K S INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF APPLIED SCIENCES & HUMANITIES

LESSON PLAN 2022-23 ODD SEMESTER

even

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=DmCltf8ypks&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)

Details of the teaching aids:

1. BLACK BOARD USAGE
2. SELF STUDY

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 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

						13/06/2023
12	Solving Divide and Conquer using Master's theorem	L+D	BB	2	20	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)					
						10/06/2023
14	Divide and Conquer algorithms and complexity Analysis of binary search	L+D	BB	1	22	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**: Huffman 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 back tracking 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 ofDelivery	Teaching Aid	No. ofPeriods	Cumulative No.ofPeriods	ProposedDate
	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	LabSession-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	LabSession-2HR	4	B1:30/05/2023B2:26/05/2023B3:25/05/2023
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	LabSession-2HR	6	B1:06/07/2023B2:02/06/2023B3:01/06/2023

	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 = {Sl, S2,..., Sn} 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, CliffordStein, 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**

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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_OQAeuVcp2O
- https://www.youtube.com/watch?v=783KAB- tuE4&list=PLIemF3uozcAKTgsCIj82voMK3TMR0YE_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** **Signature of Principal**

Head of the Department
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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 perflourocarbons (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	Perflourocarbons (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://freevideolectures.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	Signature of Principal
		Head of the Department Artificial Intelligence & Machine Learning K.S. Institute of Technology Bengaluru - 560 109	PRINCIPAL K.S. INSTITUTE OF TECHNOLOGY 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 : 3/4/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 Fn = Fn-1 + Fn-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	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: 19/07/23 B2: 20/07/23 B3: 21/07/23
6	**LAB TEST-1**		B1: 03/07/23 B2: 04/07/23 B3: 05/07/23
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: 11/07/23 B3: 12/07/23
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: 17/07/23 B2: 18/07/23 B3: 19/07/23
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: 24/07/23 B2: 25/07/23 B3: 26/07/23
10	a) Write a python program to download all the 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: 08/08/23 B3: 09/08/23
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: 14/08/23 B2: 22/08/23 B3: 16/08/23
12	**LAB TEST-2**		B1: 11/09/23 B2: 12/09/23 B3: 13/09/23

Signature of course Incharge **Signature of Module Coordinator** **Signature of HOD** **PRINCIPAL**

Head of the Department
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BENGALURU - 560 109

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 ofDelivery	Teaching Aid	No. ofPeriods	Cumulative No.ofPeriods	ProposedDate
	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 NaidhruvaEdutech Learning Solutions, Bengaluru-2022
2. **Introduction to the Constitution of India (Students edition),** by Durga Das (DD Basu) Prentice Hall 2008.

Reference Books:
" Constitution of India, Professional Ethics and Human Rights" by shubham Singles, Charles E Haries and et al: published by cengage learning, Latest Edition 2019. 2. "The Constitution of India" by Merunandan K B :Pub;lished by Meragu Publication Second Edition, Bengaluru. 3. "SamvidhanOdu"-for students and Youths by Justice H N Nagamohan Das, SahayanaKerekon 4. M Govindarajan, S. Natarajan, V S Senthilkumar, "Engineering Ethics", Prentice Hall, 2004
Useful websites:
Useful Journals:
Teaching and Learning Methods: 1. Lecture class 2. Self-study 3. Field visits/Group Discussions/Seminars
Type of test/examination (For 2022 scheme) **Continuous Internal Evaluation(CIE) :50 marks** **Semester End Exam(SEE) :**

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

Head of the Dept.
Dept. of Science and Humanities
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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

Signature of course Incharge **Signature of Module Coordinator** 2/8/23 **Signature of HOD** 2/8/23

Head of the Department
Artificial Intelligence & Machine Learning
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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. JeevanVidya: EkParichaya, A Nagaraj, JeevanVidyaPrakashan, 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 Co-ordinator	Signature of HOD	Signature of Principal
		Head of the Department Artificial Intelligence & Machine Learning K.S. Institute of Technology Bengaluru - 560 109	PRINCIPAL K.S. INSTITUTE OF TECHNOLOGY BENGALURU - 560 109.

K S Institute of Technology

Deparment 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++, • Arithmetic operators • Assignment operators • Comparison operators • Logical operators • Bitwise operators	7/18/2023
23	1KS21AI023	KAVYA S	C+ +Control Statement with examples	7/18/2023
24	1KS21AI024	KEERTHANA R	C++ Preprocessors,Defining Mmeber 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	1KS21AI053	THRYAKSHARI S	Tokens – variables ,Keywords – Identifiers and constants in c++	8/4/2023
53	1KS21AI054	VARNIKA V N	Derived class Constructors,Overloading array index operator [Operator overloading in c++ with syntax and exmaple,	8/4/2023
54	1KS21AI055	VENKATESH T	Function prototyping – Call by reference ,. Structure vs class Static data members in C++	8/4/2023
55	1KS21AI056	VINITH P	Classes for File stream operations,	8/8/2023
56	1KS21AI057	ZUHA SUHAIL	Classes in complete detail, Tokens – variables ,Keywords – Identifiers and constants in c++	8/8/2023
57	1KS21AI058	CHIRAG S	Types of Inheritance- Defining Derived classes, Single Inheritance,Multiple inheritance in c++	8/8/2023
58	1KS20AI024	MOHAMMED ZEESHAN	Access Specifiers and their Scope	8/8/2023
59	1KS20AI029	PAVAN.A	Access Modifiers ,polymorphism ,compile time polymorphism,Run-time polymorphism	8/8/2023
60	1KS20AI040	SYED AASIM HUBAIRA	Derived class Constructors,Overloading array index operator [Operator overloading in c++ with syntax and exmaple,	8/8/2023
61	1KS22AI400	AVINASH P	Templates in c++,Friend functions in c++,	8/8/2023
62	1KS22AI402	K JHAHNAVI	Local Class 'Nested Classes,1. When are static objects destroyed? Is it possible to call the constructor	8/8/2023
63	1KS22AI403	RISHI S	Abstract classes in c++	8/8/2023
64	1KS22AI404	SAHU DURGAMADHAB SARATKUMAR	Function overloading,operator overloading	8/8/2023
65	1KS22AI405	SANJAY K U	Inheritance in c++ with single inheritance,Multiple inheritance in c++,Hierarchical Inheritance,	8/8/2023
66	1KS22AI401	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	1KS22AI406	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

HOD

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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**

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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, 2ndEdition, 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**

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LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : ABHILASH L BHAT

COURSE CODE/TITLE : 18AI63/JAVA FOR MOBILE APLICATIONS

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 Programatically				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, 1stEdition, 2015
2. Dawn Griffiths & David Griffiths, Head First Android Development, O'Reilly, 1stEdition, 2015

Details of the teaching aids:

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

Course Incharge

Module coordinator

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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** **05-05-23**
24	Introduction to Server-Side Development with PHP	L+D+I	BB+PPT	1	27	**19-05-23**
25	What is Server-Side Development, A Web Server's Responsibilities	L+D+I	BB+PPT	1	28	**22-05-23**
26	Quick Tour of PHP	L+D+I	BB+PPT	1	29	**23-05-23**
27	Program Control, Functions	L+D+I	BB+PPT	1	30	**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/Edition 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** **Signature of Principal**

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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: 12/0423 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: 26/0423 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: 25/0423
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

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K S INSTITUTE OF TECHNOLOGY BENGALURU
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

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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 atthe 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 aCalculator 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 happenbased 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 imageshould 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 parsethe 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. Createa 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

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