrastructure Organization, Logical Organization	L+D	LCD+BB	1	22	24/4/2023
16	Private Cloud Deployment Mode, Public Cloud Deployment Mode, Hybrid Cloud Deployment Mode	L+D	LCD+BB	1	23	27/4/2023
17	Cloud Programming and Management, Aneka SDK, Management Tools	L+D	LCD+BB	1	24	27/4/2023
MODULE 3: Concurrent Computing, High-Throughput Computing						
18	Concurrent Computing: Thread Programming, Introducing Parallelism for Single Machine Computation	L+D	LCD+BB	1	25	28/4/2023

19	Programming Applications with Threads, what is a Thread? Thread APIs, Techniques for Parallel Computation with Threads, Multithreading with Aneka	L+D+PS	LCD+BB	2	27	29/04/2023 2/5/2023
20	Introducing the Thread Programming Model, Aneka Thread vs. Common Threads, Programming Applications with Aneka Threads,	L+D+PS	LCD+BB	2	29	3/5/2023 4/5/2023
21	Aneka Threads Application Model, Domain Decomposition: Matrix Multiplication, Functional Decomposition: Sine, Cosine, and Tangent.	L+D+PS	LCD+BB	1	30	5/5/2023
22	High-Throughput Computing: Task Programming, Task Computing, Characterizing a Task	L+ D	LCD+BB	1	31	6/5/2023
23	08 Computing Categories, Frameworks for Task Computing, Task-based Application Models	L+ D	LCD+BB	2	33	8/5/2023 9/5/2023
24	Embarrassingly Parallel Applications, Parameter Sweep Applications, MPI Applications, Workflow Applications with Task Dependencies,	L+ D	LCD+BB	2	35	10/5/2023 11/5/2023
25	Aneka Task-Based Programming, Task Programming Model, Developing Applications with the Task Model, Developing Parameter Sweep Application, Managing Workflows.	L+ D	LCD+BB	3	38	11/5/2023 12/5/2023 13/5/2023
MODULE 4: DATA INTENSIVE COMPUTING						
26	Data Intensive Computing: Map-Reduce Programming	L+ D	LCD+BB	1	39	15/5/2023
27	What is Data-Intensive Computing? Characterizing Data-Intensive Computations.	L+ D	LCD+BB	3	42	16/5/2023 17/5/2023 18/5/2023
28	Challenges Ahead, Historical Perspective	L+ D	LCD+BB	2	44	18/5/2023 19/5/2023
29	Technologies for Data-Intensive Computing, Storage Systems	L+ D	LCD+BB	2	46	25/5/2023 25/5/2023
30	Programming Platforms, Aneka MapReduce Programming,	L+ D	LCD+BB	3	49	26/5/2023 27/5/2023

						1/6/2023
31	Introducing the MapReduce Programming Model, Example Application	L+ D	LCD+BB	3	52	2/6/2023 5/6/2023 6/6/2023
MODULE 5: CLOUD PLATFORMS IN INDUSTRY, CLOUD APPLICATIONS SCIENTIFIC APPLICATIONS, HEALTHCARE						
32	Cloud Platforms in Industry, Amazon Web Services	L+ D	LCD+BB	2	54	8/6/2023 8/6/2023
33	Communication Services, Additional Services	L+ D	LCD+BB	2	56	9/6/2023 10/6/2023
34	Google AppEngine, Architecture and Core Concepts	L+ D	LCD+BB	2	58	12/6/2023 13/6/2023
35	Application Life-Cycle, Cost Model, Observations	L+ D	LCD+BB	2	60	14/6/2023 15/6/2023
36	Microsoft Azure, Azure Core Concepts,	L+ D	LCD+BB	2	62	15/6/2023 16/6/2023
37	SQL Azure, Windows Azure Platform Appliance.	L+ D	LCD+BB	2	64	19/6/2023 20/6/2023
38	Cloud Applications Scientific Applications, Healthcare: ECG Analysis in the Cloud	L+ D	LCD+BB	1	65	21/6/2023
39	Biology: Protein Structure Prediction, Biology: Gene Expression Data Analysis for Cancer Diagnosis	L+ D	LCD+BB	1	66	22/6/2023
40	Geoscience: Satellite Image Processing, Business and Consumer Applications	L+ D	LCD+BB	2	68	22/6/2023 23/6/2023
41	CRM and ERP, Productivity	L+ D	LCD+BB	1	69	24/6/2023
42	Social Networking, Media Applications, Multiplayer Online Gaming.	L+ D	LCD+BB	1	70	30/6/2023
43	Previous Year Papers	L+ D	LCD+BB	3	73	6/7/2023 7/7/2023 8/7/2023

Text Books:

1. Rajkumar Buyya, Christian Vecchiola, and Thamarai Selvi Mastering Cloud. Computing McGraw Hill Education

Reference Books, Web reference:

1. Dan C. Marinescu, Cloud Computing Theory and Practice, Morgan Kaufmann, Elsevier 2013

Web Materials:

https://onlinecourses.nptel.ac.in/noc23_cs65/announcements?force=true

Details for the teaching Aids

Black Board and LCD



Signature of Course In-Charge



Signature of Module Coordinator



Signature of HOD-CSE

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K S INSTITUTE OF TECHNOLOGY BENGALURU
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

NAME OF THE STAFF : Mrs. Pallavi R
COURSE CODE/TITLE : 18CSL66/ SYSTEM SOFTWARE LABORATORY
SEMESTER/SEC/YEAR : VI /B/ VI
ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Teaching Aid	No. of Periods	Batch No.	Proposed Date
1	1.a) Write a LEX program to recognize valid arithmetic expression. Identifiers in the expression could be only integers and operators could be + and *. Count the identifiers & operators present and print them separately. 1.b) Write YACC program to evaluate arithmetic expression involving operators: +, -, *, and /	LCD	3	B1	20-03-2023
		LCD	3	B2	21-02-2023
		LCD	3	B3	29-03-2-23
2	2) Develop, Implement and Execute a program using YACC tool to recognize all strings ending with b preceded by n a's using the grammar $a^n b$ (note: input n value)	LCD	3	B1	25-03-2023
		LCD	3	B2	28-03-2023
		LCD	3	B3	31-03-2023
3	6.a) Write a LEX program to eliminate comment	LCD	3	B1	27-03-2023

	lines in a C program and copy the resulting program into a separate file.	LCD	3	B2	04-04-2022
		LCD	3	B3	05-04-2023

4	6.b) Write YACC program to recognize valid identifier, operators and keywords in the given text (C program) file.	LCD	3	B1	01-04-2023
		LCD	3	B2	11-04-2023
		LCD	3	B3	12-04-2023

5	7) Design, develop and implement a C/C++/Java program to simulate the working of Shortest remaining time and Round Robin (RR) scheduling algorithms. Experiment with different quantum sizes for RR algorithm.	LCD	3	B1	10-04-2023
		LCD	3	B2	25-04-2023
		LCD	3	B3	26-04-2023

6	8) Design, develop and implement a C/C++/Java program to implement Banker's algorithm. Assume suitable input required to demonstrate the results.	LCD	3	B1	15-04-2023
		LCD	3	B2	02-05-2023
		LCD	3	B3	03-05-2023

7	REVISION	LCD	3	B1	8-05-2023
		LCD	3	B2	9-05-2023
		LCD	3	B3	10-05-2023


8	9) Design, develop and implement a C/C++/Java program to implement page replacement algorithms LRU and FIFO. Assume suitable input required to demonstrate the results.	LCD	3	B1	15-05-2023
		LCD	3	B2	16-05-2023
		LCD	3	B3	17-06-2023

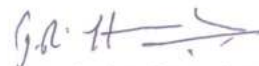
9	3) Design, develop and implement YACC/C program to construct Predictive / LL(1) Parsing Table for the grammar rules: $A \rightarrow aBa$, $B \rightarrow bB \mid \epsilon$. Use this table to parse the sentence: $abba\$$	LCD	3	B1	29-05-2023
		LCD	3	B2	30-05-2023
		LCD	3	B3	31-06-2023


10	4) Design, develop and implement YACC/C program to demonstrate Shift Reduce Parsing technique for the grammar rules: $E \rightarrow E+T \mid T$, $T \rightarrow T * F \mid F$, $F (E) \mid id$ and parse the sentence: $id + id * id$.	LCD	3	B1	12-06-2023
		LCD	3	B2	13-06-2023
		LCD	3	B3	14-06-2023

11	5) Design, develop and implement a C/Javaprogram to generate the machine code using Triples for the statement $A = -B * (C + D)$ whose intermediate code in three-address form: T1 = -B T2 = C + D T3 = T1 + T2 A = T3	LCD	3	B1	19-06-2023
		LCD	3	B2	20-06-2023
		LCD	3	B3	21-06-2023

12	REVISION/ PRACTICE SESSIONS	LCD	3	B1	26-06-2023
		LCD	3	B2	24-06-2023 27-06-2023
		LCD	3	B3	28-06-2023


Course in charge


[S.A.ITH (S.H.A.M.A.T.H.A.M.A)]
Module Coordinator


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Head of the Department
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K S INSTITUTE OF TECHNOLOGY BENGALURU
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

NAME OF THE STAFF : Mr. Manoj Kumar S, Mrs. Pallavi R
COURSE CODE/TITLE : 18CSL66/ SYSTEM SOFTWARE LABORATORY
SEMESTER/SEC/YEAR : VI /A/ III
ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Teaching Aid	No. of Periods	Batch No.	Proposed Date
1	1.a) Write a LEX program to recognize valid arithmetic expression. Identifiers in the expression could be only integers and operators could be + and *. Count the identifiers & operators present and print them separately. 1.b) Write YACC program to evaluate arithmetic expression involving operators: +, -, *, and /	LCD	3	A1	20-03-2023
		LCD	3	A2	21-02-2023
		LCD	3	A3	24-03-2-23
2	2) Develop, Implement and Execute a program using YACC tool to recognize all strings ending with b preceded by n a's using the grammar $a^n b$ (note: input n value)	LCD	3	A1	25-03-2023
		LCD	3	A2	28-03-2023
		LCD	3	A3	31-03-2023
3	6.a) Write a LEX program to eliminate comment	LCD	3	A1	27-03-2023

	lines in a C program and copy the resulting program into a separate file.	LCD	3	A2	04-04-2022
		LCD	3	A3	21-04-2023
4	6.b) Write YACC program to recognize valid identifier, operators and keywords in the given text (C program) file.	LCD	3	A1	01-04-2023
		LCD	3	A2	11-04-2023
		LCD	3	A3	28-04-2023
5	7) Design, develop and implement a C/C++/Java program to simulate the working of Shortest remaining time and Round Robin (RR) scheduling algorithms. Experiment with different quantum sizes for RR algorithm.	LCD	3	A1	10-04-2023
		LCD	3	A2	25-04-2023
		LCD	3	A3	29-04-2023
6	8) Design, develop and implement a C/C++/Java program to implement Banker's algorithm. Assume suitable input required to demonstrate the results.	LCD	3	A1	15-04-2023
		LCD	3	A2	02-05-2023
		LCD	3	A3	05-05-2023

7	REVISION	LCD	3	A1	24-04-2023
		LCD	3	A2	23-05-2023
		LCD	3	A3	26-05-2023


8	9) Design, develop and implement a C/C++/Java program to implement page replacement algorithms LRU and FIFO. Assume suitable input required to demonstrate the results.	LCD	3	A1	22-05-2023
		LCD	3	A2	27-05-2023
		LCD	3	A3	02-06-2023

9	3) Design, develop and implement YACC/C program to construct Predictive / LL(1) Parsing Table for the grammar rules: $A \rightarrow aBa$, $B \rightarrow bB \mid \epsilon$. Use this table to parse the sentence: abba\$	LCD	3	A1	29-05-2023
		LCD	3	A2	30-05-2023
		LCD	3	A3	09-06-2023

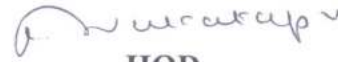
10	4) Design, develop and implement YACC/C program to demonstrate Shift Reduce Parsing technique for the grammar rules: $E \rightarrow E+T \mid T$, $T \rightarrow T * F \mid F$, $F(E) \mid id$ and parse the sentence: id + id * id.	LCD	3	A1	12-06-2023
		LCD	3	A2	13-06-2023
		LCD	3	A3	16-06-2023

11	5) Design, develop and implement a C/Java program to generate the machine code using Triples for the statement $A = -B * (C + D)$ whose intermediate code in three-address form: T1 = -B T2 = C + D T3 = T1 + T2 A = T3	LCD	3	A1	19-06-2023
		LCD	3	A2	20-06-2023
		LCD	3	A3	23-06-2023

12	REVISION/ PRACTICE SESSIONS	LCD	3	A1	26-06-2023
		LCD	3	A2	24-06-2023 27-06-2023
		LCD	3	A3	30-06-2023


Course in charge


Module Coordinator


HOD
Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru - 560 109


Principal
PRINCIPAL
K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109.



K.S. INSTITUTE OF TECHNOLOGY, BENGALURU- 560109
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME OF THE STAFF : Prof. KAVYA M S
SUBJECT CODE/NAME : 18CSL67/COMPUTER GRAPHICS LABORATORY WITH MINI PROJECT
SEMESTER/SEC/YEAR : VI / A / III
ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Batch No.	Proposed Date
Part A						
1	Introduction to Computer Graphics and OpenGL	L+D	BB+LCD	3	A1	24-03-2023
		L+D	BB+LCD	3	A2	20-03-2023
		L+D	BB+LCD	3	A3	21-03-2023
2	Implement Brenham's line drawing algorithm for all types of slope.	L+D	BB+LCD	3	A1	31-03-2023
		L+D	BB+LCD	3	A2	25-03-2023
		L+D	BB+LCD	3	A3	28-03-2023
3	Create and rotate a triangle about the origin and a fixed point.	L+D	BB+LCD	3	A1	21-04-2023
		L+D	BB+LCD	3	A2	27-03-2023
		L+D	BB+LCD	3	A3	04-04-2023
4	Draw a colour cube and spin it using OpenGL transformation matrices.	L+D	BB+LCD	3	A1	28-04-2023
		L+D	BB+LCD	3	A2	01-04-2023
		L+D	BB+LCD	3	A3	11-04-2023
5	Draw a color cube and allow the user to move the camera suitably to experiment with perspective viewing.	L+D	BB+LCD	3	A1	29-04-2023
		L+D	BB+LCD	3	A2	03-04-2023
		L+D	BB+LCD	3	A3	25-04-2023
6	Clip a lines using Cohen-Sutherland	L+D	BB+LCD	3	A1	05-05-2023

	algorithm	L+D	BB+LCD	3	A2	10-04-2023
		L+D	BB+LCD	3	A3	02-05-2023
7	To draw a simple shaded scene consisting of a tea pot on a table. Define suitably the position and properties of the light source along with the properties of the surfaces of the solid object used in the scene.	L+D	BB+LCD	3	A1	12-05-2023
		L+D	BB+LCD	3	A2	15-04-2023
		L+D	BB+LCD	3	A3	23-05-2023
8	Design, develop and implement recursively subdivide a tetrahedron to form 3D sierpinski gasket. The number of recursive steps is to be specified by the user.	L+D	BB+LCD	3	A1	02-06-2023
		L+D	BB+LCD	3	A2	24-04-2023
		L+D	BB+LCD	3	A3	30-05-2023
9	Develop a menu driven program to animate a flag using Bezier Curve algorithm	L+D	BB+LCD	3	A1	09-06-2023
		L+D	BB+LCD	3	A2	22-05-023
		L+D	BB+LCD	3	A3	13-06-2023
10	Develop a menu driven program to fill the polygon using scan line algorithm	L+D	BB+LCD	3	A1	16-06-2023
		L+D	BB+LCD	3	A2	29-05-2023
		L+D	BB+LCD	3	A3	20-06-2023
11	Revision	L+D	BB+LCD	3	A1	23-06-2023
		L+D	BB+LCD	3	A2	12-06-2023
		L+D	BB+LCD	3	A3	24-06-2023
12	Revision	L+D	BB+LCD	3	A1	30-06-2023
		L+D	BB+LCD	3	A2	19-06-2023
		L+D	BB+LCD	3	A3	27-06-2023
13	Revision	L+D	BB+LCD	3	A1	04-07-2023
		L+D	BB+LCD	3	A2	26-06-2023
		L+D	BB+LCD	3	A3	03-07-2023
14	Revision	L+D	BB+LCD	3	A1	
		L+D	BB+LCD	3	A2	05-07-2023
		L+D	BB+LCD	3	A3	

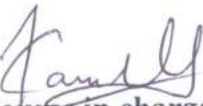
Web Materials:

1. <https://nptel.ac.in/courses/106106090>
2. https://www.udemy.com/course/computer_graphics_subject
3. <https://www.coursera.org/for-university-and-college-students>

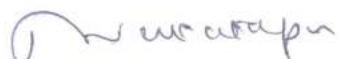
Details for the teaching Aids:

BB-Black Board

LCD- Projector


Course in charge


Module Coordinator


HOD
Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109



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K.S. INSTITUTE OF TECHNOLOGY

K.S. INSTITUTE OF TECHNOLOGY, BENGALURU- 560109
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME OF THE STAFF : Prof. KAVYA M S

SUBJECT CODE/NAME : 18CSL67/COMPUTER GRAPHICS LABORATORY WITH MINI PROJECT

SEMESTER/SEC/YEAR : VI / B / III

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Batch No.	Proposed Date
<i>Part A</i>						
1	Introduction to Computer Graphics and OpenGL	L+D	BB+LCD	3	B1	29-03-2023
		L+D	BB+LCD	3	B2	20-03-2023
		L+D	BB+LCD	3	B3	21-03-2023
2	Implement Brenham's line drawing algorithm for all types of slope.	L+D	BB+LCD	3	B1	05-04-2023
		L+D	BB+LCD	3	B2	25-03-2023
		L+D	BB+LCD	3	B3	28-03-2023
3	Create and rotate a triangle about the origin and a fixed point.	L+D	BB+LCD	3	B1	12-04-2023
		L+D	BB+LCD	3	B2	27-03-2023
		L+D	BB+LCD	3	B3	11-04-2023
4	Draw a colour cube and spin it using OpenGL transformation matrices.	L+D	BB+LCD	3	B1	19-04-2023
		L+D	BB+LCD	3	B2	01-04-2023
		L+D	BB+LCD	3	B3	25-04-2023
5	Draw a color cube and allow the user to move the camera suitably to experiment with perspective viewing.	L+D	BB+LCD	3	B1	26-04-2023
		L+D	BB+LCD	3	B2	03-04-2023
		L+D	BB+LCD	3	B3	02-05-2023
6	Clip a lines using Cohen-Sutherland	L+D	BB+LCD	3	B1	03-05-2023

	algorithm	L+D	BB+LCD	3	B2	10-04-2023
		L+D	BB+LCD	3	B3	23-05-2023
7	To draw a simple shaded scene consisting of a tea pot on a table. Define suitably the position and properties of the light source along with the properties of the surfaces of the solid object used in the scene.	L+D	BB+LCD	3	B1	06-05-2023
		L+D	BB+LCD	3	B2	15-04-2023
		L+D	BB+LCD	3	B3	30-05-2023
		L+D	BB+LCD	3	B1	24-05-2023
8	Design, develop and implement recursively subdivide a tetrahedron to form 3D sierpinski gasket. The number of recursive steps is to be specified by the user.	L+D	BB+LCD	3	B2	24-04-2023
		L+D	BB+LCD	3	B3	13-06-2023
		L+D	BB+LCD	3	B1	31-05-2023
9	Develop a menu driven program to animate a flag using Bezier Curve algorithm	L+D	BB+LCD	3	B2	22-05-023
		L+D	BB+LCD	3	B3	20-06-2023
		L+D	BB+LCD	3	B1	07-06-2023
10	Develop a menu driven program to fill the polygon using scan line algorithm	L+D	BB+LCD	3	B2	29-05-2023
		L+D	BB+LCD	3	B3	24-06-2023
		L+D	BB+LCD	3	B1	14-06-2023
11	Mini Project	L+D	BB+LCD	3	B2	12-06-2023
		L+D	BB+LCD	3	B3	27-06-2023
		L+D	BB+LCD	3	B1	21-06-2023
12	Mini Project	L+D	BB+LCD	3	B2	19-06-2023
		L+D	BB+LCD	3	B3	04-07-2023
		L+D	BB+LCD	3	B1	28-06-2023
13	Revision	L+D	BB+LCD	3	B2	26-06-2023
		L+D	BB+LCD	3	B3	
		L+D	BB+LCD	3	B1	04-07-2023
14	Revision	L+D	BB+LCD	3	B2	05-07-2023
		L+D	BB+LCD	3	B3	
		L+D	BB+LCD	3	B1	

Web Materials:

1. <https://nptel.ac.in/courses/106106090>
2. https://www.udemy.com/course/computer_graphics_subject
3. <https://www.coursera.org/for-university-and-college-students>

Details for the teaching Aids:

BB-Black Board

LCD- Projector



Course in charge



Module Coordinator



HOD

*Head of the Department
Dept of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109*



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K.S. INSTITUTE OF TECHNOLOGY, BENGALURU- 560109
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME OF THE STAFF : Mr. Harshavardhan J R & Mrs. Pallavi K N
SUBJECT CODE/NAME : 18CSMP68 / Mobile Application Development Lab
SEMESTER/SEC/YEAR : VI / B / III
ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Batch No.	Proposed Date
1	Create an application to design a Visiting Card. The Visiting card should have a company logo at the top right corner. The company name should be displayed in Capital letters, aligned to the center. Information like the name of the employee, job title, phone number, address, email, fax and the website address isto be displayed. Insert a horizontal line between the job title and the phone number.	L+D	BB+LCD	3	B2	29-03-2023
		L+D	BB+LCD	3	B3	20-03-2023
		L+D	BB+LCD	3	B1	21-03-2023
2	Develop an Android application using controls like Button, TextView, EditText for designing a calculator having basic functionality like Addition, Subtraction, Multiplication, and Division.	L+D	BB+LCD	3	B2	05-04-2023
		L+D	BB+LCD	3	B3	25-03-2023
		L+D	BB+LCD	3	B1	28-03-2023
3	Create a SIGN Up activity with Username and Password. Validation of password should happen based on the following rules: <ul style="list-style-type: none">• Password should contain uppercase and lowercase	L+D	BB+LCD	3	B2	12-04-2023
		L+D	BB+LCD	3	B3	27-03-2023
		L+D	BB+LCD	3	B1	11-04-2023

	<p>letters.</p> <ul style="list-style-type: none"> • Password should contain letters and numbers. • Password should contain special characters. • Minimum length of the password (the default value is 8).. 					
4	Develop an application to set an image as wallpaper. On click of a button, the wallpaper image should start to change randomly every 30 seconds.	L+D	BB+LCD	3	B2	19-04-2023
		L+D	BB+LCD	3	B3	01-04-2023
		L+D	BB+LCD	3	B1	25-04-2023
5	Write a program to create an activity with two buttons START and STOP. On pressing of the START button, the activity must start the counter by displaying the numbers from One and the counter must keep on counting until the STOP button is pressed. Display the counter value in a TextView control.	L+D	BB+LCD	3	B2	26-04-2023
		L+D	BB+LCD	3	B3	03-04-2023
		L+D	BB+LCD	3	B1	02-05-2023
6	Create two files of XML and JSON type with values for City_Name, Latitude, Longitude, Temperature, and Humidity. Develop an application to create an activity with two buttons to parse the XML and JSON files which when clicked should display the data in their respective layouts side by side.	L+D	BB+LCD	3	B2	03-05-2023
		L+D	BB+LCD	3	B3	10-04-2023
		L+D	BB+LCD	3	B1	23-05-2023
7	Develop a simple application with one EditText so that the user can write some text in it. Create a button called "Convert Text to Speech" that converts the user input text into voice.	L+D	BB+LCD	3	B2	06-05-2023
		L+D	BB+LCD	3	B3	15-04-2023
		L+D	BB+LCD	3	B1	30-05-2023
8	Create an activity like a phone dialer with CALL and SAVE buttons. On pressing the CALL button, it must call the phone number and on pressing the SAVE button it must save the number to the phone contacts. .	L+D	BB+LCD	3	B2	24-05-2023
		L+D	BB+LCD	3	B3	24-04-2023
		L+D	BB+LCD	3	B1	13-06-2023
9	Practice	L+D	BB+LCD	3	B2	31-05-2023

		L+D	BB+LCD	3	B3	22-05-023
		L+D	BB+LCD	3	B1	20-06-2023
10	Practice	L+D	BB+LCD	3	B2	07-06-2023
		L+D	BB+LCD	3	B3	29-05-2023
		L+D	BB+LCD	3	B1	24-06-2023
		L+D	BB+LCD	3	B2	14-06-2023
		L+D	BB+LCD	3	B3	12-06-2023
11	Practice	L+D	BB+LCD	3	B1	27-06-2023
		L+D	BB+LCD	3	B2	21-06-2023
		L+D	BB+LCD	3	B3	19-06-2023
12	Test 1	L+D	BB+LCD	3	B1	04-07-2023
		L+D	BB+LCD	3	B2	28-06-2023
		L+D	BB+LCD	3	B3	26-06-2023
13	Revision	L+D	BB+LCD	3	B1	
		L+D	BB+LCD	3	B2	04-07-2023
		L+D	BB+LCD	3	B3	05-07-2023
14	Revision	L+D	BB+LCD	3	B1	
		L+D	BB+LCD	3	B2	
		L+D	BB+LCD	3	B3	

Web Materials:

1. Google Developer Training, "Android Developer Fundamentals Course – Concept Reference", Google Developer Training Team, 2017.

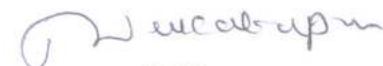
Details for the teaching Aids:

BB-Black Board

LCD- Projector


Course In-charge


Module Coordinator


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K S I T
K.S. INSTITUTE OF TECHNOLOGY

K.S. INSTITUTE OF TECHNOLOGY, BENGALURU- 560109
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME OF THE STAFF : Mr. Harshavardhan J R & Mrs. Pallavi K N

SUBJECT CODE/NAME : 18CSMP68 / Mobile Application Development Laboratory

SEMESTER/SEC/YEAR : VI / A / III

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Batch No.	Proposed Date
1	Create an application to design a Visiting Card. The Visiting card should have a company logo at the top right corner. The company name should be displayed in Capital letters, aligned to the center. Information like the name of the employee, job title, phone number, address, email, fax and the website address isto be displayed. Insert a horizontal line between the job title and the phone number.	L+D	BB+LCD	3	A2	24-03-2023
		L+D	BB+LCD	3	A3	20-03-2023
		L+D	BB+LCD	3	A1	21-03-2023
2	Develop an Android application using controls like Button, TextView, EditText for designing a calculator having basic functionality like Addition, Subtraction, Multiplication, and Division.	L+D	BB+LCD	3	A2	31-03-2023
		L+D	BB+LCD	3	A3	25-03-2023
		L+D	BB+LCD	3	A1	28-03-2023
3		L+D	BB+LCD	3	A2	21-04-2023
		L+D	BB+LCD	3	A3	27-03-2023

	<p>Create a SIGN Up activity with Username and Password. Validation of password should happen based on the following rules:</p> <ul style="list-style-type: none"> • Password should contain uppercase and lowercase letters. • Password should contain letters and numbers. • Password should contain special characters. • Minimum length of the password (the default value is 8).. 	L+D	BB+LCD	3	A1	04-04-2023
4	Develop an application to set an image as wallpaper. On click of a button, the wallpaper image should start to change randomly every 30 seconds.	L+D	BB+LCD	3	A2	28-04-2023
		L+D	BB+LCD	3	A3	01-04-2023
		L+D	BB+LCD	3	A1	11-04-2023
5	Write a program to create an activity with two buttons START and STOP. On pressing of the START button, the activity must start the counter by displaying the numbers from One and the counter must keep on counting until the STOP button is pressed. Display the counter value in a TextView control.	L+D	BB+LCD	3	A2	29-04-2023
		L+D	BB+LCD	3	A3	03-04-2023
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6	Create two files of XML and JSON type with values for City_Name, Latitude, Longitude, Temperature, and Humidity. Develop an application to create an activity with two buttons to parse the XML and JSON files which when clicked should display the data in their respective layouts side by side.	L+D	BB+LCD	3	A2	05-05-2023
		L+D	BB+LCD	3	A3	10-04-2023
		L+D	BB+LCD	3	A1	02-05-2023
7	Develop a simple application with one EditText so that the user can write some text in	L+D	BB+LCD	3	A2	12-05-2023
		L+D	BB+LCD	3	A3	15-04-2023

	it. Create a button called "Convert Text to Speech" that converts the user input text into voice.	L+D	BB+LCD	3	A1	23-05-2023
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		L+D	BB+LCD	3	A1	30-05-2023
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		L+D	BB+LCD	3	A3	22-05-023
9	Practice	L+D	BB+LCD	3	A1	13-06-2023
		L+D	BB+LCD	3	A2	16-06-2023
		L+D	BB+LCD	3	A3	29-05-2023
10	Practice	L+D	BB+LCD	3	A1	20-06-2023
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		L+D	BB+LCD	3	A3	12-06-2023
11	Practice	L+D	BB+LCD	3	A1	24-06-2023
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		L+D	BB+LCD	3	A3	26-06-2023
13	Revision	L+D	BB+LCD	3	A1	03-07-2023
		L+D	BB+LCD	3	A2	
		L+D	BB+LCD	3	A3	05-07-2023
14	Revision	L+D	BB+LCD	3	A1	
		L+D	BB+LCD	3	A2	
		L+D	BB+LCD	3	A3	

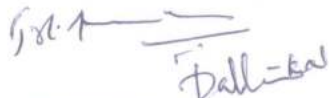
Text Book:

1. Google Developer Training, "Android Developer Fundamentals Course – Concept Reference", Google Developer Training Team, 2017.

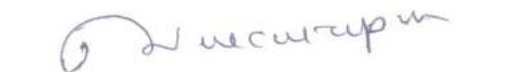
Details for the teaching Aids:

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K S INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME OF THE STAFF : LAXMIKANTHA K

SUBJECT CODE/NAME : 18CS81/ INTERNET OF THINGS

SEMESTER/YEAR : VIII A/ IV

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Introduction						
1	What is IoT, Genesis of IoT	L+D	LCD	1	1	13/2/2023
2	IoT Impact, IoT and Digitization	L+ D	LCD+BB	1	2	13/2/2023
3	Convergence of IT and IoT	L+ D	LCD+BB	1	3	20/2/2023
4	IoT Network Architecture and Design	L+D	LCD+BB	1	4	20/2/2023
5	IoT Challenges	L+D	LCD+BB	1	5	21/2/2023
6	Drivers Behind New Network Architectures	L+D, PS	LCD	1	6	21/2/2023
7	Comparing IoT Architectures, A Simplified IoT Architecture	L+I	LCD+BB	1	7	06/3/2023
8	The Core IoT Functional Stack	L+D, PS	BB	1	8	06/3/2023
9	IoT Data Management and Compute Stack.	L+D, PS	BB	1	9	07/3/2023
MODULE 2: Smart Objects						
10	Smart Objects: The “Things” in IoT	L+D	LCD+BB	1	10	7/3/2023

11	Sensors, Actuators	L+D	LCD+BB	1	11	13/3/2023
12	Smart Objects	L+D	BB	2	12	13/3/2023
IA-I (13/03/2023)						
13	Sensor Networks	L+D	BB	1	13	14/3/2023
14	Connecting Smart Objects	L+D, PS	LCD+BB	1	14	14/3/2023
15	Communications Criteria,	PS	LCD+BB	1	15	14/3/2023
16	IoT Access Technologies.	L+I	LCD+BB	1	16	20/3/2023
MODUL E 3: IP as the IoT Network Layer						
17	IP as the IoT Network Layer	L+D, L+I	BB	1	17	20/3/2023
18	The Business Case for IP	L+I	BB	1	18	21/3/2023
19	The ned for Optimization	L+D	BB	1	19	21/3/2023
20	Optimizing IP for IoT	L+D	BB	1	20	27/3/2023
21	Profiles and Compliances	L+D	BB	1	21	27/3/2023
22	Application Protocols for IoT	L+D	BB	1	22	28/3/2023
23	The Transport Layer	L+D	BB	1	23	28/3/2023
24	IoT Application Transport Methods	L+I,	BB	1	24	3/4/2023
MOD ULE 4: Data and Analytics for IoT						
25	Data and Analytics for IoT	L+D	BB	1	25	3/4/2023
26	An Introduction to Data Analytics for IoT	L+D	BB	1	26	10/4/2023
27	Machine Learning, Big Data Analytics Tools and	L+D, PS	LCD+BB	1	27	10/4/2023

	Technology					
28	Edge Streaming Analytics, Network Analytics	L+D	LCD+BB	1	28	10/04/2023
29	Securing IoT, A Brief History of OT Security	L+D	LCD+BB	1	29	11/04/2023
30	Common Challenges in OT Security	L+D	LCD+BB	1	30	11/4/2023
31	How IT and OT Security Practices and Systems Vary	L+D	LCD+BB	1	31	17/4/2023
32	Formal Risk Analysis Structures: OCTAVE and FAIR, The Phased Application of Security in an Operational Environment			1	32	17/4/2023
IA-II (17/04/2023)						
MODULE 5: IoT Physical Devices and Endpoints						
33	IoT Physical Devices and Endpoints - Arduino UNO: Introduction to Arduino, Arduino UNO,	L+D	LCD+BB	1	33	18/4/2023
34	Installing the Software, Fundamentals of Arduino Programming.	L+D	LCD+BB	1	34	18/4/2023
35	IoT Physical Devices and Endpoints - RaspberryPi: Introduction to RaspberryPi,	L+D	LCD+BB	1	35	25/4/2023
36	About the RaspberryPi Board: Hardware Layout, Operating Systems on RaspberryPi,	L+D	LCD+BB	1	36	25/4/2023
37	Configuring RaspberryPi, Programming RaspberryPi with Python, Wireless Temperature Monitoring System Using Pi	L+D	BB	1	37	02/5/2023
38	DS18B20 Temperature Sensor, Connecting Raspberry Pi via SSH, Accessing Temperature from DS18B20 sensors	L+D, PS	BB	1	38	02/5/2023
39	Remote access to Raspberry, Smart and Connected Cities, An IoT Strategy for Smarter Cities.	L+D	LCD+BB	1	39	08/5/2023
40	Smart City IoT Architecture, Smart City Security Architecture, Smart City Use-Case Examples.	L+D	LCD+BB	1	40	08/5/2023

Text Books:

1. David Hanes, Gonzalo Salgueiro, Patrick Grossetete, Robert Barton, Jerome Henry, "IoT Fundamentals: Networking Technologies, Protocols, and Use Cases for the Internet of Things", 1 stEdition, Pearson Education (Cisco Press Indian Reprint). (ISBN: 978-9386873743)
2. Srinivasa K G, "Internet of Things", CENGAGE Leaning India, 2017

Reference Books:

1. Vijay Madiseti and ArshdeepBahga, "Internet of Things (A Hands-on-Approach)", 1st Edition, VPT, 2014. (ISBN: 978-8173719547)
2. Raj Kamal, "Internet of Things: Architecture and Design Principles", 1st Edition, McGraw Hill Education, 2017. (ISBN: 978-9352605224)


Web Materials:

Weblinks and Video Lectures (e-Resources):


- 1) http://onlinecourses.nptel.ac.in/noc22_cs53/preview
- 2) <http://www.digimat.in/nptel/courses/video/106105166>

Details for the teaching Aids

Black Board and LCD


Signature of Course In-Charge


Signature of Module Coordinator


Signature of HOD-CSE
Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : HARSHAVARDHAN J.R
COURSE CODE/TITLE : STORAGE AREA NETWORK
YEAR/ SEMESTER/SECTION : FINAL/8TH/A
BRANCH :COMPUTER SCIENCE AND ENGINEERING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: Storage System: Introduction to Information Storage, Data Center Environment						
1	Storage System: Introduction to Information Storage: Information Storage.	LCD+BB	PPTS	1	1	13/2
2	Evolution of Storage Architecture.	LCD+BB	PPTS	1	2	13/2
3	Data Center Infrastructure.	LCD+BB	PPTS	1	3	20/2
4	Virtualization and Cloud Computing.	LCD+BB	PPTS	1	4	20/2
5	Data Center Environment: Application Database Management System (DBMS), Host (Compute), Connectivity.	LCD+BB	PPTS	1	5	21/2
6	Storage, Disk Drive Components.	LCD+BB	PPTS	1	6	21/2
7.	Disk Drive Performance, Host Access to Data.	LCD+BB	PPTS	1	7	27/2

8.	Direct-Attached Storage, Storage Design Based on Application.	LCD+BB	PPTS	1	8	27/2
Module 2: Data Protection – RAID, Intelligent Storage Systems, Fibre Channel Storage Area Networks						
9.	Data Protection - RAID : RAID Implementation Methods.	LCD+BB	PPTS	1	9	28/2
10.	RAID Array Components, RAID Techniques, RAID Levels.	LCD+BB	PPTS	1	10	28/2
11.	RAID Impact on Disk Performance, RAID Comparison.	LCD+BB	PPTS	1	11	6/3
12.	Intelligent Storage Systems : Components of an Intelligent Storage System, Types of Intelligent Storage Systems.	LCD+BB	PPTS	1	12	14/3
13.	Fibre Channel Storage Area Networks - Fibre Channel: Overview.	LCD+BB	PPTS	1	13	14/3
14.	The SAN and Its Evolution.	LCD+BB	PPTS	1	14	20/3
15.	Components of FC SAN.	LCD+BB	PPTS	1	15	20/3
Module 3: IP SAN and FCoE, Network-Attached Storage						
16.	IP SAN and FCoE: iSCSI, FCIP.	LCD+BB	PPTS	1	16	21/3
17.	Network-Attached Storage: General-Purpose Servers versus NAS Devices.	LCD+BB	PPTS	1	17	21/3
18.	Benefits of NAS.	LCD+BB	PPTS	1	18	27/3
19.	File Systems and Network File Sharing.	LCD+BB	PPTS	1	19	27/3
20.	Components of NAS.	LCD+BB	PPTS	1	20	28/3
21.	NAS I/O Operation.	LCD+BB	PPTS	1	21	28/3
22.	NAS Implementations, NAS File-Sharing Protocols.	LCD+BB	PPTS	1	22	3/4

23.	Factors Affecting NAS Performance.	LCD+BB	PPTS	1	23	3/4
Module 4: Introduction to Business Continuity, Backup and Archive						
24.	Introduction to Business Continuity: Information Availability.	LCD+BB	PPTS	1	24	10/4
25.	BC Terminology, BC, Planning Life Cycle.	LCD+BB	PPTS	1	25	10/4
26.	Failure Analysis, Business Impact Analysis.	LCD+BB	PPTS	1	26	11/4
27.	BC Technology Solutions,	LCD+BB	PPTS	1	27	11/4
28.	Backup and Archive: Backup Purpose, Backup Considerations.	LCD+BB	PPTS	1	28	18/4
29.	Backup Granularity, Recovery Considerations.	LCD+BB	PPTS	1	29	18/4
30.	Backup Methods, Backup Architecture.	LCD+BB	PPTS	1	30	25/4
31.	Backup and Restore Operations.	LCD+BB	PPTS	1	31	25/4
32.	Backup Topologies, Backup in NAS Environments	LCD+BB	PPTS	1	32	2/5
Module 5: Local Replication, Remote Replication						
33.	Local Replication: Replication Terminology, Uses of Local Replicas.	LCD+BB	PPTS	1	33	2/5
34.	Replica Consistency, Local Replication Technologies.	LCD+BB	PPTS	1	34	8/5
35.	Tracking Changes to Source and Replica, Restore and Restart Considerations.	LCD+BB	PPTS	1	35	8/5
36.	Creating Multiple Replicas.	LCD+BB	PPTS	1	36	9/5
37.	Remote Replication: Modes of Remote Replication, Remote Replication Technologies.	LCD+BB	PPTS	1	37	9/5

38.	Securing the Storage Infrastructure: Information Security Framework, Risk Triad, Storage Security Domains.	LCD+BB	PPTS	1	38	15/5
39.	Security Implementations in Storage Networking.	LCD+BB	PPTS	1	39	15/5

Text Books:

1. EMC Education Services, "**Information Storage and Management**", Wiley India Publications, 2009. ISBN: 9781118094839


Reference Books:

1. Paul Massiglia, Richard Barker, "**Storage Area Network Essentials: A Complete Guide to Understanding and Implementing SANs Paperback**", 1st Edition, Wiley India Publications, 2008.

Details of the teaching aids:

PPTs


Course Incharge


HOD
Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109



KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

NAME OF THE STAFF : Mr. Roopesh Kumar B N
SUBJECT CODE/NAME : 18CS822/ STORAGE AREA NETWORKS
SEMESTER/YEAR/SEC : VIII / IV/ B
ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	EVOLUTION OF SAN	L+I	LCD	1	1	13/02/2023
2	Data centre elements	L+I	LCD	1	2	13/02/2023
3	Disk drive components	L+I	LCD	1	3	14/02/2023
4	Disk drive components	L+I	LCD	1	4	14/02/2023
5	Host Access	L+I	LCD	1	5	20/02/2023
6	DAS	L+I	LCD	1	6	20/02/2023
7	DAS	L+I	LCD	1	7	21/02/2023
8	SAN applications	L+I	LCD	1	8	21/02/2023
MODULE 2						
9	RAID	L+I	LCD	1	9	27/02/2023
10	RAID	L+I	LCD	1	10	27/02/2023
11	RAID	L+I	LCD	1	11	28/02/2023
12	ISS	L+I	LCD	1	12	28/02/2023
13	ISS	L+I	LCD	1	13	6/03/2023
14	FC SAN	L+I	LCD	1	14	6/03/2023

15	FC SAN	L+I	LCD	1	15	7/03/2023
16	FC SAN	L+I	LCD	1	16	7/03/2023
MODULE 3						
17	IP SAN	L+I	LCD	1	17	20/03/2023
18	IP SAN	L+I	LCD	1	18	20/03/2023
19	FCIP	L+I	LCD	1	19	21/03/2023
20	FCIP	L+I	LCD	1	20	21/03/2023
21	NAS	L+I	LCD	1	21	27/03/2023
22	NAS	L+I	LCD	1	22	27/03/2023
23	NAS IO	L+I	LCD	1	23	28/03/2023
24	NAS Performance	L+I	LCD	1	24	28/03/2023
MODULE 4						
25	BC	L+I	LCD	1	25	4/4/2023
26	Information Availability	L+I	LCD	1	26	4/4/2023
27	BC planning life cycle	L+I	LCD	1	27	10/4/2023
28	Back up Methods	L+I	LCD	1	28	10/4/2023
29	Back up Architecture	L+I	LCD	1	29	11/4/2023
30	Back up topologies	L+I	LCD	1	30	11/4/2023
31	Back up in NAS	L+I	LCD	1	31	24/4/2023
32	Back up in NAS	L+I	LCD	1	32	24/4/2023
MODULE 5						
33	Local replication	L+I	LCD	1	33	2/5/2023
34	Remote replication	L+I	LCD	1	34	2/5/2023
35	RISK TRIAD	L+I	LCD	1	35	25/4/2023
36	KERBEROS	L+I	LCD	1	36	25/4/2023
37	IP CHAP	L+I	LCD	1	37	9/5/2023
38	Security Domains	L+I	LCD	1	38	9/5/2023
39	Security Implementations	L+I	LCD	1	39	13/5/2023
40	Security Framework	L+I	LCD	1	40	13/5/2023
I INTERNALS						13/03/2023
II INTERNALS						17/04/2023
III INTERNALS						11/05/2023

1.	Text Books: 1. EMC Education Services, "Information Storage and Management", Wiley India Publications, 2009. ISBN: 9781118094839
2.	Reference Books: 1. Paul Massiglia, Richard Barker, "Storage Area Network Essentials: A Complete Guide to Understanding and Implementing SANs Paperback", 1st Edition, Wiley India Publications, 2008
3.	Useful Websites: https://www.coursera.org https://nptel.ac.in



COURSE-INCHARGE



Signature of HOD

*Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109*



K S INSTITUTE OF TECHNOLOGY BENGALURU
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

NAME OF THE STAFF : **KRISHNA GUDI**
SUBJECT CODE/NAME : **18CS81/ INTERNET OF THINGS**
SEMESTER/SEC/YEAR : **VIII / B / IV**
ACADEMIC YEAR : **2022-2023**

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Pe-riods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	What is IoT, Genesis of IoT, IoT and Digitization	L+D	BB+LCD	1	1	13/2/2023
2	IoT Impact	L+ D	BB+LCD	1	2	13/2/2023
3	Convergence of IT and IoT	L+ D	BB+LCD	1	3	14/2/2023
4	IoT Impact	L+D	BB+LCD	1	4	14/2/2023
5	IoT Challenges	L+D	BB+LCD	1	5	20/2/2023
6	IoT Network Architecture and Design	L+D	BB+LCD	1	6	20/2/2023
7	Drivers Behind New Network Architectures	L+D	BB+LCD	1	7	21/2/2023
8	Comparing IoT Architectures	L+D	BB+LCD	1	8	21/2/2023
9	A Simplified IoT Architecture, The Core IoT Func-tional Stack	L+D	BB+LCD	1	9	27/2/2023
10	IoT Data Management and Compute Stack	L+D	BB+LCD	1	10	28/2/2023

MODULE 2						
11	Smart Objects: The "Things" in IoT	L+D	BB+LCD	1	11	28/2/2023
12	Sensors	L+D	BB+LCD	1	12	06/2/2023
13	Actuators	L+D	BB+LCD	1	13	06/2/2023
14	Smart Objects	L+D	BB+LCD	1	14	07/3/2023
15	Sensors Networks	L+D	BB+LCD	1	15	07/3/2023
16	Internal Assessment - 1				16	13/3/2023
17	Connecting Smart Objects , Communication Criteria	L+D	BB+LCD	1	17	20/3/2023
18	IoT Access Technologies	L+D	BB+LCD	1	18	20/3/2023
MODULE 3						
19	IP as the IoT Network Layer	L+D	BB+LCD	1	19	21/3/2023
20	The Business Case for IP	L+D	BB+LCD	1	20	21/3/2023
21	The need for Optimization	L+D	BB+LCD	1	21	27/3/2023
22	Optimizing IP for IoT	L+D	BB+LCD	1	22	27/3/2023
23	Profiles and Compliances	L+D	BB+LCD	1	23	28/3/2023
24	Application Protocols for IoT	L+D	BB+LCD	1	24	28/3/2023
25	The Transport Layer	L+D	BB+LCD	2	25	4/4/2023
26	IoT Application Transport Methods	GD	BB+LCD	2	26	4/4/2023
MODULE - 4						

27	Data and Analytics for IoT. An Introduction to Data Analytics for IoT	GD	BB+LCD	1	27	10/4/2023
28	Machine Learning	GD	BB+LCD	1	28	10/4/2023
29	Big Data Analytics Tools and Technology	L+D	BB+LCD	1	29	11/4/2023
30	Edge Streaming Analytics	L+D	BB+LCD	1	30	11/4/2023
31	Internal Assessment - 2				31	17/4/2023
32	Network Analytics. Securing IoT	L+D	BB+LCD	1	32	24/4/2023
33	A Brief History of OT Security. Common Challenges in OT Security	L+D	BB+LCD	1	33	24/4/2023
34	How IT and OT Security Practices and Systems Vary	L+D	BB+LCD	1	34	25/4/2023
35	Formal Risk Analysis Structures: OCTAVE and FAIR	L+D	BB+LCD	1	35	25/4/2023
MODULE 5						
36	IoT Physical Devices and Endpoints - Arduino UNO: Introduction to Arduino	GD	BB+LCD	1	36	2/5/2023
37	Arduino UNO. Installing the Software	L+D	BB+LCD	1	37	2/5/2023
38	Fundamentals of Arduino Programming.	L+D	BB+LCD	1	38	8/5/2023

39	IoT Physical Devices and Endpoints - RaspberryPi: Introduction to RaspberryPi, Hardware Layout, Programming Raspberry-Pi with Python	L+D	BB+LCD	1	39	8/5/2023
40	DS18B20 Temperature Sensor, Connecting Raspberry Pi via SSH, Smart and Connecting Cities	L+D	BB+LCD	1	40	09/5/2023
41	Internal Assessment - 3				41	11/5/2023

Textbooks:

1. David Hanes, Gonzalo Salgueiro, Patrick Grossetete, Robert Barton, Jerome Henry, "IoT Fundamentals: Networking Technologies, Protocols, and Use Cases for the Internet of Things", 1st Edition, Pearson Education (Cisco Press Indian Reprint). (ISBN: 978-9386873743).
2. Srinivasa K G. "Internet of Things", CENGAGE Learning India, 2017.

Reference Books:

1. Vijay Madiseti and ArshdeepBahga, "Internet of Things (A Hands-on-Approach)", 1st Edition, VPT, 2014. (ISBN: 978-8173719547).
2. Raj Kamal, "Internet of Things: Architecture and Design Principles", 1st Edition, McGraw Hill Education, 2017. (ISBN: 978-9352605224)



Signature of Faculty



Signature of HoD



Signature of Principal

PRINCIPAL
K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109.



K S INSTITUTE OF TECHNOLOGY, BANGALORE
DEPARTMENT OF APPLIED SCIENCES & HUMANITIES
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : DR. SALEEM KHAN

COURSE TYPE / CODE / TITLE : NON-INTEGRATED/ BETCK205E / Renewable Energy Sources

YEAR/ SEMESTER/SECTION : I / I / I

BRANCH : COMPUTER & COMMUNICATION ENGINEERING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1						
1	Introduction to Renewable Energy Sources	L+D,PS	LCD	1	1	25/05/2023
2	Principles of renewable energy; energy and sustainable development, fundamentals and social Implications.	L+D,PS	LCD	1	2	26/05/2023
3	Worldwide renewable energy availability, renewable energy availability in India.	L+D,PS	LCD	1	3	29/05/2023
4	brief descriptions on solar energy, wind energy	L+D,PS	LCD	1	4	31/05/2023
5	Tidal energy, wave energy	L+D,PS	LCD	1	5	01/06/2023
6	Ocean thermal energy, biomass energy	L+D,PS	LCD	1	6	02/06/2023
7	Geothermal energy, oil shale.	L+D,PS	LCD	1	7	05/06/2023
8	Introduction to Internet of energy (IOE).	L+D,PS	LCD	1	8	07/06/2023
Module 2						

9	Solar Energy: Fundamentals; Solar Radiation;	L+D,PS	LCD	1	9	08/06/2023
10	Estimation of solar radiation on horizontal and inclined surfaces	L+D,PS	LCD+BB	1	10	09/06/2023
11	Solar radiation Measurements- Pyrheliometer, Pyrometer	L+D,PS	LCD	1	11	10/06/2023
12	Sunshine Recorder. Solar Thermal systems: Flat plate collector	L+D,PS	LCD	1	12	12/06/2023
13	Solar distillation; Solar pond electric power plant.	L+D,PS	LCD	1	13	14/06/2023
14	Solar electric power generation- Principle of Solar cell	L+D,PS	LCD	1	14	15/06/2023
15	Photovoltaic system for electric power generation	L+D,PS	LCD	1	15	16/06/2023
16	Advantages, Disadvantages and applications of solar photovoltaic system.	L+D,PS	LCD	1	16	19/06/2023

Module 3

17	Wind Energy: Properties of wind, availability of wind energy in India,	L+D,PS	LCD	1	17	21/06/2023
18	Wind velocity and power from wind	L+D,PS	LCD+BB	1	18	22/06/2023
19	Major problems associated with wind power, Basic components of wind energy conversion system (WECS);	L+D,PS	LCD	1	19	23/06/2023
20	Classification of WECS- Horizontal axis- single, double and multiblade system.	L+D,PS	LCD	1	20	30/06/2023
21	Vertical axis- Savonius and darrius types.	L+D,PS	LCD	1	21	03/07/2023
22	Biomass Energy: Introduction; Photosynthesis Process; Biofuels; Biomass Resources;	L+D,PS	LCD	1	22	05/07/2023
23	Biomass conversion technologies-fixed dome;	L+D,PS	LCD	1	23	06/07/2023
24	Urban waste to energy conversion; Biomass gasification (Downdraft).	L+D,PS	LCD	1	24	07/07/2023

Module 4

25	Tidal Power: Tides and waves as energy suppliers and their mechanics	L+D,PS	LCD	1	25	08/07/2023
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26	Fundamental characteristics of tidal power	L+D,PS	LCD	1	26	10/07/2023
27	Harnessing tidal energy,	L+D,PS	LCD	1	27	12/07/2023
28	Advantages and limitations	L+D,PS	LCD	1	28	13/07/2023
29	Ocean Thermal Energy Conversion: Principle of working	L+D,PS	LCD	1	29	14/07/2023
30	Open cycle and closed cycle system.	L+D,PS	LCD	1	30	17/07/2023
31	OTEC power stations in the world	L+D,PS	LCD	1	31	19/07/2023
32	Problems associated with OTEC.	L+D,PS	LCD	1	32	20/07/2023

Module 5

33	Green Energy: Introduction	L+D,PS	LCD	1	33	21/07/2023
34	Fuel cells	L+D,PS	LCD	1	34	24/07/2023
35	Classification of fuel cells	L+D,PS	LCD	1	35	26/07/2023
36	Zero energy Concepts. Benefits of hydrogen energy	L+D,PS	LCD	1	36	27/07/2023
37	Hydrogen production technologies (electrolysis method only).	L+D,PS	LCD	1	37	28/07/2023
38	Hydrogen energy storage	L+D,PS	LCD	1	38	03/08/2023
39	Applications of hydrogen energy,	L+D,PS	LCD	1	39	04/08/2023
40	Problem associated with hydrogen energy.	L+D,PS	LCD	1	40	05/08/2023
41	Revision/Activity	L+D,PS	LCD	1	41	07/08/2023
42	Revision/Activity	L+D,PS	LCD	1	42	09/08/2023
43	Revision/Activity	L+D,PS	LCD	1	43	10/08/2023
44	Revision/Activity	L+D,PS	LCD	1	44	11/08/2023
45	Revision/Activity	L+D,PS	LCD	1	45	14/08/2023
46	Revision/Activity	L+D,PS	LCD	1	46	16/08/2023

47	Revision/Activity	L+D,PS	LCD	1	47	17/08/2023
48	Revision/Activity	L+D,PS	LCD	1	48	18/08/2023
49	Revision/Activity	L+D,PS	LCD	1	49	19/08/2023
50	Revision/Activity	L+D,PS	LCD	1	50	21/08/2023
51	Revision/Activity	L+D,PS	LCD	1	51	23/08/2023
52	Revision/Activity	L+D,PS	LCD	1	52	24/08/2023
53	Revision/Activity	L+D,PS	LCD	1	53	25/08/2023
54	Revision/Activity	L+D,PS	LCD	1	54	28/08/2023
55	Revision/Activity	L+D,PS	LCD	1	55	30/08/2023
56	Revision/Activity	L+D,PS	LCD	1	56	04/09/2023
57	Revision/Activity	L+D,PS	LCD	1	57	06/09/2023
58	Revision/Activity	L+D,PS	LCD	1	58	07/09/2023
59	Revision/Activity	L+D,PS	LCD	1	59	08/09/2023

Text Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)

1. Nonconventional Energy sources, G D Rai, Khanna Publication, Fourth Edition,
2. Energy Technology, S.Rao and Dr. B.B. Parulekar, Khanna Publication.Solarenergy, SubhasP Sukhatme, TataMcGrawHill, 2ndEdition,1996.

Reference Books:

1. Principles of Energy conversion, A. W. Culp Jr., McGraw Hill, 1996
2. Non-Convention EnergyResources, Shobh Nath Singh, Pearson, 2018

Web Materials:

Weblinks and Video Lectures (e-Resources):

- ✓ E-book URL: <https://www.pdfdrive.com/non-conventional-energy-sources-e10086374.html>
- ✓ E-book URL: <https://www.pdfdrive.com/non-conventional-energy-systems-nptel-d17376903.html>
- ✓ E-book URL: <https://www.pdfdrive.com/renewable-energy-sources-and-their-applications-e33423592.html>
- ✓ E-book URL: <https://www.pdfdrive.com/lecture-notes-on-renewable-energy-sources-e34339149.html>
- ✓ https://onlinecourses.nptel.ac.in/noc18_ge09/preview

Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

- ✓ Poster presentation on the theme of renewable energy sources
- ✓ Industry Visit

Details of the teaching aids:

1. BLACK BOARD USAGE
2. Photographs
3. PPT
4. Videos

Signature of Course In-Charge



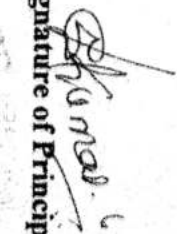
Signature of Module Coordinator



Signature of HOD



Signature of Principal





K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF APPLIED SCIENCE AND HUMANITIES
LESSON PLAN 2022-2023 ODD SEMESTER



COURSE INCHARGE : RANGANATH N

COURSE CODE/TITLE : INTEGRATED/BPLCK105B/INTRODUCTION TO PYTHON PROGRAMMING

YEAR/ SEMESTER/SECTION : I/I/H

BRANCH : CSE – INTERNET OF THINGS (IOT)

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: Python Basics						
1	Python Basics: Entering Expressions into the Interactive Shell,	L+D, PS	BB/PPT	1	1	12/12/2022
2	The Integer, Floating-Point, and String Data Types,	L+D, PS	BB/PPT	1	2	13/12/2022
3	String Concatenation and Replication, Storing Values in Variables	L+D, PS	BB/PPT	1	3	13/12/2022
4	Your First Program, Dissecting Your Program,	L+D, PS	BB/PPT	1	4	14/12/2022
5	Flow control: Boolean Values, Comparison Operators,	L+D, PS	BB/PPT	1	5	15/12/2022
6	Boolean Operators, Mixing Boolean and Comparison Operators	L+D, PS	BB/PPT	1	6	19/12/2022
7	Elements of Flow Control, Program Execution,	L+D, PS	BB/PPT	1	7	20/12/2022
8	Flow Control Statements, Importing Modules	L+D, PS	BB/PPT	1	8	21/12/2022
9	Ending a Program Early with sys.exit()	L+D, PS	BB/PPT	1	9	22/12/2022
10	Functions: def Statements with Parameters	L+D, PS	BB/PPT	1	10	24/12/2022



11	Return Values and return Statements	L+D, PS	BB/PPT	1	11	26/12/2022
12	The None Value, Keyword Arguments and print()	L+D, PS	BB/PPT	1	12	27/12/2022
13	Local and Global Scope,	L+D, PS	BB/PPT	1	13	28/12/2022
14	The global Statement	L+D, PS	BB/PPT	1	14	29/12/2022
15	Module 1: Laboratory Experiment a. Develop a program to read the student details like Name, USN, and Marks in three subjects. Display the student details, total marks and percentage with suitable messages b. Develop a program to read the name and year of birth of a person. Display whether the person is a senior citizen or not.	L+D, PS	LCD	Lab Session-2HR	2	22/12/2022 29/12/2022 5/1/2023
16	Exception Handling	L+D, PS	BB/PPT	1	15	31/12/2022
17	A Short Program: Guess the Number	L+D, PS	BB/PPT	1	16	2/1/2023
Module 2: Lists & Dictionaries and Structuring Data						
18	Module 2: Lists: The List Data Type, Working with Lists	L+D, PS	BB/PPT	1	17	3/1/2023
19	The List Data Type, Working with Lists	L+D, PS	BB/PPT	1	18	4/1/2023
20	The List Data Type, Working with Lists	L+D, PS	BB/PPT	1	19	5/1/2023
21	Augmented Assignment Operators, methods	L+D, PS	BB/PPT	1	20	9/1/2023
22	Example Program: Magic 8 Ball with a List	L+D, PS	BB/PPT	1	21	10/1/2023
23	List-like Types: Strings and Tuples, References	L+D, PS	BB/PPT	1	22	11/1/2023
24	Dictionaries and Structuring Data: The Dictionary Data Type	L+D, PS	BB/PPT	1	23	12/1/2023
25	Module 2: Laboratory Experiment a. Develop a program to generate Fibonacci sequence of length (N). Read N from the console. b. Write a function to calculate factorial of a number. Develop a program to compute binomial coefficient (Given N and R).	L+D, PS	LCD	Lab Session-2HR	2	12/1/2023

26	Pretty Printing	L+D, PS	BB/PPT	1	24	16/1/2023
27	Using Data Structures to Model Real-World Things	L+D, PS	BB/PPT	1	25	17/1/2023
28	INTERNAL ASSESSMENT - 1					
Module 3: Manipulating Strings & Reading and Writing Files						
29	Module 3: Manipulating Strings: Working with Strings	L+D, PS	BB/PPT	1	26	23/1/2023
30	Working with Strings, Useful String Methods	L+D, PS	BB/PPT	1	27	24/1/2023
31	Working with Strings, Useful String Methods	L+D, PS	BB/PPT	1	28	25/1/2023
32	Project: Password Locker,	L+D, PS	BB/PPT	1	29	28/1/2023
33	Project: Password Locker,	L+D, PS	BB/PPT	1	30	30/1/2023
34	Project: Adding Bullets to Wiki Markup	L+D, PS	BB/PPT	1	31	31/1/2023
35	Project: Adding Bullets to Wiki Markup	L+D, PS	BB/PPT	1	32	1/2/2023
36	Reading and Writing Files: Files and File Paths	L+D, PS	BB/PPT	1	33	2/2/2023
37	The os.path Module	L+D, PS	BB/PPT	1	34	6/2/2023
39	The File Reading/Writing Process	L+D, PS	BB/PPT	1	35	7/2/2023
40	Saving Variables with the shelve Module	L+D, PS	BB/PPT	1	36	8/2/2023
41	Module 3: Laboratory Experiment a. Read N numbers from the console and create a list. Develop a program to print mean, variance and standard deviation with suitable messages. b. Read a multi-digit number (as chars) from the console. Develop a program to print the frequency of each digit with suitable message.	L+D, PS	LCD	Lab Session- 2HR	4	9/2/2023 11/2/2023
42	Saving Variables with the print. Format () Function,	L+D, PS	BB/PPT	1	37	9/2/2023
43	Project: Generating Random Quiz Files	L+D, PS	BB/PPT	1	38	11/2/2023
44	Project: Multiclipboard	L+D, PS	BB/PPT	1	39	13/2/2023



Module 4: Organizing Files & Debugging

45	Module 4: Organizing Files: The shutil Module	L+D, PS	BB/PPT	1	40	14/2/2023
46	Walking a Directory Tree	L+D, PS	BB/PPT	1	41	15/2/2023
47	<p>Module 4: Laboratory Experiment</p> <p>a) Develop a program to print 10 most frequently appearing words in a text file. [Hint: Use dictionary with distinct words and their frequency of occurrences. Sort the dictionary in the reverse order of frequency and display dictionary slice of first 10 items]</p> <p>b) Develop a program to sort the contents of a text file and write the sorted contents into a separate text file. [Hint: Use string methods strip (), len (), list methods sort (), append (), and file methods open (), readlines (), and write ()].</p> <p>c) Develop a program to backing Up a given Folder (Folder in a current working directory) into a ZIP File by using relevant modules and suitable methods.</p> <p>d) Write a function named DivExp which takes TWO parameters a, b and returns a value c (c=a/b). Write suitable assertion for a>0 in function DivExp and raise an exception for when b=0. Develop a suitable program which reads two values from the console and calls a function DivExp.</p>	L+D, PS	LCD	Lab Session- 2HR	4	9/3/2023 16/3/2023
48	Compressing Files with the zipfile Module,	L+D, PS	BB/PPT	1	42	16/2/2023
49	INTERNAL ASSESSMENT 2					
50	Project: Renaming Files with American-Style Dates to European-Style Dates,	L+D, PS	BB/PPT	1	43	23/2/2023
51	Project: Renaming Files with American-Style Dates to European-Style Dates,	L+D, PS	BB/PPT	1	44	25/2/2023
52	Project: Backing Up a Folder into a ZIP File,	L+D, PS	BB/PPT	1	45	27/2/2023
53	Project: Backing Up a Folder into a ZIP File,	L+D, PS	BB/PPT	1	46	28/2/2023
54	Debugging: Raising Exceptions	L+D, PS	BB/PPT	1	47	1/3/2023
55	Getting the Traceback as a String	L+D, PS	BB/PPT	1	48	2/3/2023
56	Assertions, Logging, IDLEs Debugger	L+D, PS	BB/PPT	1	49	6/3/2023

Module 5: Classes and objects, Classes and functions and Classes and methods

57	Module 5: Classes and objects: Programmer-defined types	L+D, PS	BB/PPT	1	50	7/3/2023
58	Attributes, Rectangles	L+D, PS	BB/PPT	1	51	8/3/2023
59	Instances as return values, Objects are mutable, Copying	L+D, PS	BB/PPT	1	52	9/3/2023
60	Classes and functions: Time, Pure functions	L+D, PS	BB/PPT	1	53	11/3/2023
61	Modifiers, Prototyping versus planning	L+D, PS	BB/PPT	1	54	13/3/2023
62	Classes and methods: Object-oriented features	L+D, PS	BB/PPT	1	55	14/3/2023
63	Printing objects, Another example, A more complicated example	L+D, PS	BB/PPT	1	56	15/3/2023
64	The init method, The <code>__str__</code> method	L+D, PS	BB/PPT	1	57	16/3/2023
65	Operator overloading, Type-based dispatch	L+D, PS	BB/PPT	1	58	20/3/2023
66	Polymorphism, Interface and implementation	L+D, PS	BB/PPT	1	59	21/3/2023
67	Module 5: Laboratory Experiment a. Define a function which takes TWO objects representing complex numbers and returns new complex number with a addition of two complex numbers. Define a suitable class 'Complex' to represent the complex number. Develop a program to read N ($N \geq 2$) complex numbers and to compute the addition of N complex numbers. b. Develop a program that uses class Student which prompts the user to enter marks in three subjects and calculates total marks, percentage and displays the score card details. [Hint: Use list to store the marks in three subjects and total marks. Use <code>__init__()</code> method to initialize name, USN and the lists to store marks and total, Use <code>getMarks()</code> method to read marks into the list, and <code>display()</code> method to display the score card details.]	L+D, PS	LCD	Lab Session- 2HR	2	23/3/2023
68	INTERNAL ASSESSMENT - 3					28/3/2023
69	Revision	L+D, PS	BB/PPT	1	60	30/3/2023

Text Books:

1. Al Sweigart, "Automate the Boring Stuff with Python", 1st Edition, No Starch Press, 2015. (Available under CC-BY-NC-SA license at <https://automatetheboringstuff.com/>) (Chapters 1 to 18, except 12) for lambda functions use this link: <https://www.learnbyexample.org/python-lambda-function/>)
2. Allen B. Downey, "Think Python: How to Think Like a Computer Scientist", 2nd Edition, Green Tea Press, 2015. (Available under CC-BY-NC license at <http://greenteapress.com/thinkpython2/thinkpython2.pdf>) (Chapters 13, 15, 16, 17, 18) (Download pdf/html files from the above link)

Web links and Video Lectures (e-Resources):

1. <https://www.learnbyexample.org/python/>
2. <https://www.learnpython.org/>
3. <https://pythontutor.com/visualize.html#mode=edit>


Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

- Quizzes for list, tuple, string dictionary slicing operations using below link: https://github.com/sushantkharra/Data-Structures-And-Algorithms-with-Python/raw/main/Python%203%20_%20400%20exercises%20and%20solutions%20for%20beginners.pdf

Details of the teaching aids: Chalk and talk, videos, ppt, animations, NPTEL videos, NPTEL lectures etc.,


Course Incharge


HOD/ME


Principal

PRINCIPAL

Head of the Department, K.S. INSTITUTE OF TECHNOLOGY
Dept. of Mechanical Engg. BENGALURU - 560 109.
K.S. Institute of Technology
Bengaluru - 560 109.



K S INSTITUTE OF TECHNOLOGY, BANGALORE
DEPARTMENT OF APPLIED SCIENCES & HUMANITIES
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : Mr. RAJESH G.L

COURSE TYPE / CODE / TITLE : NON-INTEGRATED/ BETCK105E / Renewable Energy Sources

YEAR/ SEMESTER/SECTION : 1/1/E

BRANCH : ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1						
1	Introduction to Renewable Energy Sources	L+D,PS	LCD	1	1	12/12/2022
2	Principles of renewable energy; energy and sustainable development, fundamentals and social Implications.	L+D,PS	LCD	1	2	13/12/2022
3	Worldwide renewable energy availability, renewable energy availability in India.	L+D,PS	LCD	1	3	14/12/2022
4	brief descriptions on solar energy, wind energy	L+D,PS	LCD	1	4	16/12/2022
5	Tidal energy, wave energy	L+D,PS	LCD	1	5	19/12/2022
6	Ocean thermal energy, biomass energy	L+D,PS	LCD	1	6	20/12/2022
7	Geothermal energy, oil shale.	L+D,PS	LCD	1	7	21/12/2022
8	Introduction to Internet of energy (IOE).	L+D,PS	LCD	1	8	23/12/2022

Module 2						
9	Solar Energy: Fundamentals; Solar Radiation;	L+D,PS	LCD	1	9	24/12/2022
10	Estimation of solar radiation on horizontal and inclined surfaces	L+D,PS	LCD+BB	1	10	26/12/2022
11	Solar radiation Measurements- Pyrheliometer, Pyrometer	L+D,PS	LCD	1	11	27/12/2022
12	Sunshine Recorder. Solar Thermal systems: Flat plate collector	L+D,PS	LCD	1	12	28/12/2022
13	Solar distillation; Solar pond electric power plant.	L+D,PS	LCD	1	13	30/12/2022
14	Solar electric power generation- Principle of Solar cell	L+D,PS	LCD	1	14	31/12/2022
15	Photovoltaic system for electric power generation	L+D,PS	LCD	1	15	02/01/2023
16	Advantages, Disadvantages and applications of solar photovoltaic system.	L+D,PS	LCD	1	16	03/01/2023
Module 3						
17	Wind Energy: Properties of wind, availability of wind energy in India,	L+D,PS	LCD	1	17	04/01/2023
18	Wind velocity and power from wind	L+D,PS	LCD+BB	1	18	06/01/2023
19	Major problems associated with wind power, Basic components of wind energy conversion system (WECS);	L+D,PS	LCD	1	19	09/01/2023
20	Classification of WECS- Horizontal axis- single, double and multiblade system.	L+D,PS	LCD	1	20	10/01/2023
21	Vertical axis- Savonius and darrieus types.	L+D,PS	LCD	1	21	11/01/2023
22	Biomass Energy: Introduction; Photosynthesis Process; Biofuels; Biomass Resources;	L+D,PS	LCD	1	22	13/01/2023
23	Biomass conversion technologies-fixed dome;	L+D,PS	LCD	1	23	16/01/2023
24	Urban waste to energy conversion; Biomass gasification (Downdraft).	L+D,PS	LCD	1	24	17/01/2023

Module 4						
25	Tidal Power: Tides and waves as energy suppliers and their mechanics	L+D,PS	LCD	1	25	23/01/2023
26	Fundamental characteristics of tidal power	L+D,PS	LCD	1	26	24/01/2023
27	Harnessing tidal energy,	L+D,PS	LCD	1	27	25/01/2023
28	Advantages and limitations	L+D,PS	LCD	1	28	27/01/2023
29	Ocean Thermal Energy Conversion: Principle of working	L+D,PS	LCD	1	29	28/01/2023
30	Open cycle and closed cycle system.	L+D,PS	LCD	1	30	30/01/2023
31	OTEC power stations in the world	L+D,PS	LCD	1	31	31/02/2023
32	Problems associated with OTEC.	L+D,PS	LCD	1	32	01/02/2023
Module 5						
33	Green Energy: Introduction	L+D,PS	LCD	1	33	03/02/2023
34	Fuel cells	L+D,PS	LCD	1	34	06/02/2023
35	Classification of fuel cells	L+D,PS	LCD	1	35	07/02/2023
36	Zero energy Concepts. Benefits of hydrogen energy	L+D,PS	LCD	1	36	08/02/2023
37	Hydrogen production technologies (electrolysis method only),	L+D,PS	LCD	1	37	10/02/2023
38	Hydrogen energy storage	L+D,PS	LCD	1	38	13/02/2023
39	Applications of hydrogen energy,	L+D,PS	LCD	1	39	14/02/2023
40	Problem associated with hydrogen energy.	L+D,PS	LCD	1	40	15/02/2023
41	Problem associated with hydrogen energy.	L+D,PS	LCD	1	41	17/02/2023
42	Problem associated with hydrogen energy.	L+D,PS	LCD	1	42	24/02/2023
43	Problem associated with hydrogen energy.	L+D,PS	LCD	1	43	25/02/2023
44	Problems associated with OTEC.	L+D,PS	LCD	1	44	27/02/2023

45	Problems associated with OTEC.	L+D,PS	LCD	1	45	28/02/2023
46	Problems associated with OTEC.	L+D,PS	LCD	1	46	01/03/2023
47	Numerical on Solar radiation geometry	L+D,PS	LCD	1	47	03/03/2023
48	Numerical on Solar radiation geometry	L+D,PS	LCD	1	48	06/03/2023
49	Numerical on Solar radiation geometry	L+D,PS	LCD	1	49	07/03/2023
50	Numerical on Solar radiation geometry	L+D,PS	LCD	1	50	08/03/2023
51	Numerical on Solar radiation geometry	L+D,PS	LCD	1	51	10/03/2023
52	Revision: Wind velocity and power from wind	L+D,PS	LCD	1	52	11/03/2023
53	Revision: Wind velocity and power from wind	L+D,PS	LCD	1	53	13/03/2023
54	Revision: Biomass conversion technologies-fixed dome;	L+D,PS	LCD	1	54	14/03/2023
55	Revision: Biomass conversion technologies-fixed dome;	L+D,PS	LCD	1	55	15/03/2023
56	Revision: Urban waste to energy conversion; Biomass gasification (Downdraft).	L+D,PS	LCD	1	56	17/03/2023
57	Revision: Urban waste to energy conversion; Biomass gasification (Downdraft).	L+D,PS	LCD	1	57	20/03/2023
58	Revision: Urban waste to energy conversion; Biomass gasification (Downdraft).	L+D,PS	LCD	1	58	21/03/2023
59	Revision: Problems associated with OTEC.	L+D,PS	LCD	1	59	30/03/2023
60	Revision: Problems associated with OTEC.	L+D,PS	LCD	1	60	31/03/2023

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Web Materials:**Weblinks and Video Lectures (e-Resources):**

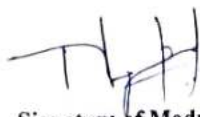
- ✓ E-book URL: <https://www.pdfdrive.com/non-conventional-energy-sources-e10086374.html>
- ✓ E-book URL: <https://www.pdfdrive.com/non-conventional-energy-systems-nptel-d17376903.html>
- ✓ E-book URL: <https://www.pdfdrive.com/renewable-energy-sources-and-their-applications-e33423592.html>
- ✓ E-book URL: <https://www.pdfdrive.com/lecture-notes-on-renewable-energy-sources-e34339149.html>
- ✓ https://onlinecourses.nptel.ac.in/noc18_ge09/preview

Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

- ✓ Poster presentation on the theme of renewable energy sources
- ✓ Industry Visit

Details of the teaching aids:

1. BLACK BOARD USAGE
2. Photographs
3. PPT
4. Videos

**Signature of Course In-Charge****Signature of Module Coordinator****Signature of HOD**

Head of the Department
Dept. of Mechanical Engg.
K.S. Institute of Technology
Bengaluru - 560 109.

**Signature of Principal**
PRINCIPAL

K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109.



K.S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF APPLIED SCIENCE AND HUMANITIES
LESSON PLAN 2022-2023ODD SEMESTER

COURSE INCHARGE : Dr.Girish TR

COURSE CODE/TITLE : INTEGRATED/BPLCK105B/INTRODUCTION TO PYTHON PROGRAMMING

YEAR/SEMESTER/SECTION : I/I/G

BRANCH :ECE

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: Python Basics						
1	Python Basics: Entering Expressions into the Interactive Shell,	L+D,PS	BB/PPT	1	1	12/12/2022
2	The Integer, Floating-Point, and String Data Types,	L+D,PS	BB/PPT	1	2	13/12/2022
3	String Concatenation and Replication, Storing Values in Variables	L+D,PS	BB/PPT	1	3	13/12/2022
4	Your First Program, Dissecting Your Program,	L+D,PS	BB/PPT	1	4	14/12/2022
5	Flow control: Boolean Values, Comparison Operators,	L+D,PS	BB/PPT	1	5	15/12/2022
6	Boolean Operators, Mixing Boolean and Comparison Operators	L+D,PS	BB/PPT	1	6	19/12/2022
7	Elements of Flow Control,Program Execution,	L+D,PS	BB/PPT	1	7	20/12/2022
8	Flow Control Statements, Importing Modules	L+D, PS	BB/PPT	1	8	21/12/2022
9	Ending a Program Early with sys.exit()	L+D, PS	BB/PPT	1	9	22/12/2022
10	Functions: def Statements with Parameters	L+D, PS	BB/PPT	1	10	24/12/2022

11	Return Values and return Statements	L+D, PS	BB/PPT	1	11	26/12/2022
12	The None Value, Keyword Arguments and print(),	L+D, PS	BB/PPT	1	12	27/12/2022
13	Local and Global Scope,	L+D, PS	BB/PPT	1	13	28/12/2022
14	The global Statement	L+D, PS	BB/PPT	1	14	29/12/2022
15	Module 1: Laboratory Experiment a. Develop a program to read the student details like Name, USN, and Marks in three subjects. Display the student details, total marks and percentage with suitable messages b. Develop a program to read the name and year of birth of a person. Display whether the person is a senior citizen or not.	L+D, PS	LCD	LabSession-2HR	2	22/12/2022 29/12/2022 5/1/2023
16	Exception Handling	L+D, PS	BB/PPT	1	15	31/12/2022
17	A Short Program: Guess the Number	L+D, PS	BB/PPT	1	16	2/1/2023
Module 2: Lists & Dictionaries and Structuring Data						
18	Module 2:Lists: The List Data Type, Working with Lists	L+D, PS	BB/PPT	1	17	3/1/2023
19	The List Data Type, Working with Lists	L+D, PS	BB/PPT	1	18	4/1/2023
20	The List Data Type, Working with Lists	L+D, PS	BB/PPT	1	19	5/1/2023
21	Augmented Assignment Operators, methods	L+D, PS	BB/PPT	1	20	9/1/2023
22	Example Program: Magic 8 Ball with a List	L+D, PS	BB/PPT	1	21	10/1/2023
23	List-like Types: Strings and Tuples, References	L+D, PS	BB/PPT	1	22	11/1/2023
24	Dictionaries and Structuring Data: The Dictionary Data Type	L+D, PS	BB/PPT	1	23	12/1/2023
25	Module 2: Laboratory Experiment a. Develop a program to generate Fibonacci sequence of length (N). Read N from the console. b. Write a function to calculate factorial of a number. Develop a program to compute binomial coefficient (Given N and R).	L+D, PS	LCD	LabSession-2HR	2	12/1/2023

26	Pretty Printing	L+D, PS	BB/PPT	1	24	16/1/2023
27	Using Data Structures to Model Real-World Things	L+D, PS	BB/PPT	1	25	17/1/2023
28	INTERNAL ASSESSMENT – 1					19/1/2023
Module 3: Manipulating Strings & Reading and Writing Files						
29	Module 3: Manipulating Strings: Working with Strings	L+D, PS	BB/PPT	1	26	23/1/2023
30	Working with Strings, Useful String Methods	L+D, PS	BB/PPT	1	27	24/1/2023
31	Working with Strings, Useful String Methods	L+D, PS	BB/PPT	1	28	25/1/2023
32	Project: Password Locker,	L+D, PS	BB/PPT	1	29	28/1/2023
33	Project: Password Locker,	L+D, PS	BB/PPT	1	30	30/1/2023
34	Project: Adding Bullets to Wiki Markup	L+D, PS	BB/PPT	1	31	31/1/2023
35	Project: Adding Bullets to Wiki Markup	L+D, PS	BB/PPT	1	32	1/2/2023
36	Reading and Writing Files: Files and File Paths	L+D, PS	BB/PPT	1	33	2/2/2023
37	The os.path Module	L+D, PS	BB/PPT	1	34	6/2/2023
39	The File Reading/Writing Process	L+D, PS	BB/PPT	1	35	7/2/2023
40	Saving Variables with the shelve Module	L+D, PS	BB/PPT	1	36	8/2/2023
41	Module 3: Laboratory Experiment a. Read N numbers from the console and create a list. Develop a program to print mean, variance and standard deviation with suitable messages. b. Read a multi-digit number (as chars) from the console. Develop a program to print the frequency of each digit with suitable message.	L+D, PS	LCD	LabSession-2HR	4	9/2/2023 11/2/2023
42	Saving Variables with the print. Format () Function,	L+D, PS	BB/PPT	1	37	9/2/2023
43	Project: Generating Random Quiz Files	L+D, PS	BB/PPT	1	38	11/2/2023
44	Project: Multiclipboard	L+D, PS	BB/PPT	1	39	13/2/2023

Module 4: Organizing Files & Debugging						
45	Module 4: Organizing Files: The shutil Module	L+D, PS	BB/PPT	1	40	14/2/2023
46	Walking a Directory Tree	L+D, PS	BB/PPT	1	41	15/2/2023
47	<p>Module 4: Laboratory Experiment</p> <p>a) Develop a program to print 10 most frequently appearing words in a text file. [Hint: Use dictionary with distinct words and their frequency of occurrences. Sort the dictionary in the reverse order of frequency and display dictionary slice of first 10 items]</p> <p>b) Develop a program to sort the contents of a text file and write the sorted contents into a separate text file. [Hint: Use string methods strip (), len (), list methods sort (), append (), and file methods open (),readlines (), and write ()].</p> <p>c) Develop a program to backing Up a given Folder (Folder in a current working directory) into a ZIP File by using relevant modules and suitable methods.</p> <p>d) Write a function named DivExp which takes TWO parameters a, b and returns a value c (c=a/b). Write suitable assertion for a>0 in function DivExp and raise an exception for when b=0. Develop a suitable program which reads two values from the console and calls a function DivExp.</p>	L+D, PS	LCD	LabSession-2HR	4	9/3/2023 16/3/2023
48	Compressing Files with the zipfile Module,	L+D, PS	BB/PPT	1	42	16/2/2023
49	INTERNAL ASSESSMENT 2					21/2/2023
50	Project: Renaming Files with American-Style Dates to European-Style Dates,	L+D, PS	BB/PPT	1	43	23/2/2023
51	Project: Renaming Files with American-Style Dates to European-Style Dates,	L+D, PS	BB/PPT	1	44	25/2/2023
52	Project: Backing Up a Folder into a ZIP File,	L+D, PS	BB/PPT	1	45	27/2/2023
53	Project: Backing Up a Folder into a ZIP File,	L+D, PS	BB/PPT	1	46	28/2/2023
54	Debugging: Raising Exceptions	L+D, PS	BB/PPT	1	47	1/3/2023
55	Getting the Traceback as a String	L+D, PS	BB/PPT	1	48	2/3/2023
56	Assertions, Logging, IDLEs Debugger	L+D, PS	BB/PPT	1	49	6/3/2023
Module 5: Classes and objects, Classes and functions and Classes and methods						

57	Module 5: Classes and objects: Programmer-defined types	L+D, PS	BB/PPT	1	50	7/3/2023
58	Attributes, Rectangles	L+D, PS	BB/PPT	1	51	8/3/2023
59	Instances as return values, Objects are mutable, Copying	L+D, PS	BB/PPT	1	52	9/3/2023
60	Classes and functions: Time, Pure functions	L+D, PS	BB/PPT	1	53	11/3/2023
61	Modifiers, Prototyping versus planning	L+D, PS	BB/PPT	1	54	13/3/2023
62	Classes and methods: Object-oriented features	L+D, PS	BB/PPT	1	55	14/3/2023
63	Printing objects, Another example, A more complicated example	L+D, PS	BB/PPT	1	56	15/3/2023
64	The init method, The <code>__str__</code> method	L+D, PS	BB/PPT	1	57	16/3/2023
65	Operator overloading, Type-based dispatch	L+D, PS	BB/PPT	1	58	20/3/2023
66	Polymorphism, Interface and implementation	L+D, PS	BB/PPT	1	59	21/3/2023
67	Module 5: Laboratory Experiment a. Define a function which takes TWO objects representing complex numbers and returns new complex number with a addition of two complex numbers. Define a suitable class 'Complex' to represent the complex number. Develop a program to read N ($N \geq 2$) complex numbers and to compute the addition of N complex numbers. b. Develop a program that uses class Student which prompts the user to enter marks in three subjects and calculates total marks, percentage and displays the score card details. [Hint: Use list to store the marks in three subjects and total marks. Use <code>__init__()</code> method to initialize name, USN and the lists to store marks and total, Use <code>getMarks()</code> method to read marks into the list, and <code>display()</code> method to display the score card details.]	L+D, PS	LCD	LabSession-2HR	2	23/3/2023
68	INTERNAL ASSESSMENT - 3					28/3/2023
69	Revision	L+D, PS	BB/PPT	1	60	30/3/2023

Text Books:

1. Al Sweigart, "Automate the Boring Stuff with Python", 1st Edition, No Starch Press, 2015. (Available under CC-BY-NC-SA license at <https://automatetheboringstuff.com/>) (Chapters 1 to 18, except 12) for lambda functions use this link: <https://www.learnbyexample.org/python-lambda-function/>
2. Allen B. Downey, "Think Python: How to Think Like a Computer Scientist", 2nd Edition, Green Tea Press, 2015. (Available under CC-BY-NC license at <http://greenteapress.com/thinkpython2/thinkpython2.pdf> (Chapters 13, 15, 16, 17, 18) (Download pdf/html files from the above link)

Web links and Video Lectures (e-Resources):

1. <https://www.learnbyexample.org/python/>
2. <https://www.learnpython.org/>
3. <https://pythontutor.com/visualize.html#mode=edit>

Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

- Quizzes for list, tuple, string dictionary slicing operations using below link:
https://github.com/sushantkhara/Data-Structures-And-Algorithms-withPython/raw/main/Python%203%20_%20400%20exercises%20and%20solutions%20for%20beginners.pdf

Details of the teaching aids: Chalk and talk, videos, ppt, animations, NPTEL videos, NPTEL lectures etc.,


Course Incharge


Module coordinator


HOD


Principal
PRINCIPAL
K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109.



KS INSTITUTE OF TECHNOLOGY BANGALORE
DEPARTMENT OF MECHANICAL ENGINEERING

NAME OF THE STAFF : Mr.Anilkumar A

SUBJECT CODE/NAME : BPLCK105B / INTRODUCTION TO PYTHON PROGRAMMING

SEMESTER/YEAR : I- 'I Sec'/ I

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1:Python Basics						
1	Python Basics: Entering Expressions into the Interactive Shell, The Integer, Floating-Point.	L+D	LCD	2	2	12/12/2022 14/12/2022
2	String Data Types, String Concatenation and Replication, Storing Values in Variables, Your First Program, Dissecting Your Program,	L+ D	LCD+BB	2	4	15/12/2022 16/12/2022
3	Flow control: Boolean Values, Comparison Operators, Boolean Operators, Mixing Boolean and Comparison Operators	L+ D	LCD+BB	2	6	19/12/2022 21/12/2022
4	Elements of Flow Control, Program Execution, Flow Control Statements, Importing Modules, Ending a Program Early with sys. exit()	L+D	LCD+BB	2	8	22/12/2022 23/12/2022
5	Functions: def Statements with Parameters, Return Values and return Statements	L+D	LCD+BB	2	10	24/12/2022 26/12/2022
6	The None Value, Keyword Arguments and print()	L+D, PS	LCD	1	11	28/12/2022
7	Local and Global Scope, The global Statement, Exception Handling	L+I	LCD+BB	2	13	29/12/2022 30/12/2022
8	A Short Program: Guess the Number	L+D, PS	BB	1	14	31/12/2022

10	Module 1 Lab Programs 1. a. Develop a program to read the student details like Name, USN, and Marks in three subjects. Display the student details, total marks and percentage with suitable messages. b. Develop a program to read the name and year of birth of a person. Display whether the person is a senior citizen or not.	L+D, PS	LCD	Lab Session-3HR	1	11:30/12/2022 12:28/12/2022 13:27/12/2022
11	2. a. Develop a program to generate Fibonacci sequence of length (N). Read N from the console. b. Write a function to calculate factorial of a number. Develop a program to compute binomial coefficient (Given N and R).	L+D, PS	LCD	Lab Session-3HR	2	11:06/01/2023 12:04/01/2023 13:03/01/2023
MODULE 2: Lists, Dictionaries & Structuring Data						
12	Lists: The List Data Type, Working with Lists	L+D	LCD+BB	3	17	2/1/2023 4/1/2023 5/1/2023
13	Augmented Assignment Operators, Methods.	L+D	LCD+BB	2	19	6/1/2023 9/1/2023
14	Example Program: Magic 8 Ball with a List, List-like Types: Strings and Tuples, References.	L+ D	BB	2	21	11/1/2023 12/1/2023
	Dictionaries and Structuring Data: The Dictionary Data Type	L+D	BB	2	23	13/1/2023 16/1/2023
IA-1(19/01/2023)						
15	Dictionary Methods	L+D, PS	LCD+BB	1	25	23/1/2023
17	Pretty Printing	PS	LCD+BB	1	26	25/1/2023
18	Using Data Structures to Model Real-World Things	L+I	LCD+BB	3	29	27/1/2023 28/1/2023 30/1/2023

	Module 2 Lab Programs					
22	Read N numbers from the console and create a list. Develop a program to print mean, variance and standard deviation with suitable messages.	L+D, PS	LCD+BB	Lab Session-3HR	3	11:13/01/2023 12:11/01/2023 13:10/01/2023
23	Read a multi-digit number (as chars) from the console. Develop a program to print the frequency of each digit with suitable message.	L+D, PS	LCD+BB	Lab Session-3HR	4	11:27/01/2023 12:25/01/2023 13:24/01/2023
MODULE 3: Manipulating Strings, Reading & Writing Files						
24	Manipulating Strings: Working with Strings	L+D, L+I	BB	1	30	1/2/2023
25	Useful String Methods	L+I	BB	3	33	2/2/2023 3/2/2023 6/2/2023
26	Project: Password Locker	L+D	BB	1	34	8/2/2023
27	Project: Adding Bullets to Wiki Markup	L+D	BB	1	35	9/2/2023
28	Reading and Writing Files: Files and File Paths, The os.path Module	L+D	BB	1	36	10/2/2023
29	The File Reading/Writing Process.	L+D	BB	1	37	11/2/2023
30	Saving Variables with the shelve Module, Saving Variables with the print.format() Function	L+D	BB	2	39	13/2/2023 15/2/2023
31	Project: Generating Random Quiz Files, Project: Multiclipboard.	L+I	BB	1	40	16/2/2023
32	Module 3 Lab Programs Develop a program to print 10 most frequently appearing words in a text file. [Hint: Use dictionary with distinct words and their frequency of occurrences. Sort the dictionary in the reverse order of frequency and display dictionary slice of first 10 items]	L+D	LCD+BB	Lab Session-3HR	5	11:03/02/2023 12:01/02/2023

						13:31/01/2023
33	Develop a program to sort the contents of a text file and write the sorted contents into a separate text file. [Hint: Use string methods strip(), len(), list methods sort(), append(), and file methods open(), readlines(), and write()].	L+D	LCD+BB	Lab Session-3HR	6	11:10/02/2023 12:08/02/2023 13:07/02/2023
MODULE 4: Organizing Files, Debugging						
34	Organizing Files: The shutil Module, Walking a Directory Tree	L+D	BB	1	41	17/2/2023
IA-II (21/02/2023)						
35	Compressing Files with the zipfile Module	L+I	BB	1	43	23/1/2023
36	Project: Renaming Files with American-Style Dates to European-Style Dates, ,Project: Backing Up a Folder into a ZIP File	L+D, PS	LCD+BB	2	45	24/2/2023 25/2/2023
37	Debugging: Raising Exceptions, Getting the Trace back as a String	L+D	LCD+BB	1	46	27/2/2023
38	Assertions	L+D	LCD+BB	1	47	01/3/2023
39	Logging, IDLE's Debugger	L+D	LCD+BB	1	48	2/3/2023
41	Module 4 Lab Programs Develop a program to backing Up a given Folder (Folder in a current working directory) into a ZIP File by using relevant modules and suitable methods.	L+D	LCD+BB	Lab Session-3HR	7	11:17/02/2023 12:15/02/2023 13:14/02/2023
42	Write a function named DivExp which takes TWO parameters a, b and returns a value c ($c=a/b$). Write suitable assertion for $a>0$ in function DivExp and raise an exception for when $b=0$. Develop a suitable program which reads two values from the console and calls a function DivExp.	L+D	LCD+BB	Lab Session-3HR	8	11:3/3/2023 12:1/3/2023 13:28/2/2023 3

MODULE 5: Graphs						
43	Classes and objects: Programmer-defined types	L+D	LCD+BB	1	49	3/3/2023
44	Attributes, Rectangles, Instances as return values, Objects are mutable, Copying	L+D	LCD+BB	2	51	6/3/2023 8/3/2023
45	Classes and functions: Time, Pure functions, Modifiers	L+D	LCD+BB	1	52	9/3/2023
46	Prototyping versus planning	L+D	LCD+BB	1	53	10/3/2023
47	Classes and methods: Object-oriented features, Printing objects	L+D	BB	1	54	13/3/2023
48	Theinit method, The __str__ method,	L+D, PS	BB	1	55	15/3/2023
49	Operator overloading, Type-based dispatch	L+D	LCD+BB	1	56	16/3/2023
50	Polymorphism, Interface and implementation	L+D	LCD+BB	1	57	17/3/2023
51	Programs on Classes and Objects	L+D	LCD+BB	3	60	20/3/2023 23/3/2023 24/3/2023
IA-III (2/2/2023)						
51	Module 5 Lab Programs Define a function which takes TWO objects representing complex numbers and returns new complex number with a addition of two complex numbers. Define a suitable class 'Complex' to represent the complex number. Develop a program to read N (N >=2) complex numbers and to compute the addition of N complex numbers.	L+D	LCD+BB	Lab Session-3HR	9	11:10/3/2023 12:08/3/2023 13:07/3/2023
52	Develop a program that uses class Student which prompts the user to enter marks in three subjects and calculates total marks, percentage and displays the score card details. [Hint: Use list to store the marks in three subjects and total marks. Use __init__() method to initialize name, USN and the lists to store marks and total, Use getMarks() method to read marks into the list, and display() method to display the score card details.]	L+D	LCD+BB	Lab Session-3HR	10	11:17/3/2023 12:15/3/2023 13:14/3/2023

Text Books:

1. Al Sweigart, "Automate the Boring Stuff with Python", 1 st Edition, No Starch Press, 2015.



K S INSTITUTE OF TECHNOLOGY, BANGALORE
DEPARTMENT OF APPLIED SCIENCES & HUMANITIES
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : **MANJUNATHA.B.R**
COURSE TYPE / CODE / TITLE : **Computer Aided Engineering Drawing/BCEDK103**
YEAR/ SEMESTER/SECTION : **I / I / F**
BRANCH : **Electronics & Communication Engineering**

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
1	Introduction: for CIE only Significance of Engineering drawing, BIS Conventions of Engineering Drawing, Free hand sketching of engineering drawing, Scales.	L	BB+LCD	1	1	14/12/23
2	Introduction to Computer Aided Drafting software, Co-ordinate system and reference planes HP, VP, RPP & LPP of 2D/3D environment.	L	BB+LCD	1	2	14/12/23
3	Selection of drawing sheet size and scale. Commands and creation of Lines, coordinate points, axes, polylines, square, rectangle, polygons, splines, circles, ellipse, text, move, copy, off-set, mirror, rotate, trim, extend, break, chamfer, fillet and curves.	L	BB+LCD	1	3	16/12/23
4	Introduction to Orthographic projections	L	BB+LCD	1	4	16/12/23
5	Orthographic projections of points in all the quadrants	L	BB+LCD	1	5	21/12/23

6	projections of points	L	BB+LCD	1	6	21/12/23
7	projections of points	L	BB+LCD	1	7	23/12/23
8	projections of points	L	BB+LCD	1	8	23/12/23
9	Orthographic projections of lines	L	BB+LCD	1	9	24/12/23
10	projections of lines	L	BB+LCD	1	10	24/12/23
11	projections of lines	L	BB+LCD	1	11	28/12/23
12	projections of lines	L	BB+LCD	1	12	28/12/23
13	Orthographic projections of planes	L	BB+LCD	1	13	30/12/23
14	projections of planes	L	BB+LCD	1	14	30/12/23
15	projections of planes	L	BB+LCD	1	15	04/1/23
16	projections of planes	L	BB+LCD	1	16	04/1/23
17	projections of planes	L	BB+LCD	1	17	06/1/23
18	projections of planes	L	BB+LCD	1	18	06/1/23
19	Orthographic Projection of Solids	L	BB+LCD	1	19	11/1/23
20	Projection of Solids	L	BB+LCD	1	20	11/1/23
21	Projection of Solids	L	BB+LCD	1	21	13/1/23
22	Projection of Solids	L	BB+LCD	1	22	13/1/23
23	Projection of Solids	L	BB+LCD	1	23	25/1/23
24	Projection of Solids	L	BB+LCD	1	24	25/1/23
25	Projection of Solids	L	BB+LCD	1	25	27/1/23
26	Projection of Solids	L	BB+LCD	1	26	27/1/23
27	Projection of Solids	L	BB+LCD	1	27	28/1/23
28	Projection of Solids	L	BB+LCD	1	28	28/1/23
29	Projection of Solids	L	BB+LCD	1	29	01/02/23

30	Isometric Projections	L	BB+LCD	1	30	01/02/23
31	Isometric Projections	L	BB+LCD	1	31	03/02/23
32	Isometric Projections	L	BB+LCD	1	32	03/02/23
33	Isometric Projections	L	BB+LCD	1	33	08/02/23
34	Isometric Projections	L	BB+LCD	1	34	08/02/23
35	Isometric Projections	L	BB+LCD	1	35	10/02/23
36	Isometric Projections	L	BB+LCD	1	36	10/02/23
37	Isometric Projections	L	BB+LCD	1	37	15/02/23
38	Isometric Projections	L	BB+LCD	1	38	15/02/23
39	Isometric Projections	L	BB+LCD	1	39	17/02/23
40	Isometric Projections	L	BB+LCD	1	40	17/02/23
41	Isometric Projections	L	BB+LCD	1	41	24/02/23
42	Isometric Projections	L	BB+LCD	1	42	24/02/23
43	Isometric Projections	L	BB+LCD	1	43	25/02/23
44	Isometric Projections	L	BB+LCD	1	44	25/02/23
45	Development of Lateral Surfaces of Solids	L	BB+LCD	1	45	01/03/23
46	Development of Lateral Surfaces of Solids	L	BB+LCD	1	46	01/03/23
47	Development of Lateral Surfaces of Solids	L	BB+LCD	1	47	03/03/23
48	Development of Lateral Surfaces of Solids	L	BB+LCD	1	48	03/03/23
49	Development of Lateral Surfaces of Solids	L	BB+LCD	1	49	08/03/23
50	Development of Lateral Surfaces of Solids	L	BB+LCD	1	50	08/03/23
51	Development of Lateral Surfaces of Solids	L	BB+LCD	1	51	10/03/23
52	Development of Lateral Surfaces of Solids	L	BB+LCD	1	52	10/3/23

53	Development of Lateral Surfaces of Solids	L	BB+LCD	1	53	15/3/23
54	Development of Lateral Surfaces of Solids	L	BB+LCD	1	54	15/3/23
55	Development of Lateral Surfaces of Solids	L	BB+LCD	1	55	17/3/23
56	Development of Lateral Surfaces of Solids	L	BB+LCD	1	56	17/3/23
57	Multidisciplinary Applications & Practice	L	BB+LCD	1	57	21/3/23
58	Multidisciplinary Applications & Practice	L	BB+LCD	1	58	21/3/23
59	Multidisciplinary Applications & Practice	L	BB+LCD	1	59	24/3/23
60	Multidisciplinary Applications & Practice	L	BB+LCD	1	60	24/3/23

Text Books:

- Bhatt, N.D., Engineering Drawing: Plane and Solid Geometry, 53rd edition, Charotar Publishing House Pvt. • Limited, 2019.
- K. R. Gopalakrishna, • & Sudhir Gopalakrishna: Textbook Of Computer Aided Engineering Drawing, 39th Edition, Subash Stores, Bangalore, 2017
- S. N. Lal: Engineering Drawing with an Introduction to AutoCAD : First-angle Projection 1 • st Edition, Cengage, Publication, 2018
- S.N. Lal, • & T Madhusudhan:, Engineering Visulisation, 1st Edition, Cengage, Publication

Luzadder Warren J., Duff John M., Fundamentals of Engineering Drawing: with an Introduction to Interactive • Computer Graphics for Design and Production, Prentice-Hall of India Pvt. Ltd., New Delhi, Eastern Economy Edition, 2005

Reference Books:

- Parthasarathy N. S., Vela Murali, Engineering Drawing, Oxford University Press, 2015.
- Dhawan R. K., A Textbook of Engineering Drawing, 3/e, S. Chand Publishing, 2019.
- Venugopal K., Engineering Drawing and Graphics, New Age International publishers, 2014.
- Bhattacharya S. K., Electrical Engineering Drawing, New Age International publishers, second edition 1998, • reprint 2005.
- Chris Schroder, Printed Circuit Board Design using AutoCAD, Newnes, 1997.
- K S Sai Ram Design of steel structures, , Third Edition by Pearson
- Nainan p kurian Design of foundation systems, Narosa publications
- A S Pabla, Electrical power distribution, 6th edition, Tata Mcgraw hill

Useful websites:

<https://engineeringinsider.org/first-angle-third-angle-projection/>

<https://nptel.ac.in/courses/112103019/19>

<https://simgraph.wordpress.com/projection-of-planess/>
<https://ktuengineeringgraphics.wordpress.com/projections-of-solids/>

Details of the teaching aids:

1. BLACK BOARD USAGE
2. LCD



Course In-Charge



Module Coordinator



HOD
Head of the Department
Dept. of Mechanical Engg.
K.S. Institute of Technology
Bengaluru - 560 109.



Principal
PRINCIPAL
K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109.



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF APPLIED SCIENCES & HUMANITIES
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : TEJASWINI ML
COURSE TYPE / CODE / TITLE : Theory/ BESCK104A /Introduction to civil engineering
YEAR/ SEMESTER/SECTION : 2023/J
BRANCH : MECHANICAL ENGINEERING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1:						
1	Module – 1 Introduction to civil engineering	L+PPT	BB	1	1	12.12.2022
2	Scope of different fields of Civil Engineering	L+PPT	PPT	2	3	13.12.2023
3	Surveying, BuildingMaterials, Construction Technology,	L+PPT	PPT	2	5	15.12.2023
4	Geotechnical Engineering,Structural Engineering,	L+PPT	PPT	1	6	16.12.2023
5	Hydraulics, WaterResources and Irrigation Engineering, Transportation Engineering,	L+PPT	PPT	1	7	19.12.2023
6	Environmental Engineering, Earthquake Engineering, GIS.	L+PPT	PPT	1	8	20.12.2023
7	Introduction to Basic components of the structure.- Plinth,	L+PPT	PPT	1	9	22.12.2023

	Foundation, Lintel					
8	Basic components of the structure.- Beam and its classifications	L+PPT	PPT	1	10	23.12.2023
9	Seminar Presentation	L+PPT	PPT	1	11	24.12.2023
10	Seminar Presentation	L+PPT	PPT	1	12	26.12.2023
11	Basic components of the structure.- Staircase and its classifications.	L+PPT	PPT	1	13	27.12.2023
12	Basic components of the structure.- Column, slab	L+D	BB	1	14	29.12.2023
13	Basic components of the structure.- Staircase and its classifications.	L+D	BB	1	15	30.12.2023
14	Basic components of the structure.- Column, slab	L+PPT	PPT	1	16	31.12.2023
15	Basic components of the structure.- Masonry walls	L+PPT	PPT	1	17	2.1.2023
16	Module 2 – Societal and Global Impact of Infrastructure	L+D	BB	1	18	3.1.2023
17	Introduction to sustainable development goals	L+D	BB	1	19	5.1.2023
18	Smart city concept, Clean city concept and Safe city concept	L+D	BB	1	20	6.1.2023
19	Seminar Presentation	L+D	BB	1	21	9.1.2023
20	Environment- Water Supply and Sanitary systems	L+D	BB	1	22	10.1.2023
21	Urban air pollution management, Temperature and Sound control in buildings	L+D	BB	1	23	12.1.2023
22	Solid Waste management, Identification of Landfills sites, Urban flood control	L+D	BB	1	24	13.1.2023
23	Built environment: Energy efficient building, Smart buildings	L+D	BB	1	25	16.1.2023
24	Seminar Presentation	L+D	BB	1	26	17.1.2023
25	Module 3- Analysis of Force System Basic idealizations - Particle, Continuum and Rigid body; Newton'sLaws, Force and its characteristics,	L+D	BB	1	27	17.1.2023

26	Types of forces-Gravity, Lateral and its distribution on surfaces, Classification of force systems, Principle of, superposition, transmissibility of forces					18.1.23-20.1.23
27	Composition of forces - Definition of Resultant; Composition of coplanar - concurrent force system	L+D	BB	1	28	23.1.2023
28	Introduction to SI units. Couple, Moment of a couple, Characteristics of couple, Moment of a force, Parallelogram Law of forces, Principle of resolved parts;	L+D	BB	1	29	24.1.2023
29	Equivalent force - Couple system; Numerical problems on Moment of forces and couples, on equivalent force - couple system.	L+D	BB	1	30	25.1.2023
30	1 st Internal Assessment	L+D	BB	1	31	25.1.2023
31	Seminar Presentation	L+D	BB	1	32	27.1.2023
31	Composition of coplanar - non-concurrent force system, Varignon's principle of moments;	L+D	BB	1	33	28.1.2023
32	Numerical problems on composition of coplanar Non-concurrent Force system.	L+D	BB	1	34	30.1.2023
33	Numerical problems on composition of coplanar Non-concurrent Force system.	L+D	BB	1	35	31.1.2023
34	Equilibrium and conditions of equilibrium	L+D	BB	1	36	2.02.2023
35	Numericals on Equilibrium of forces, Free Body Diagram	L+D	BB	1	37	3.2.2023
36	Seminar Presentation	L+D	BB	1	38	6.2.2023
37	Numerical problems on composition of coplanar Non-concurrent Force system.	L+D	BB	1	39	7.2.2023
38	Numerical problems on composition of coplanar Non-concurrent Force system.	L+D	BB	1	40	8.2.2023
39	Numerical problems on composition of coplanar Non-concurrent Force system.	L+D	BB	1	41	9.2.2023
40	Numerical problems on composition of coplanar Non-	L+D	BB	1	42	10.2.2023

	concurrent Force system.					
41	Module 4- Centroid- Introduction to centroid	L+D	BB	1	43	11.2.2023
42	centroid of line and area, centroid of basic geometrical figures. Centroid of Rectangle, Triangle	L+D	BB	1	44	13.2.2023
43	Seminar Presentation	L+D	BB	1	45	14.2.2023
44	Centroid of Circle, Semi circle, Right angled triangle, Quarter of a triangle.	L+D	BB	1	46	15.2.2023
45	Numericals on Computing centroid for various sections .	L+D	BB	1	47	16.2.2023
46	Numericals on Computing centroid for various sections .	L+D	BB	1	48	17.2.2023
47	Numericals on Computing centroid for various sections .	L+D	BB	1	49	20.2.2023
48	Numericals on Computing centroid for shaded sections .	L+D	BB	1	50	21.2.2023
49	Seminar Presentation	L+D	BB	1	51	23.2.2023
50	Seminar Presentation	L+D	BB	1	52	24.2.2023
51	Numericals on Computing centroid for various sections .	L+D	BB	1	53	25.2.2023
52	Numericals on Computing centroid for shaded sections .	L+D	BB	1	54	27.2.2023
53	Numericals on Computing centroid for various sections .	L+D	BB	1	55	28.2.2023
54	2 nd Internal Assessment	L+D	BB	1	56	01.3.23-03.3.23
55	Module 5- Moment of Inertia Introduction to the concept, Radius of gyration, Parallel axis theorem, Perpendicular axis theorem,	L+D	BB	1	57	6.3.2023
56	Moment of Inertia of basic planar figures, computing moment of Inertia for – T, L, I, Z and full/quadrant circular sections and their built up sections. Numerical problems	L+D	BB	1	58	7.3.2023

57	Numericals on Computing centroid for various sections .	L+D	BB	1	59	9.3.2023
58	Numericals on Computing centroid for various sections .	L+D	BB	1	60	10.3.2023
59	Numericals on Computing centroid for various sections .	L+D	BB	1	61	11.3.2023
60	Seminar Presentation	L+D	BB	1	62	13.3.2023
61	Numericals on Computing centroid for shaded sections .	L+D	BB	1	63	14.3.2023
62	Numericals on Computing centroid for various sections .	L+D	BB	1	64	16.3.2023
63	Numericals on Computing centroid for various sections .	L+D	BB	1	65	17.3.2023
64	Numericals on Computing centroid for various sections .	L+D	BB	1	66	20.3.2023
65	Numericals on Computing centroid for shaded sections .	L+D	BB	1	67	21.3.2023
66	Numericals on Computing centroid for various sections .	L+D	BB	1	68	23.3.2023
67	Numericals on Computing centroid for shaded sections .	L+D	BB	1	69	24.3.2023
68	3 rd Internal Assessment				70	27.3.2023- 29.3.2023

Text Books:

1. Bansal R. K., Rakesh Ranjan Beohar and Ahmad Ali Khan, Basic Civil Engineering and Engineering Mechanics, 2015, Laxmi Publications.
2. Kolhapure B K, Elements of Civil Engineering and Engineering Mechanics, 2014, EBPB

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DEPARTMENT OF APPLIED SCIENCE & HUMANITIES
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : TEJASWINI ML
COURSE TYPE / CODE / TITLE : Theory/BETCK105E/Renewable Energy Sources
YEAR/ SEMESTER/SECTION : 2023/B
BRANCH : COMPUTER SCIENCE ENGINEERING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1:						
1	Module – 1 Introduction	L+PPT	BB	1	1	25.05.2023
2	Principles of renewable energy	L+PPT	PPT	2	3	26.05.2023
3	Energy and sustainable development	L+PPT	PPT	2	5	27.05.2023
4	Fundamentals and social implications	L+PPT	PPT	1	6	30.05.2023
5	Renewable energy availability in India and world wide.	L+PPT	PPT	1	7	31.05.2023
6	Brief descriptions on solar energy, biomass energy.	L+PPT	PPT	1	8	1.06.2023
7	Brief descriptions on wind energy, tidal and wave energy.	L+PPT	PPT	1	9	2.06.2023

8	Brief descriptions on ocean thermal energy.	L+PPT	PPT	1	10	5.06.2023
9	Brief descriptions on biomass and geothermal energy+	L+PPT	PPT	1	11	06.06.2023
10	Introduction to oil shale, Internet of energy.	L+PPT	PPT	1	12	07.06.2023
11	Seminar Presentation	L+PPT	PPT	1	13	08.06.2023
12	Module 2 – Solar Energy	L+D	BB	1	14	09.06.2023
13	Introduction to Solar Energy- Fundamentals	L+D	BB	1	15	10.6.2023
14	Solar Radiation – Angle of measurements, Estimation of solar radiation- Horizontal surfaces	L+PPT	PPT	1	16	12.6.2023
15	Estimation of solar radiation- Inclined surfaces	L+PPT	PPT	1	17	13.6.2023
16	Seminar Presentation	L+D	BB	1	18	14.6.2023
17	Solar radiation measurements- Pyreliometers	L+D	BB	1	19	15.6.2023
18	Solar radiation measurements- Pyranometers, Sunshine recorder.	L+D	BB	1	20	16.6.2023
19	Introduction to flat plate collectors, its working principles.	L+D	BB	1	21	20.6.2023
20	Working of Solar distillation and solar pond electric power plant.	L+D	BB	1	22	21.6.2023
21	Working principle of Solar cell	L+D	BB	1	23	22.6.2023
22	Photovoltaic system for electric power generation. Advantages, Disadvantages and its applications.	L+D	BB	1	24	23.6.2023
23	Seminar Presentation	L+D	BB	1	24	24.6.2023
24	First Internal Assessment					27.6.2023 – 30.6.2023
23	Module 3- Wind Energy Properties of wind, availability of of wind energy in India.	L+D	BB	1	25	3.7.2023
25	Derivation of wind velocity and wind power,	L+D	BB	1	26	4.7.2023

26	Major problem associated with wind energy	L+D	BB	1	27	5.7.2023
27	Basic component of wind energy conversion system	L+D	BB	1	28	6.7.2023
28	Classification of WECS- Horizontal axis	L+D	BB	1	29	7.7.2023
29	Seminar Presentation	L+D	BB	1	30	8.7.2023
30	Single, double and multi blade system.	L+D	BB	1	31	11.7.2023
31	Vertical axis- Savonius type	L+D	BB	1	32	12.7.2023
32	Darrieus types vertical axis wind turbine	L+D	BB	1	33	13.7.2023
33	Introduction to Biomass energy	L+D	BB	1	34	14.7.2023
34	Seminar Presentation	L+D	BB	1	35	18.7.2023
35	Biofuels, Categories of Biomass energy	L+D	BB	1	36	19.7.2023
36	Photosynthesis process	L+D	BB	1	37	20.7.2023
37	Biomass conversion technologies: Direct conversion	L+D	BB	1	38	21.7.2023
38	Biochemical conversion: Fermentation and anaerobic digestion	L+D	BB	1	39	22.7.2023
39	Seminar Presentation	L+D	BB	1	40	25.7.2023
40	Thermo chemical conversion: Gasification and liquefaction	L+D	BB	1	41	26.7.2023
41	Biogas plants, its classifications: Janata Biogas Plant	L+D	BB	1	42	27.7.2023
42	Revision	L+D	BB	1	43	28.7.2023
43	Second Internal Assessment					31.7.2023 – 2.8.2023
44	Module 4- Tidal Power, Ocean thermal energy conversion Fundamental characteristics of tidal power	L+D	BB	1	44	3.8.2023

45	Seminar Presentation	L+D	BB	1	45	4.8.2023
46	Single basin arrangement- Single ebb tide system, single tide cycle, double cycle system.	L+D	BB	1	46	5.8.2023
47	Double basin arrangement, Advantages and disadvantages of tide and wave energy.	L+D	BB	1	47	8.8.2023
48	Working principle of open cycle OTEC, Working principle of closed cycle OTEC	L+D	BB	1	48	9.8.2023
49	Seminar Presentation	L+D	BB	1	49	10.8.2023
50	Advantages and Disadvantages of open cycle OTEC, Advantages and Disadvantages of closed cycle OTEC and wave energy	L+D	BB	1	50	11.8.2023
51	Module 5- Green Energy , Introduction of fuel cells, its classifications.	L+D	BB	1	51	16.8.2023
52	Seminar Presentation	L+D	BB	1	52	17.8.2023
53	Alkaline Fuel cells- working principle, Potassium hydroxide fuel cells – working principle.	L+D	BB	1	53	18.8.2023
54	Introduction to hydrogen energy, Hydrogen production technologies- Thermo chemical production technology.	L+D	BB	1	53	19.8.2023
55	Hydrogen production technologies- Electrolytic production technology, Photolytic production technology.	L+D	BB	1	54	22.8.2023
56	Methods of storing hydrogen energy.	L+D	BB	1	55	23.8.2023
57	Benefits and Applications of hydrogen energy	L+D	BB	1	56	24.8.2023
58	Problems associated with Hydrogen energy	L+D	BB	1	57	25.8.2023
59	Seminar Presentation	L+D	BB	1	58	29.8.2023
60	Revision	L+D	BB	1	59	30.8.2023
61	Third Internal Assessment	L+D	BB	1	60	31.8.2023 – 2.9.2023

62	Seminar Presentation	L+D	BB	1	61	7.9.2023
63	Revision	L+D	BB	1	62	8.9.2023

Text Books:

1. Bansal R. K., Rakesh Ranjan Beohar and Ahmad Ali Khan, Basic Civil Engineering and Engineering Mechanics, 2015, Laxmi Publications.
2. Kolhapure B K, Elements of Civil Engineering and Engineering Mechanics, 2014, EBPB

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DEPARTMENT OF APPLIED SCIENCE & HUMANITIES
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : TEJASWINI ML
COURSE TYPE / CODE / TITLE : Theory/BETCK205E/Renewable Energy Sources
YEAR/ SEMESTER/SECTION : 2023/J
BRANCH : MECHANICAL ENGINEERING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1:						
1	Module – 1 Introduction	L+PPT	BB	1	1	25.05.2023
2	Principles of renewable energy	L+PPT	PPT	2	3	26.05.2023
3	Energy and sustainable development	L+PPT	PPT	2	5	29.05.2023
4	Fundamentals and social implications	L+PPT	PPT	1	6	30.05.2023
5	Renewable energy availability in India and world wide.	L+PPT	PPT	1	7	31.05.2023
6	Brief descriptions on solar energy, biomass energy.	L+PPT	PPT	1	8	2.06.2023
7	Brief descriptions on wind energy, tidal and wave energy.	L+PPT	PPT	1	9	3.06.2023

8	Brief descriptions on ocean thermal energy.	L+PPT	PPT	1	10	6.06.2023
9	Brief descriptions on biomass and geothermal energy+	L+PPT	PPT	1	11	07.06.2023
10	Introduction to oil shale, Internet of energy.	L+PPT	PPT	1	12	05.06.2023
11	Seminar Presentation	L+PPT	PPT	1	13	09.06.2023
12	Module 2 – Solar Energy	L+D	BB	1	14	10.06.2023
13	Introduction to Solar Energy- Fundamentals	L+D	BB	1	15	12.6.2023
14	Solar Radiation – Angle of measurements, Estimation of solar radiation- Horizontal surfaces	L+PPT	PPT	1	16	13.6.2023
15	Estimation of solar radiation- Inclined surfaces	L+PPT	PPT	1	17	14.6.2023
16	Seminar Presentation	L+D	BB	1	18	16.6.2023
17	Solar radiation measurements- Pyreliometers	L+D	BB	1	19	19.6.2023
18	Solar radiation measurements- Pyranometers, Sunshine recorder.	L+D	BB	1	20	20.6.2023
19	Introduction to flat plate collectors, its working principles.	L+D	BB	1	21	21.6.2023
20	Working of Solar distillation and solar pond electric power plant.	L+D	BB	1	22	23.6.2023
21	Working principle of Solar cell	L+D	BB	1	23	24.6.2023
22	Photovoltaic system for electric power generation. Advantages, Disadvantages and its applications.	L+D	BB	1	24	23.6.2023
23	Seminar Presentation	L+D	BB	1	25	24.6.2023
24	First Internal Assessment				26	26.6.2023 – 28.6.2023
23	Module 3- Wind Energy Properties of wind, availability of of wind energy in India.	L+D	BB	1	27	30.6.2023
25	Derivation of wind velocity and wind power,	L+D	BB	1	28	3.7.2023

26	Major problem associated with wind energy	L+D	BB	1	29	4.7.2023
27	Basic component of wind energy conversion system	L+D	BB	1	30	5.7.2023
28	Classification of WECS- Horizontal axis	L+D	BB	1	31	7.7.2023
29	Seminar Presentation	L+D	BB	1	32	8.7.2023
30	Single, double and multi blade system.	L+D	BB	1	33	11.7.2023
31	Vertical axis- Savonius type	L+D	BB	1	34	12.7.2023
32	Darrieus types vertical axis wind turbine	L+D	BB	1	35	10.7.2023
33	Introduction to Biomass energy	L+D	BB	1	36	14.7.2023
34	Seminar Presentation	L+D	BB	1	37	18.7.2023
35	Biofuels, Categories of Biomass energy	L+D	BB	1	38	19.7.2023
36	Photosynthesis process	L+D	BB	1	39	17.7.2023
37	Biomass conversion technologies: Direct conversion	L+D	BB	1	40	21.7.2023
38	Biochemical conversion: Fermentation and anaerobic digestion	L+D	BB	1	41	22.7.2023
39	Seminar Presentation	L+D	BB	1	42	25.7.2023
40	Thermo chemical conversion: Gasification and liquefaction	L+D	BB	1	43	26.7.2023
41	Biogas plants, its classifications: Janata Biogas Plant	L+D	BB	1	44	24.7.2023
42	Revision	L+D	BB	1	45	28.7.2023
43	Second Internal Assessment				46	31.7.2023 – 2.8.2023
44	Module 4- Tidal Power, Ocean thermal energy conversion Fundamental characteristics of tidal power	L+D	BB	1	47	3.8.2023

45	Seminar Presentation	L+D	BB	1	48	4.8.2023
46	Single basin arrangement- Single ebb tide system, single tide cycle, double cycle system.	L+D	BB	1	49	5.8.2023
47	Double basin arrangement, Advantages and disadvantages of tide and wave energy.	L+D	BB	1	50	8.8.2023
48	Working principle of open cycle OTEC, Working principle of closed cycle OTEC	L+D	BB	1	51	9.8.2023
49	Seminar Presentation	L+D	BB	1	52	07.8.2023
50	Advantages and Disadvantages of open cycle OTEC, Advantages and Disadvantages of closed cycle OTEC and wave energy	L+D	BB	1	53	11.8.2023
51	Module 5- Green Energy , Introduction of fuel cells, its classifications.	L+D	BB	1	54	16.8.2023
52	Seminar Presentation	L+D	BB	1	55	14.8.2023
53	Alkaline Fuel cells- working principle, Potassium hydroxide fuel cells – working principle.	L+D	BB	1	56	18.8.2023
54	Introduction to hydrogen energy, Hydrogen production technologies- Thermo chemical production technology.	L+D	BB	1	57	19.8.2023
55	Hydrogen production technologies- Electrolytic production technology, Photolytic production technology.	L+D	BB	1	58	22.8.2023
56	Methods of storing hydrogen energy.	L+D	BB	1	59	23.8.2023
57	Benefits and Applications of hydrogen energy	L+D	BB	1	60	21.8.2023
58	Problems associated with Hydrogen energy	L+D	BB	1	61	25.8.2023
59	Seminar Presentation	L+D	BB	1	62	29.8.2023
60	Revision	L+D	BB	1	63	30.8.2023
61	Third Internal Assessment				64	31.8.2023 – 2.9.2023

62	Revision	L+D	BB	1	66	8.9.2023
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Text Books:

1. Bansal R. K., Rakesh Ranjan Beohar and Ahmad Ali Khan, Basic Civil Engineering and Engineering Mechanics, 2015, Laxmi Publications.
2. Kolhapure B K, Elements of Civil Engineering and Engineering Mechanics, 2014, EBPB

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DEPARTMENT OF APPLIED SCIENCE & HUMANITIES
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : TEJASWINI ML
COURSE TYPE / CODE / TITLE : Theory/BETCK205E/Renewable Energy Sources
YEAR/ SEMESTER/SECTION : 2023/G
BRANCH : ELECTRONIC AND COMMUNICATION ENGINEERING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1:						
1	Module – 1 Introduction	L+PPT	BB	1	1	25.05.2023
2	Principles of renewable energy	L+PPT	PPT	2	3	26.05.2023
3	Energy and sustainable development	L+PPT	PPT	2	5	27.05.2023
4	Fundamentals and social implications	L+PPT	PPT	1	6	30.05.2023
5	Renewable energy availability in India and world wide.	L+PPT	PPT	1	7	31.05.2023
6	Brief descriptions on solar energy, biomass energy.	L+PPT	PPT	1	8	1.06.2023
7	Brief descriptions on wind energy, tidal and wave energy.	L+PPT	PPT	1	9	2.06.2023

8	Brief descriptions on ocean thermal energy.	L+PPT	PPT	1	10	5.06.2023
9	Brief descriptions on biomass and geothermal energy+	L+PPT	PPT	1	11	06.06.2023
10	Introduction to oil shale, Internet of energy.	L+PPT	PPT	1	12	07.06.2023
11	Seminar Presentation	L+PPT	PPT	1	13	08.06.2023
12	Module 2 – Solar Energy	L+D	BB	1	14	09.06.2023
13	Introduction to Solar Energy- Fundamentals	L+D	BB	1	15	10.6.2023
14	Solar Radiation – Angle of measurements, Estimation of solar radiation- Horizontal surfaces	L+PPT	PPT	1	16	12.6.2023
15	Estimation of solar radiation- Inclined surfaces	L+PPT	PPT	1	17	13.6.2023
16	Seminar Presentation	L+D	BB	1	18	14.6.2023
17	Solar radiation measurements- Pyreliometers	L+D	BB	1	19	15.6.2023
18	Solar radiation measurements- Pyranometers, Sunshine recorder.	L+D	BB	1	20	16.6.2023
19	Introduction to flat plate collectors, its working principles.	L+D	BB	1	21	20.6.2023
20	Working of Solar distillation and solar pond electric power plant.	L+D	BB	1	22	21.6.2023
21	Working principle of Solar cell	L+D	BB	1	23	22.6.2023
22	Photovoltaic system for electric power generation. Advantages, Disadvantages and its applications.	L+D	BB	1	24	23.6.2023
23	Seminar Presentation	L+D	BB	1	25	24.6.2023
24	First Internal Assessment				26	27.6.2023 – 30.6.2023
23	Module 3- Wind Energy Properties of wind, availability of of wind energy in India.	L+D	BB	1	27	3.7.2023
25	Derivation of wind velocity and wind power,	L+D	BB	1	28	4.7.2023

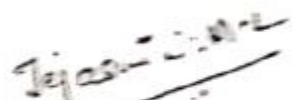
26	Major problem associated with wind energy	L+D	BB	1	29	5.7.2023
27	Basic component of wind energy conversion system	L+D	BB	1	30	6.7.2023
28	Classification of WECS- Horizontal axis	L+D	BB	1	31	7.7.2023
29	Seminar Presentation	L+D	BB	1	32	8.7.2023
30	Single, double and multi blade system.	L+D	BB	1	33	11.7.2023
31	Vertical axis- Savonius type	L+D	BB	1	34	12.7.2023
32	Darrieus types vertical axis wind turbine	L+D	BB	1	35	13.7.2023
33	Introduction to Biomass energy	L+D	BB	1	36	14.7.2023
34	Seminar Presentation	L+D	BB	1	37	18.7.2023
35	Biofuels, Categories of Biomass energy	L+D	BB	1	38	19.7.2023
36	Photosynthesis process	L+D	BB	1	39	20.7.2023
37	Biomass conversion technologies: Direct conversion	L+D	BB	1	40	21.7.2023
38	Biochemical conversion: Fermentation and anaerobic digestion	L+D	BB	1	41	22.7.2023
39	Seminar Presentation	L+D	BB	1	42	25.7.2023
40	Thermo chemical conversion: Gasification and liquefaction	L+D	BB	1	43	26.7.2023
41	Biogas plants, its classifications: Janata Biogas Plant	L+D	BB	1	44	27.7.2023
42	Revision	L+D	BB	1	45	28.7.2023
43	Second Internal Assessment				46	31.7.2023 – 2.8.2023
44	Module 4- Tidal Power, Ocean thermal energy conversion Fundamental characteristics of tidal power	L+D	BB	1	47	3.8.2023

45	Seminar Presentation	L+D	BB	1	48	4.8.2023
46	Single basin arrangement- Single ebb tide system, single tide cycle, double cycle system.	L+D	BB	1	49	5.8.2023
47	Double basin arrangement, Advantages and disadvantages of tide and wave energy.	L+D	BB	1	50	8.8.2023
48	Working principle of open cycle OTEC, Working principle of closed cycle OTEC	L+D	BB	1	51	9.8.2023
49	Seminar Presentation	L+D	BB	1	52	10.8.2023
50	Advantages and Disadvantages of open cycle OTEC, Advantages and Disadvantages of closed cycle OTEC and wave energy	L+D	BB	1	53	11.8.2023
51	Module 5- Green Energy , Introduction of fuel cells, its classifications.	L+D	BB	1	54	16.8.2023
52	Seminar Presentation	L+D	BB	1	55	17.8.2023
53	Alkaline Fuel cells- working principle, Potassium hydroxide fuel cells – working principle.	L+D	BB	1	56	18.8.2023
54	Introduction to hydrogen energy, Hydrogen production technologies- Thermo chemical production technology.	L+D	BB	1	57	19.8.2023
55	Hydrogen production technologies- Electrolytic production technology, Photolytic production technology.	L+D	BB	1	58	22.8.2023
56	Methods of storing hydrogen energy.	L+D	BB	1	59	23.8.2023
57	Benefits and Applications of hydrogen energy	L+D	BB	1	60	24.8.2023
58	Problems associated with Hydrogen energy	L+D	BB	1	61	25.8.2023
59	Seminar Presentation	L+D	BB	1	62	29.8.2023
60	Revision	L+D	BB	1	63	30.8.2023
61	Third Internal Assessment				64	31.8.2023 – 2.9.2023

62	Seminar Presentation	L+D	BB	1	65	7.9.2023
63	Revision	L+D	BB	1	66	8.9.2023

Text Books:

1. Bansal R. K., Rakesh Ranjan Beohar and Ahmad Ali Khan, Basic Civil Engineering and Engineering Mechanics, 2015, Laxmi Publications.
2. Kolhapure B K, Elements of Civil Engineering and Engineering Mechanics, 2014, EBPB


COURSE INCHARGE


HOD


PRINCIPAL
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C.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109

K S INSTITUTE OF TECHNOLOGY, BANGALORE
DEPARTMENT OF APPLIED SCIENCES & HUMANITIES
LESSON PLAN 2022-23 ODD SEMESTER



COURSE INCHARGE : DR. SALEEM KHAN

COURSE TYPE / CODE / TITLE : Emerging Technology Course/ BFTCK105E / Renewable Energy Sources

YEAR/ SEMESTER/SECTION : I / I / D

BRANCH : COMPUTER SCIENCE & DESIGN

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1						
1	Introduction to Renewable Energy Sources	L+D,PS	LCD	1	1	12/12/2022
2	Principles of renewable energy; energy and sustainable development, fundamentals and social implications.	L+D,PS	LCD	1	2	14/12/2022
3	Worldwide renewable energy availability, renewable energy availability in India.	L+D,PS	LCD	1	3	15/12/2022
4	brief descriptions on solar energy, wind energy	L+D,PS	LCD	1	4	16/12/2022
5	Tidal energy, wave energy	L+D,PS	LCD	1	5	19/12/2022
6	Ocean thermal energy, biomass energy	L+D,PS	LCD	1	6	21/12/2022
7	Geothermal energy, oil shale.	L+D,PS	LCD	1	7	22/12/2022
8	Introduction to Internet of energy (IOE).	L+D,PS	LCD	1	8	23/12/2022
Module 2						

9	Solar Energy: Fundamentals; Solar Radiation;	L+D,PS	LCD	1	9	24/12/2022
10	Estimation of solar radiation on horizontal and inclined surfaces	L+D,PS	LCD+BB	1	10	26/12/2022
11	Solar radiation Measurements- Pyrheliometer, Pyrometer	L+D,PS	LCD	1	11	28/12/2022
12	Sunshine Recorder. Solar Thermal systems: Flat plate collector	L+D,PS	LCD	1	12	29/12/2022
13	Solar distillation; Solar pond electric power plant.	L+D,PS	LCD	1	13	30/12/2022
14	Solar electric power generation- Principle of Solar cell	L+D,PS	LCD	1	14	31/12/2022
15	Photovoltaic system for electric power generation	L+D,PS	LCD	1	15	02/01/2023
16	Advantages, Disadvantages and applications of solar photovoltaic system.	L+D,PS	LCD	1	16	04/01/2023
Module 3						
17	Wind Energy: Properties of wind, availability of wind energy in India,	L+D,PS	LCD	1	17	05/01/2023
18	Wind velocity and power from wind	L+D,PS	LCD+BB	1	18	06/01/2023
19	Major problems associated with wind power, Basic components of wind energy conversion system (WECS);	L+D,PS	LCD	1	19	09/01/2023
20	Classification of WECS- Horizontal axis- single, double and multiblade system.	L+D,PS	LCD	1	20	11/01/2023
21	Vertical axis- Savonius and darrius types.	L+D,PS	LCD	1	21	12/01/2023
22	Biomass Energy: Introduction; Photosynthesis Process; Biofuels; Biomass Resources;	L+D,PS	LCD	1	22	13/01/2023
23	Biomass conversion technologies-fixed dome;	L+D,PS	LCD	1	23	16/01/2023
24	Urban waste to energy conversion; Biomass gasification (Downdraft).	L+D,PS	LCD	1	24	23/01/2023
Module 4						
25	Tidal Power: Tides and waves as energy suppliers and their mechanics	L+D,PS	LCD	1	25	25/01/2023

26	Fundamental characteristics of tidal power	L+D,PS	LCD	1	26	27/01/2023
27	Harnessing tidal energy,	L+D,PS	LCD	1	27	28/01/2023
28	Advantages and limitations	L+D,PS	LCD	1	28	30/01/2023
29	Ocean Thermal Energy Conversion: Principle of working	L+D,PS	LCD	1	29	01/02/2023
30	Open cycle and closed cycle system.	L+D,PS	LCD	1	30	02/02/2023
31	OTEC power stations in the world	L+D,PS	LCD	1	31	03/02/2023
32	Problems associated with OTEC.	L+D,PS	LCD	1	32	06/02/2023

Module 5

33	Green Energy: Introduction	L+D,PS	LCD	1	33	08/02/2023
34	Fuel cells	L+D,PS	LCD	1	34	09/02/2023
35	Classification of fuel cells	L+D,PS	LCD	1	35	10/02/2023
36	Zero energy Concepts. Benefits of hydrogen energy	L+D,PS	LCD	1	36	11/02/2023
37	Hydrogen production technologies (electrolysis method only),	L+D,PS	LCD	1	37	13/02/2023
38	Hydrogen energy storage	L+D,PS	LCD	1	38	15/02/2023
39	Applications of hydrogen energy,	L+D,PS	LCD	1	39	16/02/2023
40	Problem associated with hydrogen energy.	L+D,PS	LCD	1	40	17/02/2023
41	Revision	L+D,PS	LCD	1	41	23/02/2023
42	Revision	L+D,PS	LCD	1	42	24/02/2023
43	Revision	L+D,PS	LCD	1	43	25/02/2023
44	Revision	L+D,PS	LCD	1	44	27/02/2023
45	Revision	L+D,PS	LCD	1	45	01/03/2023
46	Revision	L+D,PS	LCD	1	46	02/03/2023

47	Revision	L+D,PS	LCD	1	47	03/03/2023
48	Revision	L+D,PS	LCD	1	48	06/03/2023
49	Revision	L+D,PS	LCD	1	49	08/03/2023
50	Revision	L+D,PS	LCD	1	50	09/03/2023
51	Revision	L+D,PS	LCD	1	51	10/03/2023
52	Revision	L+D,PS	LCD	1	52	13/03/2023
53	Revision	L+D,PS	LCD	1	53	15/03/2023
54	Revision	L+D,PS	LCD	1	54	16/03/2023
55	Revision	L+D,PS	LCD	1	55	17/03/2023
56	Revision	L+D,PS	LCD	1	56	20/03/2023
57	Revision	L+D,PS	LCD	1	57	30/03/2023
58	Revision	L+D,PS	LCD	1	58	31/03/2023

Text Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)

1. Nonconventional Energy sources, G D Rai, Khanna Publication, Fourth Edition,
2. Energy Technology, S.Rao and Dr. B.B. Parulekar, Khanna Publication.Solarenergy, SubhasPSukhatme, TataMcGrawHill, 2ndEdition, 1996.

Reference Books:

1. Principles of Energy conversion, A. W. Culp Jr., McGraw Hill, 1996
2. Non-Convention EnergyResources, Shobh Nath Singh, Pearson, 2018

Web Materials:

Webinks and Video Lectures (e-Resources):

- ✓ E-book URL: <https://www.pdfdrive.com/non-conventional-energy-sources-e10086374.html>
- ✓ E-book URL: <https://www.pdfdrive.com/non-conventional-energy-systems-nptel-d17376903.html>
- ✓ E-book URL: <https://www.pdfdrive.com/renewable-energy-sources-and-their-applications-e33423592.html>
- ✓ E-book URL: <https://www.pdfdrive.com/lecture-notes-on-renewable-energy-sources-e34339149.html>
- ✓ https://onlinecourses.nptel.ac.in/noc18_ge09/preview

Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

- ✓ Poster presentation on the theme of renewable energy sources
- ✓ Industry Visit

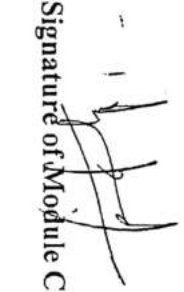
Details of the teaching aids:

1. BLACK BOARD USAGE
2. Photographs
3. PPT
4. Videos

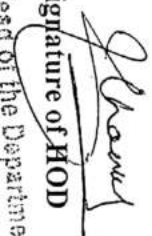
Signature of Course In-Charge



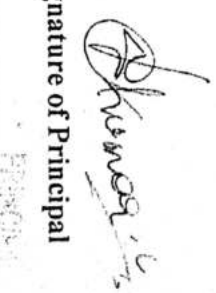
Signature of Module Coordinator



Signature of HOD



Signature of Principal



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DEPARTMENT OF APPLIED SCIENCE & HUMANITIES
ACADEMIC YEAR: 2022-2023 EVEN SEM
LESSON PLAN

COURSE INCHARGE : MANJUNATHA.B.R
COURSE TYPE / CODE / TITLE : BCEDK203/ Computer Aided Engineering Drawing
YEAR/ SEMESTER/SECTION : I / II / B
BRANCH : COMPUTER SCIENCE & ENGINEERING (CSE)

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1:						
1	Introduction: for CIE only Significance of Engineering drawing, BIS Conventions of Engineering Drawing, Free hand sketching of engineering drawing, Scales.	L	BB+LCD	1	1	1/6/23
2	Introduction to Computer Aided Drafting software, Co-ordinate system and reference planes HP, VP, RPP & LPP of 2D/3D environment.	L	BB+LCD	1	2	1/6/23
3	Selection of drawing sheet size and scale. Commands and creation of Lines, coordinate points, axes, polylines, square, rectangle, polygons, splines, circles, ellipse, text, move, copy, off-set, mirror, rotate, trim, extend, break, chamfer, fillet and curves.	L	BB+LCD	1	3	2/6/23

4	Introduction to Orthographic projections	L	BB+LCD	1	4	2/6/23
5	Orthographic projections of points in all the quadrants	L	BB+LCD	1	5	8/6/23
6	projections of points	L	BB+LCD	1	6	8/6/23
7	projections of points	L	BB+LCD	1	7	9/6/23
8	projections of points	L	BB+LCD	1	8	9/6/23
9	Orthographic projections of lines	L	BB+LCD	1	9	15/6/23
10	projections of lines	L	BB+LCD	1	10	15/6/23
11	projections of lines	L	BB+LCD	1	11	16/6/23
12	projections of lines	L	BB+LCD	1	12	16/6/23
13	Orthographic projections of planes	L	BB+LCD	1	13	22/6/23
14	projections of planes	L	BB+LCD	1	14	22/6/23
15	projections of planes	L	BB+LCD	1	15	23/6/23
16	projections of planes	L	BB+LCD	1	16	23/6/23
17	projections of planes	L	BB+LCD	1	17	30/6/23
18	projections of planes	L	BB+LCD	1	18	30/6/23
19	Introduction to caed	L	LCD	LabSession-2HR		30/5/23
20	Projection of points	L	LCD	LabSession-2HR		6/6/23
21	Projection of lines	L	LCD	LabSession-2HR		13/6/23
22	Projection of planes	L	LCD	LabSession-2HR		20/6/23
Module 2						
23	Orthographic Projection of Solids	L	BB+LCD	1	19	6/7/23
24	Projection of Solids	L	BB+LCD	1	20	6/7/23
25	Projection of Solids	L	BB+LCD	1	21	7/7/23

26	Projection of Solids	L	BB+LCD	1	22	7/7/23
27	Projection of Solids	L	BB+LCD	1	23	13/7/23
28	Projection of Solids	L	BB+LCD	1	24	13/7/23
29	Projection of Solids	L	BB+LCD	1	25	14/7/23
30	Projection of Solids	L	BB+LCD	1	26	14/7/23
31	Projection of Solids	L	BB+LCD	1	27	20/7/23
32	Projection of Solids	L	BB+LCD	1	28	20/7/23
33	Projection of Solids	L	BB+LCD	1	29	21/7/23
34	Projection of prisms	L	LCD	LabSession-2HR		4/7/23
35	Projection of prisms	L	LCD	LabSession-2HR		11/7/23
36	Projection of pyramids	L	LCD	LabSession-2HR		18/7/23
37	Projection of pyramids	L	LCD	LabSession-2HR		22/7/23
Module 3						
38	Isometric Projections	L	BB+LCD	1	30	21/7/23
39	Isometric Projections	L	BB+LCD	1	31	27/7/23
40	Isometric Projections	L	BB+LCD	1	32	27/7/23
41	Isometric Projections	L	BB+LCD	1	33	28/7/23
42	Isometric Projections	L	BB+LCD	1	34	28/7/23
43	Isometric Projections	L	BB+LCD	1	35	3/8/23
44	Isometric Projections	L	BB+LCD	1	36	3/8/23
45	Isometric Projections	L	BB+LCD	1	37	4/8/23
46	Isometric Projections	L	BB+LCD	1	38	4/8/23
47	Isometric Projections	L	BB+LCD	1	39	10/8/23

48	Isometric Projections	L	BB+LCD	1	40	10/8/23
49	Isometric Projections of prisms and pyramids	L	LCD	LabSession-2HR		25/7/23
50	Isometric Projections of cylinder and cone	L	LCD	LabSession-2HR		8/8/23
51	Isometric Projections of truncated and frustum of solids	L	LCD	LabSession-2HR		19/8/23
Module 4						
52	Development of Lateral Surfaces of Solids	L	BB+LCD	1	41	11/8/23
53	Development of Lateral Surfaces of Solids	L	BB+LCD	1	42	11/8/23
54	Development of Lateral Surfaces of Solids	L	BB+LCD	1	43	17/8/23
55	Development of Lateral Surfaces of Solids	L	BB+LCD	1	44	17/8/23
56	Development of Lateral Surfaces of Solids	L	BB+LCD	1	45	18/8/23
57	Development of Lateral Surfaces of Solids	L	BB+LCD	1	46	18/8/23
58	Development of Lateral Surfaces of Solids	L	BB+LCD	1	47	24/8/23
59	Development of Lateral Surfaces of Solids	L	BB+LCD	1	48	24/8/23
60	Development of Lateral Surfaces of Solids	L	BB+LCD	1	49	25/8/23
61	Development of prisms	L	LCD	LabSession-2HR		8/8/23
62	Development of pyramids	L	LCD	LabSession-2HR		8/8/23
63	Development of cylinders	L	LCD	LabSession-2HR		22/8/23
64	Development of cones	L	LCD	LabSession-2HR		29/6/23
Module5						
65	Multidisciplinary Applications & Practice	L	BB+LCD	1	50	25/8/23
66	Multidisciplinary Applications & Practice	L	BB+LCD	1	51	7/9/23
67	Multidisciplinary Applications & Practice	L	BB+LCD	1	52	7/9/23
68	Multidisciplinary Applications & Practice	L	BB+LCD	1	53	7/9/23

69	REVISION	L	BB+LCD	1	54	8/9/23
70	REVISION	L	BB+LCD	1	55	8/9/23
71	REVISION	L	BB+LCD	1	56	8/9/23

Text Books:

- Bhatt, N.D., Engineering Drawing: Plane and Solid Geometry, 53rd edition, Charotar Publishing House Pvt.● Limited, 2019.
- K. R. Gopalakrishna,● & Sudhir Gopalakrishna: Textbook Of Computer Aided Engineering Drawing, 39th Edition, Subash Stores, Bangalore, 2017
- S. N. Lal: Engineering Drawing with an Introduction to AutoCAD : First-angle Projection 1● st Edition, Cengage, Publication, 2018
- S.N. Lal, & T Madhusudhan:, Engineering Visulisation, 1st Edition, Cengage, Publication
- Luzadder Warren J., Duff John M., Fundamentals of Engineering Drawing: with an Introduction to Interactive
- Computer Graphics for Design and Production, Prentice-Hall of India Pvt. Ltd., New Delhi, Eastern Economy Edition, 2005.

Reference Books:

- Parthasarathy N. S., Vela Murali, Engineering Drawing, Oxford University Press, 2015.
- Dhawan R. K., A Textbook of Engineering Drawing, 3/e, S. Chand Publishing, 2019.
- Venugopal K., Engineering Drawing and Graphics, New Age International publishers, 2014.
- Bhattacharya S. K., Electrical Engineering Drawing, New Age International publishers, second edition 1998,● reprint 2005.
- Chris Schroder, Printed Circuit Board Design using AutoCAD, Newnes, 1997.
- K S Sai Ram Design of steel structures, , Third Edition by Pearson
- Nainan p kurian Design of foundation systems, Narosa publications
- A S Pabla, Electrical power distribution, 6th edition, Tata Mcgraw hill

Useful websites:

<https://engineeringinsider.org/first-angle-third-angle-projection/>
<https://nptel.ac.in/courses/112103019/19>
<https://simgraph.wordpress.com/projection-of-planess/>
<https://ktuengineeringgraphics.wordpress.com/projections-of-solids/>

Murdon
 Course In-Charge

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 Module Coordinator

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 Principal
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K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF APPLIED SCIENCE & HUMANITIES
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : RANGANATH N

COURSE TYPE / CODE / TITLE : Theory/BETCKA205E/Renewable Energy Sources

YEAR/ SEMESTER/SECTION : 2022-23/II/H

BRANCH

: CSE – INTERNET OF THINGS (IOT)

Sl. no	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: INTRODUCTION						
1	Module – 1 Introduction	L+PPT	BB	1	1	25/5/2023
2	Principles of renewable energy	L+PPT	PPT	1	2	26/5/2023
3	Energy and sustainable development	L+PPT	PPT	1	3	29/5/2023
4	Fundamentals and social implications	L+PPT	PPT	1	4	31/5/2023
5	Renewable energy availability in India and world wide.	L+PPT	PPT	1	5	1/6/2023
6	Brief descriptions on solar energy, biomass energy.	L+PPT	PPT	1	6	2/6/2023
7	Brief descriptions on wind energy, tidal and wave energy.	L+PPT	PPT	1	7	5/6/2023

8	Brief descriptions on ocean thermal energy.	L+PPT	PPT	1	8	7/6/2023
9	Brief descriptions on biomass and geothermal energy+	L+PPT	PPT	1	9	8/6/2023
10	Introduction to oil shale, Internet of energy.	L+PPT	PPT	1	10	9/6/2023
Module 2: SOLAR ENERGY						
11	Seminar Presentation	L+PPT	PPT	1	11	10/6/2023
12	Module 2 – Solar Energy	L+D	BB	1	12	12/6/2023
13	Introduction to Solar Energy- Fundamentals	L+D	BB	1	13	14/6/2023
14	Solar Radiation – Angle of measurements, Estimation of solar radiation- Horizontal surfaces	L+PPT	PPT	1	14	15/6/2023
15	Estimation of solar radiation- Inclined surfaces	L+PPT	PPT	1	15	16/6/2023
16	Solar radiation measurements- Pyreliometers, Sunshine recorder	L+D	BB	1	16	19/6/2023
17	Introduction to flat plate collectors, its working principles.	L+D	BB	1	17	21/6/2023
18	Working of Solar distillation and solar pond electric power plant.	L+D	BB	1	18	22/6/2023
19	Working principle of Solar cell	L+D	BB	1	19	23/6/2023
20	Photovoltaic system for electric power generation. Advantages, Disadvantages and its applications.	L+D	BB	1	20	24/6/2023
21	INTERNAL TEST-1	L+D	BB	1	21	28/6/2023
Module 3- WIND ENERGY						
22	Module 3- Wind Energy Properties of wind, availability of wind energy in India.	L+D	BB	1	22	30/6/2023
23	Derivation of wind velocity and wind power,	L+D	BB	1	23	31/7/2023
24	Seminar Presentation	L+PPT	PPT	1	24	5/7/2023

25	Major problem associated with wind energy	L+D	BB	1	25	6/7/2023
26	Basic component of wind energy conversion system	L+D	BB	1	26	7/7/2023
27	Classification of WECS- Horizontal axis	L+D	BB	1	27	8/7/2023
28	Seminar Presentation	L+D	BB	1	28	10/7/2023
29	Single, double and multi blade system.	L+PPT	PPT	1	29	12/7/2023
30	Vertical axis- Savonius type	L+D	BB	1	30	13/7/2023
31	Darrieus types vertical axis wind turbine	L+D	BB	1	31	14/7/2023
32	Introduction to Biomass energy	L+D	BB	1	32	17/7/2023
33	Seminar Presentation	L+PPT	PPT	1	33	19/7/2023
34	Biofuels, Categories of Biomass energy	L+D	BB	1	34	20/7/2023
35	Photosynthesis process	L+D	BB	1	35	21/7/2023
36	Biomass conversion technologies: Direct conversion	L+D	BB	1	36	24/7/2023
37	Biochemical conversion: Fermentation and anaerobic digestion	L+D	BB	1	37	26/7/2023
38	Biochemical conversion: Fermentation and anaerobic digestion	L+D	BB	1	38	27/7/2023
39	Thermo chemical conversion: Gasification and liquefaction	L+D	BB	1	39	28/7/2023
40	INTERNAL TEST-2	-	-	1	40	2/8/2023
41	Thermo chemical conversion: Gasification and liquefaction	L+D	BB	1	41	3/8/2023
42	Biogas plants, its classifications: Janata Biogas Plant	L+D	BB	1	42	4/8/2023
Module 4- TIDAL POWER, OCEAN THERMAL ENERGY CONVERSION						
43	Module 4- Tidal Power, Ocean thermal energy conversion: Introduction	L+D	BB	1	43	5/8/2023

44	Fundamental characteristics of tidal power	L+D	BB	1	44	7/8/2023
45	Seminar Presentation	L+PPT	PPT	1	45	9/8/2023
46	Single basin arrangement- Single ebb tide system, single tide cycle, double cycle system.	L+D	BB	1	46	10/8/2023
47	Single basin arrangement- Single ebb tide system, single tide cycle, double cycle system.	L+D	BB	1	47	11/8/2023
48	Double basin arrangement, Advantages and disadvantages of tide and wave energy.	L+D	BB	1	48	14/8/2023
49	Working principle of open cycle OTEC	L+D	BB	1	49	16/8/2023
50	Working principle of closed cycle OTEC	L+D	BB	1	50	17/8/2023
51	Problems associated with ocean thermal energy conversion system	L+D	BB	1	51	18/8/2023
52	Seminar Presentation	L+PPT	PPT	1	52	19/8/2023
53	Advantages and Disadvantages of open cycle, closed cycle OTEC, wave energy	L+D	BB	1	53	21/8/2023
Module 5- GREEN ENERGY						
54	Module 5- Green Energy: Introduction	L+D	BB	1	54	23/8/2023
55	Introduction of fuel cells, its classifications.	L+D	BB	1	55	24/8/2023
56	Alkaline Fuel cells- working principle, Potassium hydroxide fuel cells – working principle.	L+D	BB	1	56	25/8/2023
57	Molten carbonate fuel cells - working principle, Solid oxide fuel cells - working principle, Zero energy concepts	L+D	BB	1	57	28/8/2023
58	Introduction to hydrogen energy, Hydrogen production technologies- Thermo chemical production technology.	L+D	BB	1	58	30/8/2023
59	INTERNAL TEST-3	-	-	1	59	2/9/2023
60	Hydrogen production technologies- Electrolytic production technology.	L+D	BB	1	60	4/9/2023

61	Hydrogen production technologies- Photolytic production technology.	L+D	BB	1	61	6/9/2023
62	Methods of storing hydrogen energy.	L+D	BB	1	62	7/9/2023
63	Benefits and Applications of hydrogen energy, Problems associated with Hydrogen energy	L+D	BB	1	63	8/9/2023
64	Revision	L+D	BB	1	64	9/9/2023

Text Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)


1. Nonconventional Energy sources, G D Rai, Khanna Publication, Fourth Edition,
2. Energy Technology, S.Rao and Dr. B.B. Parulekar, Khanna Publication. Solarenergy, SubhasSukhatme, TataMcGrawHill, 2nd Edition, 1996.

Reference Books:

1. Principles of Energy conversion, A. W. Culp Jr., McGraw Hill, 1996
2. Non-Convention EnergyResources, Shobh Nath Singh, Pearson, 2018


Course Incharge


Module coordinator


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K.S. Institute of Technology
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Principal

**KSIT**

K.S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF APPLIED SCIENCE AND HUMANITIES
LESSON PLAN 2022-2023EVEN SEMESTER

COURSE INCHARGE : RANGANATH N

COURSE CODE/TITLE : INTEGRATED/BPLCK205B/INTRODUCTION TO PYTHON PROGRAMMING

YEAR/SEMESTER/SECTION : III/C

BRANCH : CSE

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: Python Basics						
1	Python Basics: Entering Expressions into the Interactive Shell,	L+D,PS	BB/PPT	1	1	26/5/2023
2	The Integer, Floating-Point, and String Data Types,	L+D,PS	BB/PPT	1	2	30/5/2023
3	String Concatenation and Replication, Storing Values in Variables	L+D,PS	BB/PPT	1	3	1/6/2023
4	Your First Program, Dissecting Your Program,	L+D,PS	BB/PPT	1	4	2/6/2023
5	Flow control: Boolean Values, Comparison Operators,	L+D,PS	BB/PPT	1	5	6/6/2023
6	Boolean Operators, Mixing Boolean and Comparison Operators	L+D,PS	BB/PPT	1	6	7/6/2023
7	Elements of Flow Control, Program Execution,	L+D,PS	BB/PPT	1	7	8/6/2023
8	Flow Control Statements, Importing Modules	L+D,PS	BB/PPT	1	8	9/6/2023
9	Ending a Program Early with sys.exit()	L+D,PS	BB/PPT	1	9	10/6/2023
10	Module 1: Laboratory Experiment a. Develop a program to read the student details like Name, USN, and Marks in three subjects. Display the student details, total	L+D, PS	LCD	LabSession- 2HR	6	12/6/2023 13/6/2023 15/6/2023

	marks and percentage with suitable messages b. Develop a program to read the name and year of birth of a person. Display whether the person is a senior citizen or not.						
11	Functions: def Statements with Parameters	L+D, PS	BB/PPT	1	10	13/6/2023	
12	Return Values and return Statements	L+D, PS	BB/PPT	1	11	14/6/2023	
13	The None Value, Keyword Arguments and print(),	L+D, PS	BB/PPT	1	12	15/6/2023	
14	Local and Global Scope,	L+D, PS	BB/PPT	1	13	16/6/2023	
15	The global Statement	L+D, PS	BB/PPT	1	14	20/6/2023	
16	Exception Handling	L+D, PS	BB/PPT	1	15	21/6/2023	
17	A Short Program: Guess the Number	L+D, PS	BB/PPT	1	16	22/6/2023	

Module 2: Lists & Dictionaries and Structuring Data

18	Module 2:Lists: The List Data Type, Working with Lists	L+D, PS	BB/PPT	1	17	23/6/2023	
19	The List Data Type, Working with Lists	L+D, PS	BB/PPT	1	18	24/6/2023	
20	INTERNAL ASSESSMENT – 1						
21	The List Data Type, Working with Lists	L+D, PS	BB/PPT	1	19	30/6/2023	
22	Augmented Assignment Operators, methods	L+D, PS	BB/PPT	1	20	4/7/2023	
23	Example Program: Magic 8 Ball with a List	L+D, PS	BB/PPT	1	21	5/7/2023	
24	List-like Types: Strings and Tuples, References	L+D, PS	BB/PPT	1	22	6/7/2023	
	Module 2: Laboratory Experiment						
25	a. Develop a program to generate Fibonacci sequence of length (N). Read N from the console. b. Write a function to calculate factorial of a number. Develop a program to compute binomial coefficient (Given N and R).	L+D, PS	LCD	LabSession- 2HR	6	3/7/2023 4/7/2023 6/7/2023	

26	Dictionaries and Structuring Data: The Dictionary Data Type	L+D, PS	BB/PPT	1	23	7/7/2023	
27	Pretty Printing	L+D, PS	BB/PPT	1	24	8/7/2023	
28	Using Data Structures to Model Real-World Things	L+D, PS	BB/PPT	1	25	11/7/2023	
Module 3: Manipulating Strings & Reading and Writing Files							
29	Module 3: Manipulating Strings: Working with Strings	L+D, PS	BB/PPT	1	26	12/7/2023	
30	Working with Strings, Useful String Methods	L+D, PS	BB/PPT	1	27	13/7/2023	
31	Working with Strings, Useful String Methods	L+D, PS	BB/PPT	1	28	14/7/2023	
32	Project: Password Locker,	L+D, PS	BB/PPT	1	29	18/7/2023	
33	Project: Password Locker,	L+D, PS	BB/PPT	1	30	19/7/2023	
34	Project: Adding Bullets to Wiki Markup	L+D, PS	BB/PPT	1	31	20/7/2023	
35	Project: Adding Bullets to Wiki Markup	L+D, PS	BB/PPT	1	32	21/7/2023	
36	Reading and Writing Files: Files and File Paths	L+D, PS	BB/PPT	1	33	22/7/2023	
37	The os.path Module	L+D, PS	BB/PPT	1	34	25/7/2023	
38	The File Reading/Writing Process	L+D, PS	BB/PPT	1	35	26/7/2023	
39	Saving Variables with the shelve Module	L+D, PS	BB/PPT	1	36	27/7/2023	
40	Module 3: Laboratory Experiment a. Read N numbers from the console and create a list. Develop a program to print mean, variance and standard deviation with suitable messages. b. Read a multi-digit number (as chars) from the console. Develop a program to print the frequency of each digit with suitable message.	L+D, PS	LCD	LabSession- 2HR	6	24/7/2023 25/7/2023 27/7/2023	
41	Saving Variables with the print.Format () Function,	L+D, PS	BB/PPT	1	37	28/7/2023	
42	Project: Generating Random Quiz Files	L+D, PS	BB/PPT	1	38		
43	INTERNAL ASSESSMENT 2						2/8/2023

44	Project: Multiclipboard	L+D, PS	BB/PPT	1	39	3/8/2023
Module 4: Organizing Files & Debugging						
45	Module 4: Organizing Files: The shutil Module	L+D, PS	BB/PPT	1	40	4/8/2023
46	Walking a Directory Tree	L+D, PS	BB/PPT	1	41	8/8/2023
Module 4: Laboratory Experiment						
47	<p>a) Develop a program to print 10 most frequently appearing words in a text file. [Hint: Use dictionary with distinct words and their frequency of occurrences. Sort the dictionary in the reverse order of frequency and display dictionary slice of first 10 items]</p> <p>b) Develop a program to sort the contents of a text file and write the sorted contents into a separate text file. [Hint: Use string methods strip (), len (), list methods sort (), append (), and file methods open (),readlines (), and write ()].</p> <p>c) Develop a program to backing Up a given Folder (Folder in a current working directory) into a ZIP File by using relevant modules and suitable methods.</p> <p>d) Write a function named DivExp which takes TWO parameters a, b and returns a value c (c=a/b). Write suitable assertion for a>0 in function DivExp and raise an exception for when b=0. Develop a suitable program which reads two values from the console and calls a function DivExp.</p>	L+D, PS	LCD	LabSession- 2HR	6	7/8/2023 8/8/2023 10/8/2023
48	Compressing Files with the zipfile Module,	L+D, PS	BB/PPT	1	42	9/8/2023
49	Project: Renaming Files with American-Style Dates to European-Style Dates,	L+D, PS	BB/PPT	1	43	10/8/2023
50	Project: Renaming Files with American-Style Dates to European-Style Dates,	L+D, PS	BB/PPT	1	44	11/8/2023
51	Project: Backing Up a Folder into a ZIP File,	L+D, PS	BB/PPT	1	45	16/8/2023
52	Project: Backing Up a Folder into a ZIP File,	L+D, PS	BB/PPT	1	46	17/8/2023
53	Debugging: Raising Exceptions	L+D, PS	BB/PPT	1	47	18/8/2023
Module 5: Laboratory Experiment						
54	a. Define a function which takes TWO objects representing complex numbers and returns new complex number with a addition of two complex numbers. Define a suitable class 'Complex' to represent the complex number. Develop a program	L+D, PS	LCD	LabSession- 2HR	6	21/8/2023 22/8/2023 24/8/2023

to read N ($N \geq 2$) complex numbers and to compute the addition of N complex numbers.
 b. Develop a program that uses class Student which prompts the user to enter marks in three subjects and calculates total marks, percentage and displays the score card details. [Hint: Use list to store the marks in three subjects and total marks. Use `list` to method to initialize name, USN and the lists to store marks and total, Use `getMarks()` method to read marks into the list, and `display()` method to display the score card details.]

55	Getting the Traceback as a String	L+D, PS	BB/PPT	1	48	22/8/2023
56	Assertions, Logging, IDLEs Debugger	L+D, PS	BB/PPT	1	49	23/8/2023

Module 5: Classes and objects, Classes and functions and Classes and methods

57	Module 5: Classes and objects: Programmer-defined types	L+D, PS	BB/PPT	1	50	24/8/2023
58	Attributes, Rectangles	L+D, PS	BB/PPT	1	51	25/8/2023
59	Instances as return values, Objects are mutable, Copying	L+D, PS	BB/PPT	1	52	29/8/2023
60	Classes and functions: Time, Pure functions	L+D, PS	BB/PPT	1	53	30/8/2023

INTERNAL ASSESSMENT - 3

61						2/9/2023
62	Modifiers, Prototyping versus planning	L+D, PS	BB/PPT	1	54	5/9/2023
63	Classes and methods: Object-oriented features	L+D, PS	BB/PPT	1	55	6/9/2023
64	Printing objects, Another example, A more complicated example	L+D, PS	BB/PPT	1	56	7/9/2023
65	The init method, The <code>__str__</code> method	L+D, PS	BB/PPT	1	57	8/9/2023
66	Operator overloading, Type-based dispatch, Polymorphism, Interface and implementation	L+D, PS	BB/PPT	1	58	9/9/2023

Text Books:

1. Al Sweigart, "Automate the Boring Stuff with Python", 1st Edition, No Starch Press, 2015. (Available under CC-BY-NC-SA license at <https://automatetheboringstuff.com/>) (Chapters 1 to 18, except 12) for lambda functions use this link: <https://www.learnbyexample.org/python-lambda-function/>
2. Allen B. Downey, "Think Python: How to Think Like a Computer Scientist", 2nd Edition, Green Tea Press, 2015. (Available under CC-BY-NC license at <http://greenteapress.com/thinkpython2/thinkpython2.pdf>) (Chapters 13, 15, 16, 17, 18) (Download pdf/html files from the above link)

Web links and Video Lectures (e-Resources):

1. <https://www.learnbyexample.org/python/>
2. <https://www.learnpython.org/>
3. <https://pythontutor.com/visualize.html#mode=edit>


Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

- Quizzes for list, tuple, string dictionary slicing operations using below link:
https://github.com/sushankkhara/Data-Structures-And-Algorithms-withPython/raw/main/Python%203%20_%20400%20exercises%20and%20solutions%20for%20beginners.pdf

Details of the teaching aids: Chalk and talk, videos, ppt, animations, NPTEL videos, NPTEL lectures etc.,


Course Incharge


Module coordinator

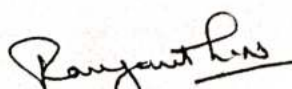

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Principal

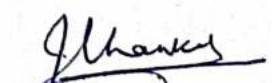
			Design solutions for environmental considerations	
CO4: Apply the conversion principles to use wind biomass energy resources.				
13	CO4	1	The students will able to gain the Knowledge Of Mathematics Knowledge Of Science, Knowledge In Specific Engg. Problem & To Find Solution	3
14		2	The students will able to Identify Formulate Analyse Complex Engineering Problems	2
15		6	The students will be able to Use the knowledge of renewable energy in betterment of engineer and society	2
16		7	The students will able to Identify Formulate Analyse Complex Engineering Problems	3
CO5: Apply the concept of and tidal energy and. ocean thermal energy to generate renewable energy.				
17	CO5	1	The students will able to gain Knowledge Of Mathematics Knowledge In Specific Engg. Problem & To Find Solution	3
18		2	The students will able to Identify Formulate Analyse Complex Engineering Problems	2
19		6	The students will be able to Use the knowledge of renewable energy in betterment of engineer and society	2
20		7	The students will able to Design Solutions for Public Health & Safety Design Solutions for Cultural & Societal Issues. Design Solutions for Environmental Considerations	2

CO PO mapping for the events conducted after gap identification


Sl. No.	Gap Identification	Activity Planned to fill the gap	CO	Relevant PO Mapping
1	PO9- PO10	Quiz, Seminar and report preparation	CO1, CO2, CO3, CO4, CO5	PO9, PO10

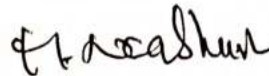

Signature of Course In-charge



Signature of Module Coordinator


Signature of Head of the Department
Head of the Department
Dept. of Mechanical Engg.
K.S. Institute of Technology
Mysuru - 560 109.

Sl. No.	Gap Identification	Activity Planned to fill the gap	CO	Relevant PO Mapping
1	PO2, PO5, PO12	Quiz	CO1, CO2, CO3, CO4, CO5	PO2, PO5, PO12


Signature of Course In-charge


Signature of Module Coordinator


Signature of HOD/ME
Head of the Department
Dept. of Mechanical Engg.
K.S. Institute of Technology
Bengaluru - 560 109.



K.S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF APPLIED SCIENCE AND HUMANITIES
LESSON PLAN 2022-2023 ODD SEMESTER

COURSE INCHARGE : Dr. GIRISH TR

COURSE CODE/TITLE : INTEGRATED/BPLCK205B/INTRODUCTION TO PYTHON PROGRAMMING

YEAR/SEMESTER/SECTION : I/II/E

BRANCH : AIML

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: Python Basics						
1	Python Basics: Entering Expressions into the Interactive Shell,	L+D,PS	BB/PPT	1	1	25.05.2023
2	The Integer, Floating-Point, and String Data Types,	L+D,PS	BB/PPT	1	2	29.05.2023
3	String Concatenation and Replication, Storing Values in Variables	L+D,PS	BB/PPT	1	3	30.05.2023
4	Your First Program, Dissecting Your Program,	L+D,PS	BB/PPT	1	4	31.05.2023
5	Flow control: Boolean Values, Comparison Operators,	L+D,PS	BB/PPT	1	5	2.06.2023
6	Boolean Operators, Mixing Boolean and Comparison Operators	L+D,PS	BB/PPT	1	6	5.06.2023
7	Elements of Flow Control, Program Execution,	L+D,PS	BB/PPT	1	7	6.06.2023
8	Flow Control Statements, Importing Modules	L+D, PS	BB/PPT	1	8	7.06.2023
9	Ending a Program Early with sys.exit()	L+D, PS	BB/PPT	1	9	9.06.2023
10	Functions: def Statements with Parameters	L+D, PS	BB/PPT	1	10	10.06.2023

11	Return Values and return Statements	L+D, PS	BB/PPT	1	11	12.06.2023
12	The None Value, Keyword Arguments and print(),	L+D, PS	BB/PPT	1	12	13.06.2023
13	Local and Global Scope,	L+D, PS	BB/PPT	1	13	14.06.2023
14	The global Statement	L+D, PS	BB/PPT	1	14	16.06.2023
15	Module 1: Laboratory Experiment a. Develop a program to read the student details like Name, USN, and Marks in three subjects. Display the student details, total marks and percentage with suitable messages b. Develop a program to read the name and year of birth of a person. Display whether the person is a senior citizen or not.	L+D, PS	LCD	LabSession-2HR	2	25.05.2023 29.05.2023 30.05.2023 1.06.2023 5.06.2023 6.06.2023
16	Exception Handling	L+D, PS	BB/PPT	1	15	19.06.2023
17	A Short Program: Guess the Number	L+D, PS	BB/PPT	1	16	20.06.2023
Module 2: Lists & Dictionaries and Structuring Data						
18	Module 2:Lists: The List Data Type, Working with Lists	L+D, PS	BB/PPT	1	17	21.06.2023
19	The List Data Type, Working with Lists	L+D, PS	BB/PPT	1	18	23.06.2023
20	The List Data Type, Working with Lists	L+D, PS	BB/PPT	1	19	24.06.2023
21	INTERNAL ASSESSMENT – 1					27.06.2023
22	Augmented Assignment Operators, methods	L+D, PS	BB/PPT	1	20	30.06.2023
23	Example Program: Magic 8 Ball with a List	L+D, PS	BB/PPT	1	21	3.07.2023
24	List-like Types: Strings and Tuples, References	L+D, PS	BB/PPT	1	22	4.07.2023
25	Dictionaries and Structuring Data: The Dictionary Data Type	L+D, PS	BB/PPT	1	23	5.07.2023
26	Module 2: Laboratory Experiment a. Develop a program to generate Fibonacci sequence of length (N). Read N from the console. b. Write a function to calculate factorial of a number. Develop a	L+D, PS	LCD	LabSession-2HR	2	8.06.2023 12.06.2023 13.06.2023 15.06.2023

	program to compute binomial coefficient (Given N and R).					19.06.2023 20.06.2023
27	Pretty Printing	L+D, PS	BB/PPT	1	24	7.07.2023
28	Using Data Structures to Model Real-World Things	L+D, PS	BB/PPT	1	25	8.07.2023
Module 3: Manipulating Strings & Reading and Writing Files						
29	Module 3: Manipulating Strings: Working with Strings	L+D, PS	BB/PPT	1	26	10.07.2023
30	Working with Strings, Useful String Methods	L+D, PS	BB/PPT	1	27	11.07.2023
31	Working with Strings, Useful String Methods	L+D, PS	BB/PPT	1	28	12.07.2023
32	Project: Password Locker,	L+D, PS	BB/PPT	1	29	14.07.2023
33	Project: Password Locker,	L+D, PS	BB/PPT	1	30	17.07.2023
34	Project: Adding Bullets to Wiki Markup	L+D, PS	BB/PPT	1	31	18.07.2023
35	Project: Adding Bullets to Wiki Markup	L+D, PS	BB/PPT	1	32	19.07.2023
36	Reading and Writing Files: Files and File Paths	L+D, PS	BB/PPT	1	33	21.07.2023
37	The os.path Module	L+D, PS	BB/PPT	1	34	22.07.2023
39	The File Reading/Writing Process	L+D, PS	BB/PPT	1	35	24.07.2023
40	Saving Variables with the shelve Module	L+D, PS	BB/PPT	1	36	25.07.2023
41	Module 3: Laboratory Experiment a. Read N numbers from the console and create a list. Develop a program to print mean, variance and standard deviation with suitable messages. b. Read a multi-digit number (as chars) from the console. Develop a program to print the frequency of each digit with suitable message.	L+D, PS	LCD	LabSession- 2HR	4	22.06.2023 3.07.2023 4.07.2023 6.07.2023 10.07.2023 11.07.2023
42	Saving Variables with the print. Format () Function,	L+D, PS	BB/PPT	1	37	26.07.2023
43	Project: Generating Random Quiz Files	L+D, PS	BB/PPT	1	38	28.07.2023
44	INTERNAL ASSESSMENT - 2					1.08.2023

45	Project: Multiclipboard	L+D, PS	BB/PPT	1	39	3.08.2023
Module 4: Organizing Files & Debugging						
46	Module 4: Organizing Files: The shutil Module	L+D, PS	BB/PPT	1	40	4.08.2023
47	Walking a Directory Tree	L+D, PS	BB/PPT	1	41	5.08.2023
48	<p>Module 4: Laboratory Experiment</p> <p>a) Develop a program to print 10 most frequently appearing words in a text file. [Hint: Use dictionary with distinct words and their frequency of occurrences. Sort the dictionary in the reverse order of frequency and display dictionary slice of first 10 items]</p> <p>b) Develop a program to sort the contents of a text file and write the sorted contents into a separate text file. [Hint: Use string methods strip (), len (), list methods sort (), append (), and file methods open (),readlines (), and write ()].</p> <p>c) Develop a program to backing Up a given Folder (Folder in a current working directory) into a ZIP File by using relevant modules and suitable methods.</p> <p>d) Write a function named DivExp which takes TWO parameters a, b and returns a value c ($c=a/b$). Write suitable assertion for $a>0$ in function DivExp and raise an exception for when $b=0$. Develop a suitable program which reads two values from the console and calls a function DivExp.</p>	L+D, PS	LCD	LabSession-2HR	4	13.07.2023 17.07.2023 18.07.2023 20.07.2023 22.07.2023 24.07.2023
49	Compressing Files with the zipfile Module,	L+D, PS	BB/PPT	1	42	7.08.2023
50	Project: Renaming Files with American-Style Dates to European-Style Dates,	L+D, PS	BB/PPT	1	43	8.08.2023
51	Project: Renaming Files with American-Style Dates to European-Style Dates,	L+D, PS	BB/PPT	1	44	9.08.2023
52	Project: Backing Up a Folder into a ZIP File,	L+D, PS	BB/PPT	1	45	11.08.2023
53	Project: Backing Up a Folder into a ZIP File,	L+D, PS	BB/PPT	1	46	14.08.2023
54	Debugging: Raising Exceptions	L+D, PS	BB/PPT	1	47	16.08.2023
55	Getting the Traceback as a String	L+D, PS	BB/PPT	1	48	18.08.2023
56	Assertions, Logging, IDLEs Debugger	L+D, PS	BB/PPT	1	49	19.08.2023

Module 5: Classes and objects, Classes and functions and Classes and methods

57	Module 5: Classes and objects: Programmer-defined types	L+D, PS	BB/PPT	1	50	21.08.2023
58	Attributes, Rectangles	L+D, PS	BB/PPT	1	51	22.08.2023
59	Instances as return values, Objects are mutable, Copying	L+D, PS	BB/PPT	1	52	23.08.2023
60	Classes and functions: Time, Pure functions	L+D, PS	BB/PPT	1	53	25.08.2023
61	Modifiers, Prototyping versus planning	L+D, PS	BB/PPT	1	54	28.08.2023
62	Classes and methods: Object-oriented features	L+D, PS	BB/PPT	1	55	29.08.2023
63	Printing objects, Another example, A more complicated example	L+D, PS	BB/PPT	1	56	30.08.2023
64	INTERNAL ASSESSMENT - 3					1.09.2023
65	The init method, The __str__ method	L+D, PS	BB/PPT	1	57	4.09.2023
66	Operator overloading, Type-based dispatch	L+D, PS	BB/PPT	1	58	5.09.2023
67	Polymorphism, Interface and implementation	L+D, PS	BB/PPT	1	59	6.09.2023
68	Module 5: Laboratory Experiment a. Define a function which takes TWO objects representing complex numbers and returns new complex number with a addition of two complex numbers. Define a suitable class 'Complex' to represent the complex number. Develop a program to read N (N >=2) complex numbers and to compute the addition of N complex numbers. b. Develop a program that uses class Student which prompts the user to enter marks in three subjects and calculates total marks, percentage and displays the score card details. [Hint: Use list to store the marks in three subjects and total marks. Use __init__() method to initialize name, USN and the lists to store marks and total, Use getMarks() method to read marks into the list, and display() method to display the score card details.]	L+D, PS	LCD	LabSession-2HR	2	27.07.2023 3.08.2023 7.08.2023 8.08.2023 10.08.2023 14.08.2023
69	Revision	L+D, PS	BB/PPT	1	60	8.09.2023
70	Lab Revision	L+D, PS	LCD	LabSession-2HR	2	17.08.2023 21.08.2023 22.08.2023

71	Lab Revision	L+D, PS	LCD	LabSession-2HR	2	24.08.2023 28.08.2023 29.08.2023
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Text Books:

1. Al Sweigart, "Automate the Boring Stuff with Python", 1st Edition, No Starch Press, 2015. (Available under CC-BY-NC-SA license at <https://automatetheboringstuff.com/>) (Chapters 1 to 18, except 12) for lambda functions use this link <https://www.learnbyexample.org/python-lambda-function/>
2. Allen B. Downey, "Think Python: How to Think Like a Computer Scientist", 2nd Edition, Green Tea Press, 2015. (Available under CC-BY-NC-SA license at <http://greenteapress.com/thinkpython2/thinkpython2.pdf>) (Chapters 13, 15, 16, 17, 18) (Download pdf/html files from the above link)

Web links and Video Lectures (e-Resources):

1. <https://www.learnbyexample.org/python/>
2. <https://www.learnpython.org/>
3. <https://pythontutor.com/visualize.html#mode=edit>

Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

- Quizzes for list, tuple, string dictionary slicing operations using below link: <https://github.com/sushantkhar/Data-Structures-And-Algorithms-with-Python/raw/main/Python%20-%20400%20exercises%20and%20solutions%20for%20beginners.pdf>

Details of the teaching aids: Chalk and talk, videos, ppt, animations, NPTEL videos, NPTEL lectures etc.,

G. S.
Course Incharge

H. S.
Module coordinator

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S. M.
Principal
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K S INSTITUTE OF TECHNOLOGY BANGALORE
DEPARTMENT OF APPLIED SCIENCE & HUMANITIES
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : MANJUNATHA.B.R
COURSE TYPE / CODE / TITLE : Theory / BSFHK258 / Scientific Foundations of Health
YEAR/ SEMESTER/SECTION : I / II / J
BRANCH : **Mechanical Engineering**

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Good Health & Its balance for positive mindset						
1	Health -Importance of Health, Advantages of good health, Health beliefs	L+D	BB	1	1	31/05/2023
2	Influencing factors of Health , Health & Behavior, Health & Society, Health & family, Health & Personality	L+ D	BB	1	2	07/06/2023
3	Psychological disorders -Methods to improve good psychological health, Changing health habits for good health.	L+ D	BB	1	3	10/06/2023
MODULE 2: Building of healthy lifestyles for better future						
4	Developing healthy diet for good health, Food & health, Nutritional guidelines for good health, Obesity & overweight disorders and its management, eating disorders	L+V	LCD	1	4	14/06/2023

5	Fitness components for health, Wellness and physical function, how to avoid exercise injuries	L+V	LCD	1	5	21/06/2023
6	Activity/ Quiz	L+D	Discussions	1	6	05/07/2023
MODULE 3: Creation of Healthy and caring relationships						
7	Building communication skills , Friends and friendship – Education, the value of relationship and communication skills, Relationships for Better or worsening of life	L+V	LCD	1	7	08/07/2023
8	Understanding of basic instincts of life (more than a biology), Changing health behaviors through social engineering	L+V	LCD	1	8	12/07/2023
9	Activity/ Quiz	L+D	Discussions	1	9	19/07/2023
MODULE 4: Avoiding risks and harmful habits						
10	Characteristics of health compromising behaviors, Recognizing and avoiding of addictions, how addiction develops,	L+V	LCD	1	10	26/07/2023
11	Types of addictions , influencing factors of addictions, Differences between addictive people and non addictive people & their behaviors.	L+V	LCD	1	11	09/08/2023
12	Differences between addictive people and non addictive people & their behaviors, Effects of addictions Such as..., how to recovery from addictions	L+V	LCD	1	12	16/08/2023

MODULE 5: Preventing & fighting against diseases for good health

13	How to protect from different types of infections and to reduce risks for good health, Reducing risks & coping with chronic conditions	L+V	LCD	1	13	23/08/2023
14	Management of chronic illness for Quality of life, Health & Wellness of youth: a challenge for upcoming future, Measuring of health & wealth status	L+V	LCD	1	14	30/08/2023
15	Activity/ Quiz	L+D	Discussions	1	15	06/09/2023

Text Books:

1. “Scientific Foundations of Health” – Study Material Prepared by Dr. L Thimmesha, Published in VTU - University Website.
2. “Scientific Foundations of Health”, (ISBN-978-81-955465-6-5) published by Infinite Learning Solutions, Bangalore – 2022.
3. Health Psychology - A Textbook, FOURTH EDITION by Jane Ogden McGraw Hill Education (India) Private Limited - Open University Press.

Reference Books:

1. Health Psychology (Second edition) by Charles Abraham, Mark Conner, Fiona Jones and Daryl O’Connor – Published by Routledge 711 Third Avenue, New York, NY 10017.
2. HEALTH PSYCHOLOGY (Ninth Edition) by SHELLEY E. TAYLOR - University of California, Los Angeles, McGraw Hill Education (India) Private Limited - Open University Press.
3. SWAYAM / NPTL/ MOOCS/ We blinks/ Internet sources/ YouTube videos and other materials / notes.
4. Scientific Foundations of Health (Health & Wellness) - General Books published for university and colleges references by popular authors and published by the reputed publisher.

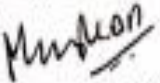
Web Materials:

Weblinks and Video Lectures (e-Resources):

- <https://youtube.com/@sfhworld465>

Details for the teaching Aids

Black Board, Discussions


Course In-Charge


Module Coordinator


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K S INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : Dr. Girish TR

COURSE TITLE/CODE : MATERIAL SCIENCE AND ENGINEERING 21ME33

YEAR/ SEMESTER/SECTION : II / III

BRANCH : MECHANICAL ENGINEERING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE I: Structure of Materials						
1	Structure of Materials Introduction	L+D,PS	LCD	1	1	2-12-2022
2	Introduction: Classification of materials,	L+D,PS	LCD	1	2	6-12-2022
3	crystalline and non-crystalline solids, atomic bonding	L+D,PS	LCD	1	3	7-12-2022
4	Geometrical Crystallography: Symmetry elements	L+D,PS	LCD	1	4	7-12-2022
5	the operation of rotation, Proper and Improper rotation axes	L+D,PS	LCD	1	5	9-12-2022
6	Screw axes, Glide planes	L+D,PS	LCD	1	6	13-12-2022
7	Crystal Structure: Crystal Lattice, Unit Cell, Planes and directions in a lattice, Planar Atomic Density, packing of atoms, packing fraction,	L+D,PS	LCD	1	7	14-12-2022
8	Classification and Coordination of voids, Bragg's Law	L+D,PS	LCD	1	8	14-12-2022

9	Imperfections in Solids: Types of imperfections, Point defects: vacancies, interstitials, line defects,	L+D,PS	LCD	1	9	16-12-2022
10	2-D and 3D-defects, Concept of free volume in amorphous solids.	L+D,PS	LCD	1	10	20-12-2022
MODULE 2: Physical Metallurgy						
11	Alloy Systems: Classification of Solid solutions, Hume-Rothery Rules	L+D,PS	LCD	1	11	21-12-2022
12	Phase Diagrams: Gibbs Phase Rule, Solubility limit, phase equilibria and Phase Diagrams: Isomorphous systems, Invariant	L+D,PS	LCD+BB	1	12	21-12-2022
13	Binary Reactions, Lever Rule; important phase- diagrams ,	L+D,PS	LCD	1	13	23-12-2022
14	phase- diagrams Continued	L+D,PS	LCD	1	14	27-12-2022
15	phase- diagrams Continued	L+D,PS	LCD	1	15	28-12-2022
16	phase- diagrams Continued	L+D,PS	LCD	1	16	28-12-2022
17	Iron-Carbon Diagram -	L+D,PS	LCD	1	17	30-12-2022
18	Numerical problems on phase diagrams	L+D,PS	LCD	1	18	3-01-2023
19	Diffusion: Diffusion-Fick's Laws	L+D,PS	LCD	1	19	4-01-2023
20	Role of imperfections in diffusion	L+D,PS	LCD	1	20	4-01-2023
MODULE 3: Nucleation and growth						
21	Introduction to homogeneous and heterogeneous nucleation	L+D,PS	LCD	1	21	6-01-2023
22	critical radius for nucleation.	L+D,PS	LCD+BB	1	22	10-01-2023
23	Plastic Deformation: Slip, Twinning;	L+D,PS	LCD	1	23	11-01-2023

24	Recovery- Recrystallization-Grain Growth	L+D,PS	LCD	1	24	11-01-2023
25	Introduction to Strengthening Mechanisms	L+D,PS	LCD	1	25	13-01-2023
IA -I 19-01-2023						
26	Lever rule and phase diagram	L+D,PS	LCD	1	26	24-01-2023
27	Heat treatment: Annealing, Normalizing, hardening, Tempering, Nitriding, Cyaniding	L+D,PS	LCD	1	27	25-01-2023
28	Heat treatment continued	L+D,PS	LCD	1	28	25-01-2023
29	Heat treatment continued	L+D,PS	LCD	1	29	27-01-2023
30	Induction Hardening and Flame Hardening, Recent advances in heat treat technology.	L+D,PS	LCD	1	30	31-01-2023
31	TTT diagram, microstructural effects brought about by these processes and their influence on mechanical properties	L+D,PS	LCD	1	30	1-02-2023
MODULE 4: Surface coating technologies						
32	Introduction, coating materials, coating technologies, types of coating,	L+D,PS	LCD	1	32	1-02-2023
33	advantages and disadvantages of surface coating,	L+D,PS	LCD	1	33	3-02-2023
34	Powder metallurgy: Introduction, Powder Production Techniques:	L+D,PS	LCD	1	34	7-02-2023
35	Different Mechanical and Chemical methods,	L+D,PS	LCD	1	35	8-02-2023
36	Characterization of powders (Particle Size & Shape Distribution), Powder Shaping	L+D,PS	LCD	1	36	8-02-2023
37	Particle Packing Modifications, Lubricants & Binders,	L+D,PS	LCD	1	37	10-02-2023
38	Powder Compaction & Process,	L+D,PS	LCD	1	38	14-02-2023
39	Powder Compaction & Process, continued	L+D,PS	LCD	1	39	15-02-2023

40	Sintering and Application of Powder Metallurgy.	L,D,P	LCD	1	40	15-02-2023
41	Sintering and Application of Powder Metallurgy – Continued	L,D,P	LCD	1	41	17-02-2023

IA -2 21-02-2023

MODULE 5: Materials Selection

42	The need for material selection in design, the evolution of Engineering materials	L,D,P	LCD	1	42	24-02-2023
43	The Design Process and Materials Data: Types of design,	L,D,P	LCD	1	43	28-02-2023
44	Design tools and materials data, processes of obtaining materials data, materials databases.	L,D,P	LCD	1	44	1-03-2023
45	Engineering Materials and Their Properties	L,D,P	LCD	1	45	1-03-2023
46	The classes of engineering materials and their structure, material properties	L,D,P	LCD	1	46	3-03-2023
47	Mechanical properties, functional properties	L,D,P	LCD	1	47	7-03-2023
48	Material Selection Charts: Selection criteria for materials,	L,D,P	LCD	1	48	8-03-2023
49	Material property Charts, deriving property limits	L,D,P	LCD	1	49	8-03-2023
50	Material property Charts, deriving property limits- Continued	L,D,P	LCD	1	50	10-03-2023
51	Material property Charts, deriving property limits-Continued	L,D,P	BB	1	51	14-03-2023
52	Material indices, materials indices which include shape.	L,D,P	BB	1	52	15-03-2023

IA -3 23-3-2023

Text Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)

- Ashby, M.F. (2010), Materials Selection in Mechanical Design, 4th Edition, Butterworth-Heinemann
- Azarov, I. V., (2001) Introduction to solids, 1st Edition, McGraw Hill Book Company.
- Avner, S.H., (2017), Introduction to Physical Metallurgy, 2nd Edition, McGraw Hill Education

- Powder Metallurgy Technology, Cambridge International Science Publishing,2002.

Reference Books:

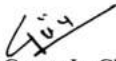
- Jones, D.R.H., and Ashby,M.F., (2011), Engineering Materials 1: An Introduction to Properties, Application and Design, 4th Edition, Butterworth-Heinemann
- Callister Jr, W.D., Rethwisch, D.G., (2018), Materials Science and Engineering: An Introduction, 10th Edition, Hoboken, NJ: Wiley.

Web Materials:

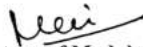
- Bhattacharya,B., Materials Selection and Design, NPTEL Course Material, Department of Mechanical Engineering, Indian Institute of Technology Kanpur, <http://nptel.ac.in/courses/112104122/>

Details of the teaching aids:

1.PPT & Video presentation



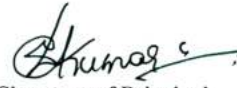
Signature of Course In-Charge



Signature of Module Coordinator



Signature of HOD



Signature of Principal

Department of Mechanical Engg.
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K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF MECHANICAL ENGINEERING
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : TEJASWINI ML
COURSE TYPE / CODE / TITLE : Theory/21ME44/Mechanics of materials
YEAR/ SEMESTER : 2023
BRANCH : MECHANICAL ENGINEERING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1:						
1	Module – 1 Introduction	L+PPT	BB	1	1	17.5.2023
2	Mechanical properties of materials	L+PPT	PPT	1	2	18.5.2023
3	Stress and its types, strain and its types, hooke's law	L+PPT	PPT	1	3	19.5.2023
4	Stress strain curve for mild steel and brittle materials.	L+PPT	PPT	1	4	22.5.2023
5	Numerical on stresses on straight bars	L+PPT	PPT	1	5	22.5.2023
6	Numerical on stepped bars	L+PPT	PPT	1	6	24.5.2023
7	Derivation on deformation of tapering bars with width a and b	L+PPT	PPT	1	7	29.5.2023

8	Derivation on deformation of tapering bars with diameter d_1 and d_2	L+PPT	PPT	1	8	31.5.2023
9	Numerical on above topic	L+PPT	PPT	1	9	1.6.2023
10	Numerical on above topic	L+PPT	PPT	1	10	2.6.2023
11	Numerical on above topic	L+PPT	PPT	1	11	5.6.2023
12	Numerical on composite sections	L+D	BB	1	12	6.6.2023
13	Numerical on composite sections	L+D	BB	1	13	7.6.2023
14	Numerical on composite sections	L+PPT	PPT	1	14	8.6.2023
15	Elastic constants, young's modulus, shear modulus, bulk modulus, poissons ratio.	L+PPT	PPT	1	15	9.6.2023
16	Numerical on elastic constants	L+D	BB	1	16	10.6.2023
17	Derivation of elastic constants : G,E K.	L+D	BB	1	17	12.6.2023
18	Numerical on elastic constants	L+D	BB	1	18	12.6.2023
19	Numerical on elastic constants	L+D	BB	1	19	14.6.2023
20	Numerical on elastic constants	L+D	BB	1	20	15.6.2023
21	Numerical on elastic constants	L+D	BB	1	21	16.6.2023
22	Module 2: Stress and strain of three dimensional state of stresses.	L+D	BB	1	22	19.6.2023
23	Stresses on inclined planes.	L+D	BB	1	23	19.6.2023
24	Principal stresses and maximum shear stresses				24	20.6.2023
23	Numerical on principle stresses	L+D	BB	1	25	21.6.2023
25	Numerical on principle stresses	L+D	BB	1	26	22.6.2023
26	Maximum and minimum shear stresses	L+D	BB	1	27	23.6.2023

27	Mohr circle for plane stress condition	L+D	BB	1	28	24.6.2023
28	Numerical on Mohr circle for plane stress condition	L+D	BB	1	29	26.6.2023-28.6.2023
29	Numerical on major and minor principle stress	L+D	BB	1	30	30.6.2023
30	Numerical on major and minor principle stress	L+D	BB	1	31	3.7.2023
31	Numerical on major and minor principle stress	L+D	BB	1	32	3.7.2023
32	Numerical on mohr circle	L+D	BB	1	33	5.7.2023
33	Numerical on mohr circle	L+D	BB	1	34	6.7.2023
34	Numerical on mohr circle	L+D	BB	1	35	7.7.2023
35	Numerical on mohr circle	L+D	BB	1	36	8.7.2023
36	Module 3 Shear force diagram and bending moment diagram	L+D	BB	1	37	10.7.2023
37	Types of supports, Types of beams	L+D	BB	1	38	10.7.2023
38	Types of loads acting on beams	L+D	BB	1	39	12.7.2023
39	Relationship between shear force, bending moment and load intensity	L+D	BB	1	40	13.7.2024
40	Determinate and indeterminate structure	L+D	BB	1	41	14.7.2024
41	Numerical on cantilever beams	L+D	BB	1	42	17.7.2023
42	Numerical on cantilever beams	L+D	BB	1	43	17.7.2023
43	Numerical on cantilever beams				44	19.7.2023
44	Numerical on cantilever beams	L+D	BB	1	45	20.7.2023
45	Numerical on cantilever beams	L+D	BB	1	46	21.7.2023
46	Numerical on simply supported beams	L+D	BB	1	47	22.7.2023

47	Numerical on simply supported beams	L+D	BB	1	48	24.7.2023
48	Numerical on simply supported beams	L+D	BB	1	49	24.7.2023
49	Numerical on simply supported beams	L+D	BB	1	50	26.7.2023
50	Numerical on simply supported beams	L+D	BB	1	51	27.7.2023
51	Numerical on simply supported beams	L+D	BB	1	52	28.7.2023
52	Numerical on simply supported beams	L+D	BB	1	53	31.7.2023 - 2.8.2023
53	Numerical on simply supported beams	L+D	BB	1	54	3.8.2023
54	Derivation on Bending equation $M/I=f/y=E/R$	L+D	BB	1	55	4.8.2023
55	Numerical on bending equation	L+D	BB	1	56	5.8.2023
56	Numerical on bending equation	L+D	BB	1	57	7.8.2023
57	Numerical on bending equation	L+D	BB	1	58	7.8.2023
58	Numerical on bending equation	L+D	BB	1	59	9.8.2023
59	Module 4- Introduction to deflection of beams	L+D	BB	1	60	10.8.2023
60	Numerical on deflection equation	L+D	BB	1	61	11.8.2023
61	Numerical on deflection equation			1	62	14.8.2023
62	Numerical on deflection equation	L+D	BB	1	63	14.8.2023
63	Derivation on torsion equation	L+D	BB	1	64	16.8.2023
64	Moment of inertia, section modulus, rigidity modulus	L+D	BB	1	65	17.8.2023
65	Numerical on torsion	L+D	BB	1	66	18.8.2023
66	Numerical on torsion	L+D	BB	1	67	19.8.2023

67	Numerical on torsion	L+D	BB	1	68	21.8.2023
68	Numerical on torsion	L+D	BB	1	69	21.8.2023
69	Module -5 Column and strut	L+D	BB	1	70	23.8.2023
70	Derivation of crippling load of columns with both ends hinged	L+D	BB	1	71	24.8.2023
71	Derivation of crippling load of columns with both ends fixed	L+D	BB	1	72	25.8.2023
72	Derivation of crippling load of columns with one end hinged and other end free	L+D	BB	1	73	28.6.2023
73	Numerical on above topic	L+D	BB	1	74	28.6.2023
74	Numerical on above topic	L+D	BB	1	75	30.8.2023
75	Numerical on above topic	L+D	BB	1	76	31.8.2023
76	Numerical on above topic	L+D	BB	1	77	1.9.2023
77	Numerical on above topic	L+D	BB	1	78	2.9.2023
78	Numerical on above topic	L+D	BB	1	79	4.9.2023
79	Introduction to strain energy	L+D	BB	1	80	4.9.2023
80	Strain energy due to axial load and numerical.	L+D	BB	1	81	6.9.2023- 8.9.2023
81	Strain energy due to torsion and shear load and numerical.	L+D	BB	1	82	14.9.2023
82	Strain energy due to impact load and numerical.	L+D	BB	1	83	15.9.2023
83	Revision	L+D	BB	1	84	16.9.2023

Text Books:

1. Mechanics of Materials J M Gere, B J Goodno, Cengage Eighth edition 2013
2. Fundamentals of Strength of Materials P N Chandramouli PHI Learning Pvt. Ltd 2013
3. Strength of Materials R K Rajput S. Chand and Company Pvt. Ltd 2014
4. Strength of Materials R. Subramanian Oxford 2005
5. Strength of Materials S. S. Ratan Tata McGraw Hill 2nd Edition, 2008
6. Mechanics of materials and Strength of Materials S C Pilli and N Balasubramanya Cengage 2019
7. Mechanics of Materials Ferdinand Beer, Russell Johnston, John Dewolf, David Mazurek McGraw Hill Education (India) Pvt. Ltd Latest edition
8. Mechanics of Materials R C Hibbeler Pearson Latest edition


COURSE INCHARGE


HOD


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DEPARTMENT OF MECHANICAL ENGINEERING

COURSE INCHARGE
COURSE CODE/NAME
SEMESTER/SEC/YEAR
ACADEMIC YEAR

: Dr. SALEEM KHAN
: 21ME43/FLUID MECHANICS
: IV/A/II
: 2022-2023

S No	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	Introduction: Definition and properties, types of fluids, pressure at a point in static fluid	L+D	BB	1	1	17/05/2023
2.	variation of pressure, Pascal's Law	L+D	BB	1	2	18/05/2023
3.	Pressure- absolute, gauge, vacuum, pressure measurement by manometers and gauges,	L+D	BB	1	3	19/05/2023
4.	hydrostatic pressure on plane submerged bodies	L+D	BB	1	4	22/05/2023
5.	hydrostatic pressure on plane submerged bodies	L+D	BB	1	5	23/05/2023
6.	Buoyance and metacentre, Stability of submerged bodies	L+D	BB	1	6	24/05/2023
7.	Fluid Kinematics: Velocity of fluid particle, types of fluid flow	L+D	BB	1	7	25/05/2023

8.	streamlines, path-lines and streak-lines continuity equation	L+D	BB	1	8	26/05/2023
9.	acceleration of fluid particle, strain rate,	L+D	BB	1	9	27/05/2023
10.	vorticity, stream function	L+D	BB	1	10	29/05/2023
11	potential function, Circulation	L+D	BB	1	11	30/05/2023
12	Reynolds transport theorem	L+D	BB	1	12	31/05/2023
MODULE 2						
13.	Fluid Dynamics: Introduction	L+D	BB	1	13	01/06/2023
14.	Forces acting on fluid in motion	L+D	BB	1	14	02/06/2023
15.	Linear momentum equation,	L+D	BB	1	15	05/06/2023
16.	Impact of jets,	L+D	BB	1	16	06/06/2023
17.	Moment of momentum equation	L+D	BB	1	17	07/06/2023
18.	Euler's equation of motion along a streamline,	L+D	BB	1	18	08/06/2023
19.	Bernoulli's equation – assumptions and limitations. Introduction to Navier-Stokes equation	L+D	BB	1	19	09/06/2023
20.	Venturi-meters,	L+D	BB	1	20	10/06/2023
21.	orificemeters	L+D	BB	1	21	12/06/2023
22.	rectangular and triangular notches	L+D	BB	1	22	13/06/2023
23.	pitot tubes	L+D	BB	1	23	14/06/2023
24.	Rota-meter, electromagnetic flow meter	L+D	BB	1	24	15/06/2023
MODULE 3						

25	Laminar and Turbulent flow:	L+D	BB	1	25	16/06/2023
26	Flow through circular pipe	L+D	BB	1	26	22/06/2023
27	between parallel plates	L+D	BB	1	27	23/06/2023
28	Power absorbed in viscous flow in bearings	L+D	BB	1	28	24/06/2023
29	Poiseuille equation	L+D	BB	1	29	26/06/2023
30	Loss of head due to friction in pipes	L+D	BB	1	30	27/06/2023
31	Major and minor losses,	L+D	BB	1	31	28/06/2023
32	pipes in series and parallel.	L+D	BB	1	32	30/06/2023
33	Numericals	L+D	BB	1	33	03/07/2023
34	Numericals	L+D	BB	1	34	04/07/2023
35	Numericals	L+D	BB	1	35	05/07/2023
36	Numericals	L+D		1	36	06/07/2023
MODULE 4						
37	Flow over bodies: Development of boundary layer	L+D	BB	1	37	07/07/2023
38	Lift and Drag,	L+D	BB	1	38	08/07/2023
39	Flow around circular cylinders, spheres	L+D	BB	1	39	10/07/2023
40	aerofoils and flat plates	L+D	BB	1	40	11/07/2023
41	Streamlined and bluff bodies	L+D	BB	1	41	12/07/2023
42	boundary layer separation and its control	L+D	BB	1	42	13/07/2023
43	Dimensional Analysis: Derived quantities	L+D	BB	1	43	14/07/2023

44	dimensions of physical quantities, dimensional homogeneity	L+D	BB	1	44	17/07/2023
45	Rayleigh method,	L+D	BB	1	45	18/07/2023
46	Buckingham Pi-theorem	L+D	BB	1	46	19/07/2023
47	dimensionless numbers	L+D	BB	1	47	20/07/2023
48	similitude, types of similitude.	L+D	BB	1	48	21/07/2023
MODULE 5						
49	Compressible flows:	L+D	BB	1	49	22/07/2023
50	Speed of sound	L+D	BB	1	50	24/07/2023
51	adiabatic and isentropic steady flow	L+D	BB	1	51	25/07/2023
52	Isentropic flow with area change stagnation	L+D	BB	1	52	26/07/2023
53	stagnation and sonic properties	L+D	BB	1	53	27/07/2023
54	normal and oblique shocks,	L+D	BB	1	54	28/07/2023
55	flow through nozzles.	L+D	BB	1	55	03/08/2023
56	Introduction to CFD	L+D	BB	1	56	04/08/2023
57	Necessity, limitations	L+D	BB	1	57	05/08/2023
58	philosophy behind CFD	L+D	BB	1	58	07/08/2023
59	applications	L+D	BB	1	59	08/08/2023
60		L+D	BB	1	60	09/08/2023

61	Revision	L+D	BB	1	61	10/08/2023
62	Revision	L+D	BB	1	62	11/08/2023
63	Revision	L+D	BB	1	63	14/08/2023
64	Revision	L+D	BB	1	64	16/08/2023
65	Revision	L+D	BB	1	65	17/08/2023
66	Revision	L+D	BB	1	66	18/08/2023
67	Revision	L+D	BB	1	67	19/08/2023
68	Revision	L+D	BB	1	68	21/08/2023
69	Revision	L+D	BB	1	69	22/08/2023

TEXT BOOK:

1. Fox, R. W., Pritchard, P. J. and McDonald, A. T., (2010), Introduction to Fluid Mechanics, 7th Edition, John Wiley & Sons Inc. Cimbala, J.M., Cengel, Y. A. (2010),
2. Fluid Mechanics: Fundamentals and Applications, McGraw-Hill – Frank M White., (2016), Fluid Mechanics, 8th Edition, McGraw-Hill

REFERENCES:

1. A text book of Fluid Mechanics and Hydraulic Machines, Dr. R K Bansal, Laxmi publishers
2. Fundamentals of Fluid Mechanics, Munson, Young, Okishi – & Hebsch, John Wiley Publications, 7th Edition

Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

- Industrial visits
- Course seminar
- Term project

Signature of Course In-Charge

Signature of Module Coordinator

Signature of HOD

Signature of Principal

Head of the Department
 Dept. of Mechanical Engg. K.S. INSTITUTE OF TECHNOLOGY
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K.S. INSTITUTE OF TECHNOLOGY BANGALORE

#14, Raghuvanahalli, Kanakapura Main Road, Bengaluru-5600109

DEPARTMENT OF MECHANICAL ENGINEERING

COURSE INCHARGE : SALEEM KHAN
COURSE CODE/NAME : 18ME56/OPERATIONS MANAGEMENT
SEMESTER/SEC/YEAR : V/A/ III
ACADEMIC YEAR : 2022-2023

S No	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	Introduction of O.M	L+D	BB	1	1	11/10/2022
2.	Functions within business organizations.	L+D	BB	1	2	12/10/2022
3.	Operation management function, factors affecting productivity.	L+D	BB	1	3	13/10/2022
4.	Classification of production systems,	L+D	BB	1	4	14/10/2022
5.	Productivity	L+D	BB	1	5	15/10/2022
6.	Affecting productivity.	L+D	BB	1	6	18/10/2022
7.	Decision Making: The decision process	L+D	BB	1	7	19/10/2022

8.	Characteristics of operations decisions	L+D	BB	1	8	20/10/2022
9.	Use of models, decision making environments	L+D	BB	1	9	21/10/2022
10.	Graphical linear programming,	L+D	BB	1	10	25/10/2022
11	Graphical linear programming,	L+D	BB	1	11	27/10/2022
12	Analysis and trade-offs.	L+D	BB	1	12	28/10/2022
MODULE 2						
13.	Forecasting: Introduction to Forecasting process.	L+D	BB	1	13	29/10/2022
14.	Steps in forecasting process	L+D	BB	1	14	02/11/2022
15.	Approaches to forecasting	L+D	BB	1	15	03/11/2022
16.	Forecasts based on judgment and opinion	L+D	BB	1	16	04/11/2022
17.	Analysis of time series	L+D	BB	1	17	08/11/2022
18.	Analysis. of time series	L+D	BB	1	18	09/11/2022
19.	Problems on analysis of time series	PS	BB	1	19	10/11/2022
20.	Problems on regression analysis	PS	BB	1	20	12/11/2022
21.	Problems on regression analysis	L+D	BB	1	21	17/11/2022
MODULE 3						
22	Capacity & Location Planning: Importance of capacity decisions.	L+D	BB	1	22	18/11/2022

23	Defining and measuring capacity.	L+D	BB	1	23	22/11/2022
24	Determinants of effective capacity, determining capacity requirement.	L+D	BB	1	24	23/11/2022
25	Developing capacity alternatives.	L+D	BB	1	25	24/11/2022
26	Evaluating alternatives, types of processing	L+D	BB	1	26	25/11/2022
27	Need for location decisions, nature of locations decisions.	L+D	BB	1	27	26/11/2022
28	General procedure for making locations decisions	L+D	BB	1	28	29/11/2022
29	Evaluating locations decisions	L+D	BB	1	29	30/11/2022
30	Facilities layout – need for layout decisions	L+D	BB	1	30	01/12/2022
31	Problems on facility location	L+D	BB	1	31	02/12/2022
32	Problems on facility location	L+D	BB		32	06/12/2022
MODULE 4						
33	Aggregate Planning & Master Scheduling : Introduction	L+D	BB	1	33	07/12/2022
34	Aggregate planning – Nature and scope of aggregate planning	L+D	BB	1	34	08/12/2022
35	Strategies of aggregate planning	L+D	BB	1	35	09/12/2022
36	Techniques for aggregate planning	L+D	BB	1	36	10/12/2022
37	Graphical and charting techniques	L+D	BB	1	37	13/12/2022
38	Mathematical techniques	PS	BB	1	38	14/12/2022
39	The master production schedule	PS	BB	1	39	15/12/2022
40	Master scheduling process	L+D	BB	1	40	16/12/2022

41	Master scheduling methods	L+D	BB	1	41	22/12/2022
42	Problems on Master production schedule	L+D	BB	1	42	23/12/2022
43	Problems on Master production schedule	L+D	BB	1	43	24/12/2022
MODULE 5						
44	Material Requirement Planning (MRP): Introduction, Dependent versus independent demand.	L+D	BB	1	44	27/12/2022
45	an overview of MRP – MRP inputs and outputs,	L+D	BB	1	45	28/12/2022
46	MRP processing,	L+D	BB	1	46	29/12/2022
47	ERP capacity requirement planning,	L+D	BB	1	47	30/12/2022
48	Benefits and limitations of MRP.	L+D	BB	1	48	03/01/2023
49	Purchasing and Supply Chain Management (SCM): Introduction,	L+D	BB	1	49	04/01/2023
50	Importance of purchasing and SCM,	L+D	BB	1	50	05/01/2023
51	the procurement process, Concept of tenders,	L+D	BB	1	51	06/01/2023
52	Approaches to SCM, Vendor development.	L+D	BB	1	52	10/01/2023
53	Revision	L+D	BB	1	53	11/01/2023
54	Revision	L+D	BB	1	54	12/01/2023
55	Revision	L+D	BB	1	55	13/01/2023
56	Revision	L+D	BB	1	56	17/01/2023
57	Revision	L+D	BB	1	57	27/01/2023

TEXT BOOK:

- T1: William J. Stevenson, "Production & Operations Management", Ninth Edition, Tata McGraw Hill.
T2: B. Mahadevan, "Operations Management – Theory & Practice", Pearson Education, 2007.

REFERENCES:

- R1: Norman Gaither & Greg Frazier, "Production and Operations Management".
R2: R. B. Chase, N.J. Aquilino, "Operations Management for Competitive Advantage" McGraw Hill Companies Inc., Ninth Edition.
R3: Joseph G Monks, "Production/Operations Management" McGraw Hill Books.

Signature of Course In-Charge



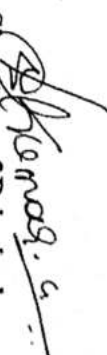
Signature of Module Coordinator



Signature of HOD



Signature of Principal



Head of the Department

Dept. of Mechanical Engg.
K. S. Institute of Technology
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PRINCIPAL

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K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF MECHANICAL ENGINEERING
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : Dr. NIRMALA L
COURSE TYPE / CODE / TITLE : CORE /18ME53 /DYNAMICS OF MACHINES
YEAR/ SEMESTER : III/V
BRANCH : MECHANICAL ENGINEERING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
1	Module-1 Static force analysis: Static equilibrium, analysis of four bar mechanism,	L+D	BB	1	1	10.10.2022
2	Static equilibrium, analysis of slider crank mechanism	L+D	BB	1	2	11.10.2022
3	Static equilibrium, analysis of shaper mechanism.	L+D	BB	1	3	12.10.2022
4	Numericals on 4-bar mech	L+D	BB	3	6	13.10.2022 TO -15.10.2022
5	numericals on slider crank mech	L+D	BB	4	10	17.10.2022 TO-20.10.2022
6	numericals on shaper mecha	L+D	BB	1	11	21.10.2022
7	D'Alembert's principle, analysis of four bar and slider crank mechanism, shaper mechanism.	L+D	BB	1	12	25.10.2022
8	analysis of four bar mechanism	L+D	BB	1	13	27.10.2022
9	analysis of slider crank mechanism, shaper mechanism.	L+D	BB	1	14	28.10.2022
10	analysis of shaper mechanism.	L+D	BB	1	15	29.10.2022

11	numericals on 4-bar mechanism	L+PPT	BB	1	16	31.10.2022
12	Module-2 Balancing of Rotating Masses: Static and Dynamic Balancing,	L+D	BB	1	17	2.11.2022
13	Balancing of single rotating mass by balancing masses in same plane and in different planes.	L+D	BB	1	18	3.11.2022
14	Balancing of several rotating masses by balancing masses in same plane and in different planes.	L+D	BB	1	19	4.11.2022
	Numericals on balancing of several masses rotating in same plane	L+D	BB	1	20	7.11.2022
	Numericals on balancing of several masses rotating in different plane	L+D	BB	4	24	8.11.2022 TO-12.11.2022
	ICIE					14.11.2022 TO 16.11.2022
	PPACEMENT TRAINING					17.11.2022 TO 23.11.2022
16	Balancing of Reciprocating Masses: Inertia Effect of crank and connecting rod,	L+D	BB	1	25	24.11.2022
17	Single cylinder Engine,	L+D	BB	1	26	25.11.2022
18	Balancing in multi cylinder-inline engine (primary and secondary forces), V-type engine, Radial engine – direct and reverse crank method.	L+D	BB	1	27	26.11.2022
19	Module-3 Governors: Types of Governors; Force Analysis of Porter	L+D	BB	1	28	28.11.2022
20	Force Analysis of Hartnell Governors.	L+D	BB	1	29	29.11.2022
21	Controlling Force, Stability, Sensitiveness, Isochronism,	L+D	BB	1	30	30.11.2022
	Effort and Power of governor	L+D	BB	1	31	1.12.2022
	numerical on porter governor	L+D	BB	4	35	2.12.2022 TO 7.12.2022
	numerical on hartnell governor	L+D	BB	3	38	8.12.2022 TO 10.12.2022

22	Gyroscope: Vectorial representation of angular motion, Gyroscopic couple.	L+D	BB	1	39	12.12.2022	
23	Effect of gyroscopic Couple on plane disc, ship,	L+D	BB	1	40	13.12.2022	
24	Effect of gyroscopic Couple aeroplane,	L+D	BB	1	41	14.12.2022	
25	Stability of two wheelers	L+D	BB	1	42	15.12.2022	
26	Stability of four wheelers	L+D	BB	1	43	16.12.2022	
27	IICIE						19.12.2022 TO 21.12.2022
30	Numericals o gyroscope	L+D	BB	1	44	22.12.2022	
31	Module-4 Free vibrations: Basic elements of vibrating system, Types of free vibrations,	L+D	BB	1	45	23.12.2022	
32	Longitudinal vibrations equilibrium method,.	L+D	BB	1	46	24.12.2022	
33	D'Alembert's principle, ,	L+D	BB	1	47	26.12.2022	
34	Energy method	L+D	BB	1	48	27.12.2022	
35	Rayleigh's method. Determination of natural frequency of single degree freedom systems,	L+D	BB	1	49	28.12.2022	
36	numericals	L+D	BB	4	53	29.12.2022 TO 2.01.2023	
37	Effect of spring mass, Damped free vibrations; ,	L+D	BB	1	54	03.01.2023	
38	Under damped	L+D	BB	1	55	04.01.2023	
39	over damped	L+D	BB	1	56	05.01.2023	
40	critically damped systems. Logarithmic decrement	L+D	BB	1	57	06.01.2023	
41	numericals	L+D	BB	3	60	09.01.2023 to 11.01.2023	
42	Module-5 Forced vibrations: Undamped forced vibration of spring mass system	L+D	BB	1	61	12.01.2023	

43	Damped forced vibrations,	L+D	BB	1	62	13.01.2023
44	Rotating unbalance, Reciprocating unbalance,	L+D	BB	1	63	16.01.2023
45	Vibration isolation,	L+D	BB	1	64	17.01.2023
46	Support motion(absolute and relative motion),	L+D	BB	1	65	18.01.2023
47	Transverse vibration of shaft with single concentrated load, several loads, uniformly distributed load, Critical speed	L+D	BB	1	66	19.01.2023
	III CIE					23.01.2023 TO 25.01.2023

Text Books:

- 1 Theory of Machines: Kinematics and Dynamics Sadhu Singh Pearson Third edition 2019.
- 2 Mechanism and Machine Theory G. Ambekar PHI 2009

Heeri
Course Incharge

Gin
Module coordinator

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K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF MECHANICAL ENGINEERING
LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : Dr. NIRMALA L
COURSE TYPE / CODE / TITLE : PROFESSIONAL ELECTIVE- 1 /18ME641/NON TRADITIONAL MACHINING
YEAR/ SEMESTER : III/VI
BRANCH : MECHANICAL ENGINEERING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
1	Module-1 Introduction to Non-traditional machining, Need for Non-traditional machining process	L+PPT	BB	1	1	20.03.2023
2	Comparison between traditional and non-traditional machining	L+PPT	PPT	1	2	23.03.2023
3	general classification Non-traditional machining processes classification based on nature of energy employed in machining	L+PPT	PPT	1	3	24.03.2023
4	selection of non-traditional machining processes,	L+PPT	PPT	1	4	27.03.2023
5	Specific advantages, limitations and applications of non-traditional machining processes.	L+PPT	PPT	1	5	29.03.2023
6	Module-2 Ultrasonic Machining (USM): Introduction.	L+PPT	PPT	1	6	30.03.2023
7	Equipment and material process Effect of process parameters:	L+PPT	PPT	1	7	1.04.2023
8	. Effect of abrasive grain diameter, effect of slurry, tool & work material.	L+PPT	PPT	1	8	1.04.2023
9	Process characteristics: Material removal rate, tool wear, accuracy, surface finish, applications ,advantages & limitations of USM. and process of material removal	L+PPT	PPT	1	9	5.04.2023

10	Abrasive Jet Machining (AJM): Introduction, Equipment	L+PPT	PPT	1	10	6.04.2023
11	, Effect of amplitude and frequency, process variables: carrier gas, type of abrasive, work material,	L+PPT	PPT	1	11	10.04.2023
12	, Process characteristics-Material removal rate, Nozzle wear, stand-off distance (SOD).	L+D	BB	1	12	12.04.2023
13	accuracy & surface finish.	L+D	BB	1	13	13.04.2023
14	Applications, advantages & limitations of AJM	L+PPT	PPT	1	14	15.04.2023
	I CIE					17.04.2023 TO 19.04.2023
15	Module-3 ELECTROCHEMICAL MACHINING (ECM): Introduction, Principle of electro chemical machining, ECM equipment,	L+PPT	PPT	1	15	20.04.2023
16	Elements of ECM operation, Chemistry of ECM.	L+D	ppt	1	16	21.04.2023
17	ECM Process characteristics: Material removal rate, accuracy, surface finish	L+D	ppt	1	17	24.04.2023
18	Process parameters: Current density, Tool feed rate, Gap between tool & work piece, velocity of electrolyte flow, type of electrolyte, its concentration temperature, and choice of electrolytes.	L+D	ppt	1	18	26.04.2023
19	ECM Tooling: ECM tooling technique & example, Tool & insulation materials. Applications	L+D	BB	1	19	27.04.2023
20	ECM: Electrochemical grinding and electrochemical honing process. Advantages,.	L+D	BB	1	20	28.04.2023
21	disadvantages and application of ECG, ECH.	L+D	BB	1	21	29.04.2023
22	CHEMICAL MACHINING (CHM): Elements of the process, Resists (maskants),	L+D	BB	1	22	3.05.2023
23	Etchants. Types of chemical machining process-	L+D	BB	1	23	4.05.2023
24	chemical blanking process, chemical milling process.	L+D	BB	1	24	5.05.2023
25	Process characteristics of CHM: material removal rate, accuracy, surface finish,	L+D	BB	1	25	8.05.2023
26	advantages, limitations and applications of chemical machining	L+D	BB	1	26	10.05.2023

	process					
27	Module-4 ELECTRICAL DISCHARGE MACHINING (EDM): Introduction, mechanism of metal removal,	L+D	BB	1	27	11.05.2023
28	EDM equipment: spark erosion generator (relaxation type), dielectric medium-its functions & desirable properties,	L+D	BB	1	25	12.05.2023
29	electrode feed control system. Flushing types; pressure flushing, suction flushing, side flushing, pulsed flushing.	L+D	BB	1	28	13.05.2023
30	EDM process parameters: Spark frequency, current & spark gap, surface finish,	L+D	BB	1	29	15.05.2023
31	Heat Affected Zone	L+D	BB	1	30	17.05.2023
32	Advantages, limitations	L+D	BB	1	31	18.05.2023
33	& applications of EDM	L+D	BB	1	32	19.05.2023
34	Electrical discharge grinding,.	L+D	ppt	1	33	22.05.2023
35	Traveling wire EDM.	L+D	BB	1	34	24.05.2023
36	PLASMA ARC MACHINING (PAM): Introduction, non-thermal	L+D	BB	1	35	25.05.2023
37	generation of plasma,	L+D	BB	1	36	26.05.2023
38	equipment mechanism of metal removal	L+D	BB	1	37	29.05.2023
39	Plasma torch, process parameters	L+D	BB	1	38	31.05.2023
40	process characteristics. Safety precautions. Safety precautions	L+D	BB	1	39	1.06.2023
41	applications, advantages and limitations	L+D	BB	1	40	2.06.2023
42	II CIE					5.06.2023 TO 7.05.2023
45	Module-5 LASER BEAM MACHINING (LBM): Introduction, generation of LASER,	L+D	BB	1	41	8.06.2023
46	Equipment and mechanism of metal removal,	L+D	BB	1	42	9.06.2023

47	LBM parameters and characteristics	L+D	BB	1	43	10.06.2023
48	Applications, Advantages & limitations.	L+D	BB	1	44	12.06.2023
49	ELECTRON BEAM MACHINING (EBM): Introduction, Principle,	L+D	BB	1	45	14.06.2023
50	ELECTRON BEAM MACHINING (EBM): Principle	L+D	PPT	1	46	15.06.2023
51	equipment of EBM	L+D	PPT	1	47	16.06.2023
52	mechanism of metal removal in ebm	L+D	PPT	1	48	19.06.2023
53	advantages and limitations of EBM	L+D	PPT	1	49	21.06.2023
54	applications of ebm	L+D	PPT	1	50	22.06.2023
55	applications of ebm	L+D	PPT	1	51	23.06.2023
56	III CIE					3.07.2023 TO 05.07.2023
59	Revision	L+D	BB	1	52	6.07.2023

Text Books:

1. Modern Machining Process by P.C Pandey and H S Shah McGraw Hill Education India Pvt. Ltd. 2000
2. Production technology HMT McGraw Hill Education India Pvt. Ltd

[Signature]
Course Incharge

[Signature]
Module coordinator

[Signature]
HOD
Head of the Dept.
Dept. of Mechanical Engg.
K.S. Institute of Technology
Bengaluru - 560 109.

[Signature]
Principal
PRINCIPAL
K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109.



K S INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : Mr. RAJESH G.T

COURSE TITLE/CODE : SUPPLY CHAIN MANAGEMENT/18ME653

YEAR/ SEMESTER/SECTION : III / VI / A

BRANCH : ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: INTRODUCTION TO SUPPLY CHAIN						
1	Introduction to Supply Chain	L+D,PS	LCD	1	1	20-03-2023
2	Supply Chain Fundamentals — Importance	L+D,PS	LCD	1	2	21-03-2023
3	Importance of Supply Chain	L+D,PS	LCD	1	3	23-03-2023
4	Evolution- Role in Economy	L+D,PS	LCD	1	4	24-03-2023
5	Decision Phases	L+D,PS	LCD	1	5	25-03-2023
6	Supplier Manufacturer-Customer chain.	L+D,PS	LCD	1	6	27-03-2023
7	Enablers/ Drivers of Supply Chain Performance.	L+D,PS	LCD	1	7	28-03-2023
8	Supply chain strategy	L+D,PS	LCD	1	8	30-03-2023
9	Supply Chain Performance Measures	L+D,PS	LCD	1	9	31-03-2023
10	Case Studies	L+D,PS	LCD	1	10	01-04-2023

MODULE 2: SOURCING AND OUTSOURCING

11	Strategic Sourcing Outsourcing	L+D,PS	LCD	1	11	04-04-2023
12	Make Vs buy	L+D,PS	LCD+BB	1	12	06-04-2023
13	Identifying core processes	L+D,PS	LCD	1	13	10-04-2023
14	Market Vs Hierarchy	L+D,PS	LCD	1	14	11-04-2023
15	Make Vs buy continuum	L+D,PS	LCD	1	15	13-04-2023
16	Sourcing strategy	L+D,PS	LCD	1	16	15-04-2023
17	Supplier Selection and Contract Negotiation	L+D,PS	LCD	1	17	20-04-2023
18	Creating a world class supply base	L+D,PS	LCD	1	18	21-04-2023
19	Supplier Development	L+D,PS	LCD	1	19	24-04-2023
20	World Wide Sourcing	L+D,PS	LCD	1	20	25-04-2023

MODULE 3: WAREHOUSE MANAGEMENT

21	Warehouse Management & Stores management	L+D,PS	LCD	1	21	27-04-2023
22	Store's systems and procedures	L+D,PS	LCD+BB	1	22	28-04-2023
23	Incoming materials control	L+D,PS	LCD,	1	23	29-04-2023,
24	stores accounting and stock verification	L+D,PS	LCD	1	24	02-05-2023
25	Obsolete, surplus and scrap-value analysis in material handling	L+D,PS	LCD	1	25	04-05-2023
26	Transportation and Traffic management	L+D,PS	LCD	1	26	05-05-2023
27	-operational efficiency-productivity-cost effectiveness-performance measurement.	L+D,PS	LCD	1	27	08-05-2023
28	Supply Chain Network Distribution Network Design – Role - Factors Influencing Options, Value Addition –	L+D,PS	LCD	1	28	09-05-2023
29	Stores systems and procedures	L+D,PS	LCD	1	29	11-05-2023

30	Distribution Strategies - Models for Facility Location and Capacity allocation	L+D,PS	LCD	1	30	12-05-2023
31	Distribution Center Location Models	L+D,PS	LCD	1	31	13-05-2023

MODULE 4: NETWORK OPTIMIZATION MODELS

32	Supply Chain Network optimization models	L+D,PS	LCD	1	32	15-05-2023
33	Impact of uncertainty on Network Design	L+D,PS	LCD	1	33	16-05-2023
34	Network Design decisions using Decision trees	L+D,PS	LCD	1	34	18-05-2023
35	Planning Demand	L+D,PS	LCD	1	35	19-05-2023
36	Multiple item - multiple location inventory management.	L+D,PS	LCD	1	36	25-05-2023
37	Pricing Management	L+D,PS	LCD	1	37	26-05-2023
38	Revenue Management	L+D,PS	LCD	1	38	27-05-2023
39	Supply Chain restructuring	L+D,PS	LCD	1	39	01-06-2023
40	Supply Chain Mapping	L+D,PS	LCD	1	40	02-06-2023
41	Case Studies	L+D,PS	LCD	1	41	05-06-2023

MODULE 5: CURRENT TRENDS

42	Current Trends: Supply Chain Integration	L+D,PS	LCD	1	42	06-06-2023
43	Building partnership and trust in Supply chain Value of Information	L+D,PS	LCD	1	43	08-06-2023
44	Bullwhip Effect	L+D,PS	LCD	1	44	09-06-2023
45	Effective forecasting - Coordinating the supply chain	L+D,PS	LCD	1	45	12-06-2023
46	Supply Chain process restructuring,	L+D,PS	LCD	1	46	13-06-2023
47	Postpone the point of differentiation --	L+D,PS	LCD	1	47	15-06-2023
48	IT in Supply Chain	L+D,PS	LCD	1	48	16-06-2023
49	Agile Supply Chains -Reverse Supply chain	L+D,PS	LCD	1	49	19-06-2023

50	Future of IT in supply chain- E Business in supply chain.	L+D,PS	LCD	1	50	20-06-2023
51	Revision	L+D,PS	BB	1	51	22-06-2023
52	Revision	L+D,PS	BB	1	52	22-06-2023
53	Revision	L+D,PS	BB	1	53	30-06-2023
54	Revision	L+D,PS	BB	1	54	06-07-2023
55	Revision	L+D,PS	BB	1	55	10-07-2023

Text Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)

- Supply Chain Management – Text and Cases Janat Shah Pearson Education 2009
- Supply Chain Management Strategy Planning and Operation Sunil Chopra and Peter Meindl PHI Learning / Pearson Education 2007

Reference Books:

- Business Logistics and Supply Chain Management Ballou Ronald H Pearson Education 5th Edition, 2007
- Designing and Managing the Supply Chain: Concepts, Strategies, and Cases David Simchi-Levi, Philip Kaminsky, Edith Simchi-Levi Tata McGraw-Hill 2005
- Supply Chain Management Concept and Cases Aitekar Rahul V PHI 2005
- Modeling the Supply Chain Shapiro Jeremy F Thomson Learning Second Reprint , 2002 5 Principles of Supply Chain Management- A Balanced Approach Joel D. Wisner, G. Keong Leong, KehChoon Tan South-Western, Cengage Learning 2008

Web Materials:

- ✓ <https://www.azdocuments.in/2021/05/supply-chain-management-18me653.html>

Details of the teaching aids:

1. BLACK BOARD USAGE
2. PPT & Video presentation

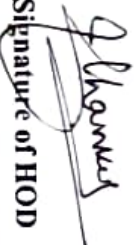
Signature of Course In-Charge



Signature of Module Coordinator



Signature of HOD



Signature of Principal



Head of the Department
Dept. of Mechanical Engg
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K.S. INSTITUTE OF TECHNOLOGY BANGALORE

#14, Raghuvanahalli, Kanakapura Main Road, Bengaluru-5600109

DEPARTMENT OF MECHANICAL ENGINEERING

Design of Machine Elements-1 - Course Plan

COURSE INCHARGE : Mr. Anilkumar A
COURSE CODE/NAME : 18ME52 / DESIGN OF MACHINE ELEMENTS-1
SEMESTER/SEC/YEAR : V / III
ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1.	Introduction to Mechanical engineering design: Design Process: Definition of design, phases of design	L+AV	Projectors	1	1	10/10/2022
2.	Review of engineering materials and their properties and manufacturing processes; use of codes and standards, selection of preferred sizes. Factor of safety & Service factor.	L+D	Projectors	3	4	11/10/2022 13/10/2022 14/10/2022
3.	Review of axial, bending, shear and torsion loading on machine components, combined loading, two- and three dimensional stresses, principal stresses, stress tensors, Mohr's circles. Numericals on Static stresses	L+ D	BB	3	7	15/10/2022 17/10/2022 18/10/2022
4.	Failure mode: definition and types. , Failure of brittle and ductile materials; even and uneven materials;	L+ D	BB	1	8	20/10/2022
5.	Theories of failure: maximum normal stress theory, maximum shear stress theory, distortion energy theory, strain energy theory, Columba –Mohr theory and modified Mohr's theory.	L+D	BB	2	10	21/10/2022 25/10/2022
6.	Stress concentration, stress concentration factor and methods of reducing stress concentration.	L+D	BB	1	11	27/10/2022

7.	Numericals on stress concentration factor	L+D	BB	1	12	28/10/2022
MODULE 2						
8.	Impact Strength: Introduction, Impact stress due to Axial, Bending and Torsional loads	L+D	Projectors	1	13	31/10/2022
9.	Numericals on Impact stresses	L+D	BB	2	15	3/11/2022 4/11/2022
10.	Fatigue failure: Endurance limit, S-N Diagram, Low cycle fatigue, High cycle fatigue	L+D	Projectors	1	16	7/11/2022
11.	Fatigue loading: Introduction to fatigue failure, Mechanism of fatigue failure, types of fatigue loading, S-N Diagram, Low cycle fatigue, High cycle fatigue, Endurance limit.	L+D	Projectors	2	18	8/11/2022 10/11/2022
12.	Modifying factors: size effect, surface effect, Stress concentration effects Notch sensitivity	L+D	BB	1	19	12/11/2022
13.	FIRST CIE			1	20	14/11/2022
14.	Goodman and Soderberg relationship, stresses due to combined loading, cumulative fatigue damage, and Miner' s equation.	L+D	BB	2	22	17/11/2022 18/11/2022
15.	Numericals on Fatigue loading	L+D	BB	3	25	21/11/2022 22/11/2022 24/11/2022
MODULE 3						
16.	Design of Shafts: Torsion of shafts, solid and hollow shaft design with steady loading based on strength and rigidity	L+D	Projectors	1	26	25/11/2022
17.	ASME and BIS codes for power transmission shafting, design of shafts subjected to combined bending, torsion and axial loading. Design of shafts subjected to fluctuating loads.	L+D	Projectors	2	28	28/11/2022 29/11/2022

18.	Numericals on design of shafts	L+D	BB	3	31	1/12/2022 2/12/2022 5/12/2022
19.	Design of keys and couplings: Keys: Types of keys and their applications, design considerations in parallel and tapered sunk keys, Design of square and rectangular sunk keys.	L+D	Projectors	2	33	6/12/2022 8/12/2022
20.	Couplings: Rigid and flexible coupling-types and applications, design of Flange coupling, and Bush and Pin type coupling.	L+D	BB	2	35	9/12/2022 10/12/2022
21.	Numericals on Design of Keys and Couplings	L+D	BB	4	39	12/12/2022 13/12/2022 15/12/2022 16/12/2022
22.	SECOND CIE			1	40	19/12/2022
MODULE 4						
23.	Design of Permanent Joints: Types of permanent joints- Riveted and Welded Joints.	L+D	Projectors	1	41	22/12/2022
24.	Riveted joints: Types of rivets, rivet materials, Caulking and Fullering, analysis of riveted joints, joint efficiency, Failures of riveted joints, boiler joints, riveted brackets.	L+D	Projectors	2	43	23/12/2022 26/12/2022
25.	Numericals on Riveted Joints	L+D	BB	4	47	27/12/2022 29/12/2022 30/12/2022 31/12/2022
26.	Welded joints: Types, strength of butt and fillet welds, eccentrically loaded welded joints	L+D	BB	1	48	2/1/2023
27.	Numericals on welded Joints	L+D	BB	3	51	3/1/2023 5/1/2023 6/1/2023
MODULE 5						
28.	Design of Temporary Joints: Types of temporary joints- cotter joints, knuckle joint and fasteners. Design of Cotter and Knuckle Joint.	L+D	Projectors	1	52	9/1/2023 10/1/2023

29.	Numericals on Design of cotter & Knuckle joint	L+D	L	2	54	10/1/2023 12/1/2023
30.	Threaded Fasteners: Stresses in threaded fasteners, effect of initial tension, design of threaded fasteners under static, dynamic and impact loads, design of eccentrically loaded bolted joints.	L+D	BB	1	55	13/1/2023
31.	Numericals on Threaded Fasteners.	L+D	BB	1	58	16/1/2023
32.	Power screws: Mechanics of power screw, stresses in power screws, efficiency and self-locking, design of power screws.	L+D	BB	2	60	17/1/2023 23/1/2023
33.	THIRD CIE			1	61	18/1/2023
34.	Numericals on Power screws	L+D	BB	2	63	24/1/2023 25/1/2023
35.	Numericals on Complete Design of Screw Jack.	L+D	BB	2	65	26/1/2023 27/1/2023

Text Books:

1. Design of Machine Elements, V.B. Bhandari, Tata McGraw Hill Publishing Company Ltd., New Delhi, 2nd Edition 2007
2. Mechanical Engineering Design, Joseph E Shigley and Charles R. Mischke. McGraw Hill International edition, 6th Edition, 2009.

Reference Books:

1. Machine Design, Robert L. Norton, Pearson Education Asia, 2001
2. Engineering Design, George E. Dieter, Linda C Schmidt, McGraw Hill Education, Indian Edition, 2013.

Web Materials:

W1: <https://nptel.ac.in/downloads/112105125/>


W2: <https://proceedings.asmedigitalcollection.asme.org/>

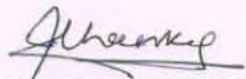
W3: https://stemez.com/subjects/technology_engineering/1GMachineDesign/1GMachineDesign.php

Details for the teaching Aids

LCD projectors will be used where ever necessary and since this is problematic subject Black Board Teaching will be used.


Signature of Course In charge


Signature of Module Coordinator


Signature of HOD



K S INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : Mr. RAJESH G.L
COURSE TITLE/CODE : SUPPLY CHAIN MANAGEMENT/18ME653
YEAR/ SEMESTER/SECTION : III / VI / B
BRANCH : COMPUTER SCIENCE & ENGINEERING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: INTRODUCTION TO SUPPLY CHAIN						
1	Introduction to Supply Chain	L+D,PS	LCD	1	1	20-03-2023
2	Supply Chain Fundamentals -- Importance	L+D,PS	LCD	1	2	21-03-2023
3	Importance of Supply Chain	L+D,PS	LCD	1	3	23-03-2023
4	Evolution- Role in Economy	L+D,PS	LCD	1	4	24-03-2023
5	Decision Phases	L+D,PS	LCD	1	5	25-03-2023
6	Supplier Manufacturer-Customer chain.	L+D,PS	LCD	1	6	27-03-2023
7	Enablers/ Drivers of Supply Chain Performance.	L+D,PS	LCD	1	7	28-03-2023
8	Supply chain strategy	L+D,PS	LCD	1	8	30-03-2023
9	Supply Chain Performance Measures	L+D,PS	LCD	1	9	31-03-2023
10	Case Studies	L+D,PS	LCD	1	10	01-04-2023

MODULE 2: SOURCING AND OUTSOURCING

11	Strategic Sourcing Outsourcing	L+D,PS	LCD	1	11	04-04-2023
12	Make Vs buy	L+D,PS	LCD+BB	1	12	06-04-2023
13	Identifying core processes	L+D,PS	LCD	1	13	10-04-2023
14	Market Vs Hierarchy	L+D,PS	LCD	1	14	11-04-2023
15	Make Vs buy continuum	L+D,PS	LCD	1	15	13-04-2023
16	Sourcing strategy	L+D,PS	LCD	1	16	15-04-2023
17	Supplier Selection and Contract Negotiation	L+D,PS	LCD	1	17	20-04-2023
18	Creating a world class supply base	L+D,PS	LCD	1	18	21-04-2023
19	Supplier Development	L+D,PS	LCD	1	19	24-04-2023
20	World Wide Sourcing	L+D,PS	LCD	1	20	25-04-2023

MODULE 3: WAREHOUSE MANAGEMENT

21	Warehouse Management & Stores management	L+D,PS	LCD	1	21	27-04-2023
22	Store's systems and procedures	L+D,PS	LCD+BB	1	22	28-04-2023
23	Incoming materials control	L+D,PS	LCD	1	23	29-04-2023
24	stores accounting and stock verification	L+D,PS	LCD	1	24	02-05-2023
25	Obsolete, surplus and scrap-value analysis in material handling	L+D,PS	LCD	1	25	04-05-2023
26	Transportation and Traffic management	L+D,PS	LCD	1	26	05-05-2023
27	-operational efficiency-productivity-cost effectiveness-performance measurement.	L+D,PS	LCD	1	27	08-05-2023
28	Supply Chain Network Distribution Network Design – Role - Factors Influencing Options, Value Addition –	L+D,PS	LCD	1	28	09-05-2023
29	Stores systems and procedures	L+D,PS	LCD	1	29	11-05-2023

30	Distribution Strategies - Models for Facility Location and Capacity allocation	L+D,PS	LCD	1	30	12-05-2023
31	Distribution Center Location Models	L+D,PS	LCD	1	31	13-05-2023
MODULE 4: NETWORK OPTIMIZATION MODELS						
32	Supply Chain Network optimization models	L+D,PS	LCD	1	32	15-05-2023
33	Impact of uncertainty on Network Design	L+D,PS	LCD	1	33	16-05-2023
34	Network Design decisions using Decision trees	L+D,PS	LCD	1	34	18-05-2023
35	Planning Demand	L+D,PS	LCD	1	35	19-05-2023
36	Multiple item - multiple location inventory management.	L+D,PS	LCD	1	36	25-05-2023
37	Pricing Management	L+D,PS	LCD	1	37	26-05-2023
38	Revenue Management	L+D,PS	LCD	1	38	27-05-2023
39	Supply Chain restructuring	L+D,PS	LCD	1	39	01-06-2023
40	Supply Chain Mapping	L+D,PS	LCD	1	40	02-06-2023
41	Case Studies	L+D,PS	LCD	1	41	05-06-2023
MODULE 5: CURRENT TRENDS						
42	Current Trends: Supply Chain Integration	L+D,PS	LCD	1	42	06-06-2023
43	Building partnership and trust in Supply chain Value of Information	L+D,PS	LCD	1	43	08-06-2023
44	Bullwhip Effect	L+D,PS	LCD	1	44	09-06-2023
45	Effective forecasting - Coordinating the supply chain	L+D,PS	LCD	1	45	12-06-2023
46	Supply Chain process restructuring,	L+D,PS	LCD	1	46	13-06-2023
47	Postpone the point of differentiation -	L+D,PS	LCD	1	47	15-06-2023
48	IT in Supply Chain	L+D,PS	LCD	1	48	16-06-2023
49	Agile Supply Chains -Reverse Supply chain	L+D,PS	LCD	1	49	19-06-2023

50	Future of IT in supply chain- E Business in supply chain.	L+D,PS	LCD	1	50	20-06-2023
51	Revision	L+D,PS	BB	1	51	22-06-2023
52	Revision	L+D,PS	BB	1	52	22-06-2023
53	Revision	L+D,PS	BB	1	53	30-06-2023
54	Revision	L+D,PS	BB	1	54	06-07-2023
55	Revision	L+D,PS	BB	1	55	10-07-2023

Text Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)

- Supply Chain Management– Text and Cases Janat Shah Pearson Education 2009
- Supply Chain Management Strategy Planning and Operation Sunil Chopra and Peter Meindl PHI Learning / Pearson Education 2007

Reference Books:

- Business Logistics and Supply Chain Management Ballou Ronald H Pearson Education 5th Edition, 2007
- Designing and Managing the Supply Chain: Concepts, Strategies, and Cases David Simchi-Levi, Philip Kaminsky, Edith Simchi-Levi Tata McGraw-Hill 2005
- Supply Chain Management Concept and Cases Altekar Rahul V PHI 2005
- Modeling the Supply Chain Shapiro Jeremy F Thomson Learning Second Reprint , 2002 5 Principles of Supply Chain Management- A Balanced Approach Joel D. Wisner, G. Keong Leong, KeahChoon Tan South-Western, Cengage Learning 2008

Web Materials:

- ✓ <https://www.azdocuments.in/2021/05/supply-chain-management-18me653.html>

Details of the teaching aids:

1. BLACK BOARD USAGE
2. PPT & Video presentation



Signature of Course In-Charge



Signature of Module Coordinator



Signature of HOD

Head of the Department
Dept. of Mechanical Engg.
K.S. Institute of Technology
Bengaluru - 560 109.



Signature of Principal

PRINCIPAL
K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109.



K S INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : Mr. RAJESH G.L
COURSE TITLE/CODE : TOTAL QUALITY MANAGEMENT/18ME734
YEAR/ SEMESTER/SECTION : IV / VII
BRANCH : MECHANICAL ENGINEERING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: PRINCIPLES AND PRACTICE						
1	Introduction to TQM	L+D,PS	LCD	1	1	19-09-2022
2	Basic approaches of TQM with examples	L+D,PS	LCD	1	2	20-09-2022
3	Gurus of TQM and their contribution	L+D,PS	LCD	1	3	21-09-2022
4	Frame work and awareness of TQM	L+D,PS	LCD	1	4	23-09-2022
5	Introduction, states, concept of work, heat	L+D,PS	LCD	1	5	26-09-2022
6	Meaning of quality with examples	L+D,PS	LCD	1	6	27-09-2022
7	Evolution, obstacles and benefits of TQM	L+D,PS	LCD	1	7	28-09-2022
8	Introduction to QMS	L+D,PS	LCD	1	8	30-09-2022
9	ISO registration procedure and its benefits	L+D,PS	LCD	1	9	01-10-2022
10	ISO 9000 series of standards with example	L+D,PS	LCD	1	10	03-10-2022

MODULE 2: LEADERSHIP						
11	Definition of leader and leadership with examples	L+D,PS	LCD	1	11	06-10-2022
12	Characteristics of quality leaders	L+D,PS	LCD+BB	1	12	07-10-2022
13	Characteristics of quality leader- continued	L+D,PS	LCD	1	13	10-10-2022
14	Features of leadership, leadership concept	L+D,PS	LCD	1	14	11-10-2022
15	Definition of effective people and their characteristics	L+D,PS	LCD	1	15	12-10-2022
16	Ethics, types, causes for unethical behavior in an organization	L+D,PS	LCD	1	16	13-10-2022
17	Demings philosophy with examples, role of TQM leader	L+D,PS	LCD	1	17	14-10-2022
18	Discussion on how to implement TQM in a business firm	L+D,PS	LCD	1	18	17-10-2022
19	Core values and concepts to be followed towards development of organization.	L+D,PS	LCD	1	19	18-10-2022
20	Stages/phases of strategic planning with example	L+D,PS	LCD	1	20	19-10-2022
MODULE 3: CUSTOMER SATISFACTION & EMPLOYEE INVOLVEMENT						
21	Introduction to customer satisfaction	L+D,PS	LCD	1	21	25-10-2022
22	Types of customers, examples	L+D,PS	LCD+BB	1	22	27-10-2022
23	Customer perception of quality	L+D,PS	LCD	1	23	28-10-2022
24	Customer feedback and its benefits	L+D,PS	LCD	1	24	31-10-2022
25	Methods of obtaining feedback from customer and employees	L+D,PS	LCD	1	25	02-11-2022
26	Customer complaints, elements of customer service	L+D,PS	LCD	1	26	03-11-2022
27	Difference between needs and requirement, Kano model	L+D,PS	LCD	1	27	04-11-2022
28	Kano model with example, customer retention and its benefits	L+D,PS	LCD	1	28	07-11-2022
29	Definition of employee involvement, Maslows hierarchy	L+D,PS	LCD	1	29	08-11-2022

30	Two factor theory, employee surveys	L+D,PS	LCD	1	30	09-11-2022
31	Empowerment, Teams and its types, suggestion system	L+D,PS	LCD	1	31	10-11-2022
MODULE 4: CONTINUOUS PROCESS IMPROVEMENT						
32	Introduction to CPI, Process	L+D,PS	LCD	1	32	14-11-2022
33	Discussion on Juran trilogy with example	L+D,PS	LCD	1	33	15-11-2022
34	Strategies of CPI	L+D,PS	LCD	1	34	16-11-2022
35	Types of problems, PDSA cycle and problem solving methods	L+D,PS	LCD	1	35	17-11-2022
36	Kaizen, re-engineering, six sigma with case studies	L+D,PS	LCD	1	36	18-11-2022
37	Definitions of statistical process control with examples	L+D,PS	LCD	1	37	24-11-2022
38	Pareto diagram and process flow diagram	L+D,PS	LCD	1	38	25-11-2022
39	Cause and effect diagram, check sheets	L+D,PS	LCD	1	39	26-11-2022
40	Histograms, fundamentals of statistics	L+D,PS	LCD	1	40	28-11-2022
41	Discussion on control charts, concept of state of control and out of control process	L+D,PS	LCD	1	41	29-11-2022
MODULE 5: TOTAL PRODUCTIVE MAINTENANCE						
42	Definition of TPM.	L+D,PS	LCD	1	42	30-11-2022
43	Types of maintenance with example	L+D,PS	LCD	1	43	01-12-2022
44	Steps to implement TPM in an organization	L+D,PS	LCD	1	44	02-12-2022
45	Explanation on pillars of TPM	L+D,PS	LCD	1	45	03-12-2022
46	5S, Jishu Hozen, concept of quality maintenance	L+D,PS	LCD	1	46	05-12-2022
47	Difference between quality maintenance and planned	L+D,PS	LCD	1	47	06-12-2022

	maintenance					
48	Definition of quality by design, key components of QbD	L+D,PS	LCD	1	48	07-12-2022
49	Role of QbD in pharmaceutical industry, examples	L+D,PS	LCD	1	49	09-12-2022
50	Benefits and challenges of QbD	L+D,PS	LCD	1	50	12-12-2022
51	Introduction to environmental management systems (EMS)	L+D,PS	BB	1	51	13-12-2022
52	Fundamentals of EMS	L+D,PS	BB	1	52	16-12-2022
53	EMS under ISO 14001 with examples	L+D,PS	BB	1	53	19-12-2022
54	Discussion on cost involved in EMS	L+D,PS	BB	1	54	20-12-2022
55	Process/stages in EMS, Case studies	L+D,PS	BB	1	55	31-12-2022

Text Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)

- Total Quality Management Dale H. Besterfield Pearson Education India, Edition 03. ISBN: 8129702606
- Total Quality Management for Engineers M. Zairi Wood head Publishing ISBN:185573024

Reference Books:

- Managing for Quality and Performance Excellence James R. Evans and William M Lindsay Cengage Learning. 9th edition
- Four revolutions in management Shoji Shiba, Alan Graham, David Walden Oregon 1990
- Organizational Excellence through TQM H. Lal New age Publications 200864
- Engineering Optimization Methods and Applications A Ravindran, K, M. Ragsdell Willey India Private Limited 2nd Edition,2006

Web Materials:

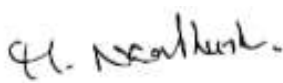
- ✓ <https://www.azdocuments.in/2021/05/TQM-management-18me734.html>

Details of the teaching aids:

1. PPT & Video presentation



Signature of Course In-Charge



Signature of Module Coordinator



Signature of HOD
Head of the Department
Dept. of Mechanical Engg.
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Signature of Principal
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KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN 2022-23 ODD SEMESTER

NAME OF THE STAFF : Mr.MANJUNATHA.B.R
COURSE CODE/TITLE 18ME741 / ADDITIVE MANUFACTURING
SEMESTER/YEAR : VII/ IV
ACADEMIC YEAR : 2023-2024

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: Introduction and basic principles						
1	Introduction and basic principles: Need for Additive Manufacturing	L+D	BB	1	1	11/09/2023
2	Generic AM process, stereolithography or 3dprinting, rapid prototyping	L+ D	BB	1	2	12/09/2023
3	The benefits of AM, distinction between AM and CNC machining	L+ D	BB	1	3	13/09/2023
4	Other related technologies- reverse engineering technology.	L+D	BB	1	4	13/09/2023
5	Development of Additive Manufacturing Technology: Introduction, computers	L+ D	BB	1	5	15/09/2023
6	computer-aided design technology ,other associated technologies, the use of layers,	L+ D	BB	1	6	19/09/2023
7	classification of AM processes, metal systems, hybrid systems, milestones in AM development.	L+D,	BB	1	7	20/09/2023
8	Additive Manufacturing Process chain: Introduction,	L+D	BB	1	8	20/09/2023
9	the eight steps in additive manufacture,,	L+D	BB	1	9	22/09/2023
10	Steps in AM	L+D	BB	1	10	25/09/2023
11	Variations from one AM machine to another ,metal	L+D	BB	1	11	26/09/2023

	systems					
12	Compressors. Structure of pneumatic control System	L+D	LCD	1	12	27/09/2023
13	Maintenance of equipment, materials handling issues, design for AM, and application areas.	L+D	LCD	1	13	27/09/2023
Module 2: Photo polymerization process						
14	Photo polymerization processes: Stereolithography (SL), Materials, SL resin curing process	L+D,	LCD	1	14	30/09/2023
15	Micro-stereolithography, Process Benefits and Drawbacks, Applications of Photo polymerization Processes.	L+D,	BB	1	15	30/09/2023
16	Powder bedfusion processes: Introduction, Selective laser Sintering (SLS)	L+D	BB	1	16	03/10/2023
17	Materials, Powder fusion mechanism, SLS Metal and ceramic part creation, Electron Beam melting (EBM), Process Benefits and Drawbacks, Applications of Powder Bed Fusion Processes.	L+D	BB	1	17	04/10/2023
18	Extrusion-based systems: Fused Deposition Modelling (FDM), Principles, Materials, Plotting and path control,	L+D	LCD	1	18	04/10/2023
19	Bio-Extrusion, Process Benefits and Drawbacks	L+D	LCD	1	19	06/10/2023
20	Applications of Extrusion-Based Processes.	L+D	BB	1	20	06/10/2023
21	Printing process modeling, material modification	L+D	BB	1	21	09/10/2023
Module 3: Printing Processes						
22	Printing Processes: evolution of printing as an additive manufacturing process	L+D	BB	1	22	10/10/2023
23	Research achievements in printing deposition, technical challenges of printing	L+D	BB	1	23	11/10/2023
24	Printing process modeling, material modification	L+D	BB	1	24	11/10/2023
25	Three-dimensional printing, advantages of binder printing .	L+D	BB	1	25	13/10/2023
1ST INTERNAL ASSESSMENT						

26	Sheet Lamination Processes: Introduction	L+D	BB	1	26	30/10/2023
27	Sheet Lamination Processes: Materials	L+D	BB	1	27	31/10/2023
28	Laminated Object Manufacturing (LOM)	L+D	BB	1	28	3/11/2023
29	Ultrasonic Consolidation (UC),	L+D	BB	1	29	6/11/2023
30	Gluing, Thermal bonding, LOM	L+D	BB	1	30	7/11/2023
31	UC applications.	L+D	BB	1	31	7/11/2023
32	Introduction, general beam deposition process	L+D	BB	1	32	8/11/2023
33	Description material delivery, BD systems	L+D	BB	1	33	8/11/2023
34	Process parameters, typical materials and microstructure	L+D	BB	1	34	10/11/2023
35	Processing–structure–properties relationships, BD benefits and drawbacks	L+D	BB	1	35	13/11/2023
36	Direct Write Technologies: Background ,ink - basedDW,laser transfer	L+D	LCD	1	36	15/11/2023
37	DW beam deposition, DW liquid-phase direct deposition.	L+D	LCD	1	37	15/11/2023
Module 4: Guidelines for Process Selection						
38	Guidelines for Process Selection: Introduction	L+D	BB	1	38	17/11/2023
39	Challenges of selection, example system for preliminary selection, production planning and control.	L+D	BB	1	39	20/11/2023
40	Software issues for Additive Manufacturing: Introduction, preparation of cad models	L+D	BB	1	40	21/11/2023
41	STL file, problems with STL files, STL file manipulation.	L+D	BB	1	41	22/11/2023
42	Post- Processing: Support material removal, surface texture improvements,	L+D	BB	1	42	22/11/2023
1ST INTERNAL ASSESSMENT						
43	Preparation for use as a pattern,	L+D	BB	1	43	27/11/2023
44	Property enhancements using non-thermal techniques and thermal techniques.	L+D	LCD	1	44	27/11/2023
Module 5: The use of multiple materials in additive manufacturing:						
45	The use of multiple materials in additive	L+D	LCD	1	45	28/11/2023

	manufacturing: Introduction, multiple material approaches					
46	Discrete multiple material processes, porous multiple material processes	L+D	BB	1	46	28/11/2023
47	Blended multiple material processes, commercial applications using multiple materials, future directions	L+D	BB	1	47	29/11/2023
48	AM Applications: Functional models, Pattern for investment and vacuum casting	L+D	BB	1	48	29/11/2023
49	Medical models, art models, Engineering analysis models, Rapid tooling, new materials development	L+D	BB	1	49	04/12/2023
50	Bi-metallic parts, Re- manufacturing. Application: Examples for Aerospace, defense, automobile, Bio-medical and general engineering industries.	L+D	BB	1	50	05/12/2023
51	Align Technology, siemens and phonak	L+D	LCD	1	51	06/12/2023
52	Re- manufacturing. Application			1	52	06/12/2023
53	Examples for Aerospace, defense, automobile, Bio-medical and general engineering industries	L+D	BB	1	53	08/12/2023
54	Align Technology	L+D	LCD	1	54	11/12/2023
55	Siemens and phonak	L+D	BB	1	55	12/12/2023
56	DDM drivers, manufacturing vs. prototyping, life-cycle costing,	L+D	BB	1	56	12/12/2023
57	future of direct digital manufacturing	L+D	BB	1	57	19/12/2023
58	REVISION	L+D	BB	1	58	20/12/2023
59	REVISION	L+D	BB	1	59	22/12/2023

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