K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109

DEPARTMENT OF COMPUTER AND COMMUNICATION ENGINEERING

LESSON PLAN 2024-25 ODD SEMESTER

COURSE INCHARGE : **Prof. D SARITHA**

COURSE TYPE / CODE / TITLE : **PCC / BCS501**
SOFTWARE ENGINEERING & PROJECT MANAGEMENT

YEAR/ SEMESTER/SECTION : **III / 5TH / 'A' section**

BRANCH : **CCE**

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	Module 1					
1	Software and Software Engineering: The nature of Software	L+I	BB	1	1	01/10/24
2	The unique nature of WebApps, Software Engineering	L+I	BB	1	2	01/10/24
3	The software Process, Software Engineering Practice, Software Myths.	L+I	BB	1	3	03/10/24
4	Process Models: A generic process model, Process assessment and improvement,	L+I	BB	1	4	03/10/24
5	Prescriptive process models: Waterfall model, Incremental process models,	L+I	BB	1	5	4/10/24
6	Concurrent models, Specialized process models	L+I	BB	1	6	04/10/24
7	Unified Process	L+I	BB	1	7	07/10/24

8	Personal and Team process models	L+I	BB	1	8	08/10/24
	Module-2					
9	Understanding Requirements: Requirements Engineering	L+I	BB	1	9	09/10/24
10	Establishing the ground work, Eliciting Requirements	L+I	BB	1	10	18/10/24
11	Building the requirements model, Developing use cases Negotiating Requirements, Validating Requirements	L+I	BB	1	11	21/10/24
	First Internals 14/15/16 October 2024					
12	Requirements Modeling Scenarios, Information and Analysis classes:	L+I	BB	1	12	22/10/24
13	Requirement Analysis, Scenario based modeling UML models that supplement the Use Case	L+I	BB	1	13	23/10/24
14	Data modeling Concepts, Class-Based Modeling	L+I	BB	1	14	25/10/24
15	Requirement Modeling Strategies: Flow oriented Modeling	L+I	BB	1	15	26/10/24
16	Behavioral Modeling	L+I	BB	1	16	28/10/24
	Module-3					
17	Agile Development: What is Agility?	L+I	BB	1	17	29/10/24
18	Agility and the cost of change What is an agile Process?	L+I	BB	1	18	30/10/24
19	Extreme Programming (XP)	L+I	BB	1	19	04/11/24
20	Other Agile Process Models A tool set for Agile process	L+I	BB	1	20	05/11/24
21	Principles that guide practice:	L+I	BB	1	21	06/11/24

22	Principles that guide practice:	L+I	BB	1	22	08/11/24
23	Software Engineering Knowledge	L+I	BB	1	23	15/11/24
24	Core principles, Principles that guide each framework activity.	L+I	BB	1	24	19/11/24
	Module -4					
25	Introduction to Project Management: Introduction Project and Importance of Project Management,	L+I	BB	1	25	20/11/24
26	Contract Management, Activities Covered by Software Project Management	L+I	BB	1	26	22/11/24
27	Plans, Methods and Methodologies	L+I	BB	1	27	23/11/24
	Second Internals 12/13/14 Dec 2024					
28	Some ways of categorizing Software Projects, Stakeholders	L+I	BB	1	28	25/11/24
29	Setting Objectives, Business Case	L+I	BB	1	29	26/11/24
30	Project Success and Failure, Management and Management Control	L+I	BB	1	30	27/11/24
31	Project Management life cycle Traditional versus Modern Project Management Practices.	L+I	BB	1	31	29/11/24
32	Project Evaluation: Evaluation of Individual projects Risk Evaluation	L+I	BB	1	32	30/11/24
	Module-5					
33	Software Quality: Introduction	L+I	BB	1	33	02/12/24
34	The place of software quality in project planning	L+I	BB	1	34	03/12/24
35	Importance of software quality	L+I	BB	1	35	03/12/24

36	Defining software quality	L+I	BB	1	36	04/12/24
37	Software quality models,product versus process quality management.	L+I	BB	1	37	06/12/24
38	Software Project Estimation	L+I	BB	1	38	06/12/24
39	Observations on Estimation	L+I	BB	1	39	09/12/24
40	Observations on Estimation.Decomposition Techniques	L+I	BB	1	40	09/12/24
41	Empirical Estimation Models.	L+I	BB	1	41	10/12/24
	Third Internals 14/15/16 Jan 2025					
42	Revision	L+I	BB	1	42	11/12/24

Text Books:

1. Roger S. Pressman: Software Engineering-A Practitioners approach, 7th Edition, Tata McGraw Hill.
2. Bob Hughes, Mike Cotterell, Rajib Mall: Software Project Management, 6th Edition, McGraw Hill Education, 2018.

Reference Book:

3. Pankaj Jalote: An Integrated Approach to Software Engineering, Wiley India, 4. "Software Engineering: Principles and Practice", Hans van Vliet, Wiley India, 3rd Edition, 2010.

Web links and Video Lectures (e-Resources):

- https://onlinecourses.nptel.ac.in/noc20_cs68/preview
- https://onlinecourses.nptel.ac.in/noc24_mg01/preview

Details of the teaching aids:

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

Signature of the Course In-Charge

Signature of the Module Coordinator

Signature of the HOD

Head of the Department
Dept. of Computers and Communication Engg.
K. S. Institute of Technology
Bengaluru - 560 109.

Signature of the PRINCIPAL

K.S.INSTITUTE OF TECHNOLOGY, BENGALURU-560109

DEPARTMENT OF COMMUNICATION AND ENGINEERING

NAME OF THE STAFF : SHASHIKALA H. C.

SUBJECT CODE/NAME : BCM502 / DATA COMMUNICATION

SEMESTER/ SEC / YEAR : V/ A/ III

ACADEMIC YEAR : 2024-2025

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	Module1					
1	**Introduction:** Data Communications,	L+ D	BB	1	1	17/09/2024
2	Networks, Network Types	L+ D	BB + LCD	1	2	18/09/2024
3	**Networks Models:** Protocol Layering	L+ D	BB + LCD	1	3	19/09/2024
4	TCP/IP Protocol suite, The OSI model	L+D	BB + LCD	1	4	20/09/2024
5	**Introduction to Physical Layer-1:** Data and Signals	L+D	BB + LCD	1	5	24/09/2024
6	Digital Signals	L+ D	BB + LCD	1	6	25/09/2024
7	Transmission Impairment	L+ D	BB + LCD	1	7	26/09/2024
8	Data Rate limits	L+ D	BB + LCD	1	8	27/09/2024
9	Performance. Internet History	L+D	BB + LCD	1	9	28/09/2024
10	Standards and Administration	L+D	BB + LCD	1	10	01/10/2024
Prog1	**Study and discussion on various Computer network commands such as Ping, Netstat, Tracert, ARP, Nbtstat, Netsh and execution of the commands.**		**BB+LCD**	**3**	**B2**	**23/09/2024**
			BB+LCD	**3**	**B1**	**25/09/2024**

Prog 2	**Installation and Setup of Packet Tracer Tool. Study and execution of basic commands of Packet Tracer such as Traceroute, ifconfig, Telnet and others.**		**BB+LCD**	**3**	**B2**	**30/10/2024**
			BB+LCD	**3**	**B1**	**09/10/2024**
	Module–2					
11	**Digital Transmission**: Digital to digital conversion: Line coding: Polar, Bipolar	L+D	BB + LCD	1	11	03/10/2024
12	Manchester coding, AMI , Pseudo ternary.	L+D	BB + LCD	1	12	04/10/2024
13	**Physical Layer-2:** Analog to digital conversion	L+D	BB + LCD	1	13	08/10/2024
14	Pulse Code Modulation	L+D	BB + LCD	1	14	09/10/2024
15	Delta Modulation	L+D	BB + LCD	1	15	10/10/2024
	IA-1 14/09/2024					
16	Transmission Modes	L+D	BB + LCD	1	16	18/10/2024
17	**Analog Transmission**: Digital to analog conversion ASK, FSK	L+D	BB + LCD	1	17	22/10/2024
18	PSK, QPSK	L+D	BB + LCD	1	18	23/10/2024
19	**Bandwidth Utilization**: Multiplexing FDM	L+D	BB + LCD	1	19	24/10/2024
20	TDM, CDM	L+D	BB + LCD	1	20	25/10/2024
Prog3	**Initialization and Setting up a Router with Encryption in Packet Tracer.**		**BB+LCD**	**3**	**B2**	**0710/2024**
			BB+LCD	**3**	**B1**	**23/10/2024**
Prog4	**Designing and Implementing LAN using subnetting**		**BB+LCD**	**3**	**B2**	**21/10/2024**
			BB+LCD	**3**	**B1**	**30/10/2024**
	Module-3					
21	**Transmission Media:** Introduction, Guided Media: Twisted Pair Cable, Coaxial Cable	L+D	BB + LCD	1	21	26/10/2024
22	Fiber OpticsCable	L+D	BB + LCD	1	22	29/10/2024
23	**Switching**: Introduction, Circuit Switched Networks	L+D	BB + LCD	1	23	05/11/2024
24	Packet switching	L+D	BB + LCD	1	24	06/11/2024
25	Virtual Circuit packet switching network	L+D	BB + LCD	1	25	07/11/2024
26	**Data Link Layer:** Error Detection	L+D	BB + LCD	1	26	08/11/2024
27	And Correction	L+D	BB + LCD	1	27	09/11/2024
	IA – 2 11/11/2024					

28	Introduction, Block Coding	L+D	BB + LCD	1	28	14/11/2024
29	Cyclic Code	L+D	BB + LCD	1	29	15/11/2024
30	Checksum	L+D	BB + LCD	1	30	19//11/2024
Prog 5	**Create two subnets and implement it with calculated subnet masking.**		**BB+LCD**	**3**	**B2**	**28/10/2024**
			BB+LCD	**3**	**B1**	**06/11/2024**
Prog 6	**Simulation and study of networks using routers.**		**BB+LCD**	**3**	**B2**	**04/11/2024**
			BB+LCD	**3**	**B1**	**20/11/2024**
	Module-4					
31	**Data link control**: DLC Services: Framing	L+D	BB + LCD	1	31	20/11/2024
32	Flow Control, Error Control	L+D	BB + LCD	1	32	21/11/2024
33	Connectionless and Connection Oriented	L+D	BB + LCD	1	33	22/11/2024
34	High Level Data Link Control (HDLC)	L+D	BB + LCD	1	34	23/11/2024
35	Media Access control: Aloha	L+D	BB + LCD	1	35	24/11/2024
36	CSMA, CSMA/CD	L+D	BB + LCD	1	36	25/11/2024
37	CSMA/CA	L+D	BB + LCD	1	37	26/11/2024
38	Random Access	L+D	BB + LCD	1	38	27/11/2024
39	Controlled Access	L+ D	BB + LCD	1	39	28/11/2024
40	Channelization	L+ D	BB + LCD	1	40	30/11/2024
Prog7	**Setting a local server for access of files.**		**BB+LCD**	**3**	**B2**	**25/11/2024**
			BB+LCD	**3**	**B1**	**27/12/2024**
	Module-5					
41	**Wired LANs Ethernet**: Ethernet Protocol, Standard Ethernet	L+ D	BB + LCD	1	41	02/12/2024
42	Fast Ethernet	L+ D	BB + LCD	1	42	03/12/2024
43	Gigabit Ethernet	L+ D	BB + LCD	1	43	04/12/2024
44	10Gigabit Ethernet	L+ D	BB + LCD	1	44	05/12/2024
45	Wireless LANs: Introduction IEEE 802.11 Project	L+ D	BB + LCD	1	45	06/12/2024
46	Bluetooth	L+ D	BB + LCD	1	46	09/12/2024
47	WiMAX	L+ D	BB + LCD	1	47	10/12/2024
48	CellularTelephony	L+ D	BB + LCD	1	48	10/12/2024
Prog 8	**Data Transmission through wired and wireless communication without any outside support.**		**BB+LCD**	**3**	**B2**	**02/12/2024**
			BB+LCD	**3**	**B1**	**04/12/2024**
	IA-3 16/12/2024					

Total Number of Hours for both(Theory-50+lab- 24)= 74 HR

TEXT BOOK:

1. Behrouz A. Forouzan, Data Communications and Networking, 5th Edition, Tata McGraw-Hill,2013.

REFERENCES:

1. Larry L. Peterson and Bruce S. Davie: Computer Networks –A Systems Approach, 4th Edition, Elsevier, 2019.
2. Nader F. Mir: Computer and Communication Networks, 2nd Edition, Pearson Education, 2015.
3. William Stallings, Data and Computer Communication 10th Edition, Pearson Education, Inc., 2014.

Details for the teaching Aids

1. https://www.digimat.in/nptel/courses/video/106105183/L01.html
2. http://www.digimat.in/nptel/courses/video/106105081/L25.html
3. https://nptel.ac.in/courses/10610

Signature of course In-charge **Signature of Module Coordinator** **Signature of HOD** **Signature of Principal**

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DEPARTMENT OF COMPUTER AND COMMUNICATION ENGINEERING
LESSON PLAN 2024-25 ODD SEMESTER

COURSE INCHARGE : T NAGAJYOTHI

COURSE TYPE / CODE / TITLE : BCS503/THEORY OF COMPUTATION

YEAR/ SEMESTER/SECTION : III/V/A

BRANCH : CCE

ACADEMIC YEAR :2024-2025

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 FINITE AUTOMATA	L+D+I	PPT/BB	1	1	17/9/2024
2	WHY AUTOMATA AND ITS APPLICATIONS	L+D+I	PPT/BB	1	2	18/09/24
3	STRUCTURAL REPRESENTATION	L+D+I	PPT/BB	1	3	19/09/24
4	CENTRAL CONCEPTS OF AUTOMATA THEORY	L+D+I	BB	1	4	20/09/2024
5	DETERMINISTIC FINITE AUTOMATA	L+D+I	BB	1	5	23/09/2024

6	PATTERN RECOGNITION PROBLEMS STEPS	L+D+I	BB	1	6	24/09/2024
7	DFA RELATES PROBLEMS –ACCEPT STRINGS STARTING WITH ab --ACCEPT STRINGS ENDING WITH ab --DFA TO ACCEPT STRINGS ENDING WITH abb	L+D+I	BB	1	7	25/09/2024
8	PROBLEMS -DFA TO ACCEPT A SUBSTRING aab -DFA TO ACCEPT A STRING ENDING WITH ab or ba	L+D+I	BB	1	8	27/09/2024 28/9/2024
9	DIVISIBLE BY K PROBLEMS -DFA TO ACCEPT A BINARY NUMBER DIVISIBLE BY 5 -DFA TO ACCEPT DECIMAL STRINGS DIVISIBLE BY 3	L+D+I	BB	1	9	3/10/2024
10	MODULO-K-COUNTER PROBLEMS -DFA TO ACCEPT THE |W|MOD3 =0 -DFA TO ACCEPT |W|MOD5!=0 DFA TO ACCEPT EVEN NUMBER OF A'S AND EVEN NUMBER OF B'S	L+D+I	BB	1	10	4/10/2024
11	WHY NFA,NFA RELATED 2 PROBLEMS	L+D+I	BB	1	11	7/10/2024
12.	CONVERSION FROM NFA TO DFA --SUBSET CONSTRUCTION METHOD --LAZY EVALUATION METHOS	L+D+I	BB	1	12	8/10/24
13	FINITIE AUTOMATA WITH EPSILON TRANSITIONS	L+D+I	BB	1	13	9/10/24
	Module 2					
11	REGULAR EXPRESSION,FINITE AUTOMATA AND REGULAR EXPRESSIONS	L+D+I	BB	1	14	10/10/2024
12	PUMPING LEMMA THEOREM AND PROOF	L+D+I	BB	1	15	18/10/2024
13	PROVING LANGUAGES ARE NOT REGULAR	L+D+I	BB	1	16	21/10/2024
14.	CLOSURE PROPERTIES OF REGULAR LANGUAGES	L+D+I	BB	1	17	22/10/2024

15.	EQUIVALENCE AND MINIMIZATION OF AUTOMATA	L+D+I	BB	2	19	23/10/2024 24/10/2024
16	APPLICATIONS OF REGULAR EXPRESSIONS	L+D+I	BB	1	20	25/10/2024
	Module 3					
17	CONTEXT FREE GRAMMARS	L+D+I	BB	1	21	26/10/2024
18	PARSE TREES	L+D+I	BB	1	22	28/10/2024
19	AMBIGUITY IN GRAMMARS AND LANGUAGES	L+D+I	BB	1	23	29/10/2024
20	DEFINITION OF THE PUSHDOWN AUTOMATA	L+D+I	BB	1	24	30/10/2024
21	LANGUAGES OD PDA	L+D+I	BB	1	25	4/11/2024
22	EQUIVALENCE OD PDA'S AND CFG'S	L+D+I	BB	2	27	5/11/2024 6/11/2024
23	DETERMINISTIC PUSHDOWN AUTOMATA	L+D+I	BB	1	28	7/11/2024
	Module 4					
21	NORMAL FORMS FOR CONTEXTFREE GRAMMARS	L+D+I	BB	2	30	8/11/2024 9/11/2024
22	PUMPING LEMMA FOR CONTEXT FREE LANGUAGES	L+D+I	BB	3	33	14/11/2024 15/11/2024 19/11/2024
23	CLOSURE PROPERTIES OF CONTEXT-FREE LANGUAGES	L+D+I	BB	4	34	20/11/2024 21/11/2024 22/11/2024 23/11/2024
	Module 5					
26	INTRODUCTION TO TURING MACHINES	L+D+I	BB	1	35	25/11/2024
27	PROBLEMS THAT COMPUTERS CANNOT SOLVE	L+D+I	BB	1	36	26/11/2024
28	PROGRAMMING TECHNIQUES FOR TURING MACHINES	L+D+I	BB	3	38	27/11/2024 28/11/2024

						29/11/2024
29	AN EXTENSION TO BASIC TURING MACHINES	L+D+I	BB	2	40	30/11/2024 2/12/2024 3/12/2024 4/12/2024
30	A LANGUAGE THAT IS NOT RECURIVELY ENUMERABLE	L+D+I	BB	2	42	5/12/2024 6/12/2024
31	REVISION OF CERTAIN PROBLEMS IN PREVIOUS YEAR QUESTION PAPERS	L+D+I	BB	3	45	9/12/2024 10/12/2024 20/12/2024

REFERENCES:

1. **JOHN E HOPCROFT,RAJEEV MOTWANI,ULLMAN M,"INTRODUCTION TO AUTOMATA THEORY,LANGUAGES AND COMPUTATION"SECOND EDITION ,PEARSON**
2. **K.L.P.MISHRA,N.CHANDRASHEKARAN,THEORY OF COMPUTER SCIENCE.**
3. **INTRODUCTION TO THE THEORY OF COMPUTATION-MICHAEL SIPSER**

Course Incharge **Module coordinator** **HOD** **Principal**

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DEPARTMENT OF COMPUTER AND COMMUNICATION ENGINEERING
LESSON PLAN 2024-25(ODD)

NAME OF THE STAFF : **Shilpa M.**
SUBJECT CODE/NAME : **BCOL504 / EMBEDDED C LAB**
SEMESTER/YEAR/SEC : **V/ III / 'A'**
ACADEMIC YEAR : **2024-2025(ODD)**

Sl. No.	Topic to be covered	Teaching Aid	No. of Periods	Batch	Proposed Date
1	Develop a program that reads the status of simulated push-button switches connected to I/O ports and controls the state of LEDs connected to other I/O ports based on the button presses. Use the I/O Port Simulation dialog to interact with the virtual hardware.	BB+LCD	3	A	23/9/2024
		BB+LCD	3	B	25/9/2024
2	Develop a program to simulate the reading of an analog voltage signal using the A/D Converter. The program should display the converted digital value on a virtual serial terminal. Experiment with different analog inputs using the simulation settings and observe the corresponding digital outputs.	BB+LCD	3	A	14/10/2024
		BB+LCD	3	B	23/10/2024
3	Develop a program that generates a digital waveform (e.g., a sine wave, triangle wave, or square wave) and converts it to an analog signal using the D/A Converter. Use the simulator to monitor the output waveform and verify its characteristics.	BB+LCD	3	A	28/10/2024
		BB+LCD	3	B	30/10/2024

4	Write a program to configure a timer to generate an interrupt every 1 second, toggling an LED each time the interrupt occurs. Use the Timer/Counter Simulation feature to monitor the timer's operation and adjust its settings.	BB+LCD	3	A	4/11/2024
		BB+LCD	3	B	6/11/2024
5	Develop a program that periodically resets the Watchdog Timer during normal operation. Simulate a situation where the program gets stuck in an infinite loop, and observe the Watchdog Timer reset the system. Use the simulation to determine the appropriate reset interval.	BB+LCD	3	A	4/11/2024
		BB+LCD	3	B	6/11/2024
6	Develop a program that uses the capture/compare unit to measure the duration of an input pulse signal. Use the simulator to generate various pulse widths and observe how the capture/compare unit measures them accurately.	BB+LCD	3	A	23/11/2024
		BB+LCD	3	B	20/11/2024
7	Develop a program that sends and receives data over UART. Use the Serial Communications Simulation window to send data to the microcontroller and receive responses. Experiment with different baud rates and message formats.	BB+LCD	3	A	25/11/2024
		BB+LCD	3	B	27/11/2024
8	Develop a program that configures the microcontroller as an SPI master and communicates with a simulated SPI slave device. Use the SPI Communications Simulation feature to observe the data exchange and verify timing and synchronization.	BB+LCD	3	A	2/12/2024
		BB+LCD	3	B	4/12/2024
9	Develop a program that writes data to and reads data from the on-chip FLASH memory. Use the FLASH Memory Simulation to monitor memory contents in real-time and simulate various read/write operations.	BB+LCD	3	A	2/12/2024
		BB+LCD	3	B	4/12/2024

10	Content beyond Syllabus - Stepper motor interfacing to rotate the motor in clockwise and anti-clockwise direction using 8051 microcontroller kit.	BB+LCD	3	A	9/12/2024
		BB+LCD	3	B	9/12/2024

Details for the teaching Aids

BB-Black Board

LCD-Projector

Shilpa M
Course In charge

HOD CCE

PRINCIPAL

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K S INSTITUTE OF TECHNOLOGY BENGALURU

DEPARTMENT OF COMPUTER COMMUNICATION & ENGINEERING

LESSON PLAN 2024-25(ODD)

NAME OF THE STAFF : **Shilpa M.**
SUBJECT CODE/NAME : **BCE515B/ EMBEDDED SYSTEMS**
SEMESTER/YEAR/SEC : **V/ III / 'A'**
ACADEMIC YEAR : **2024-2025(ODD)**

Sl No	Topic covered	Teaching Aid	No. of Periods	Cumulative number of periods	Proposed date
	Module 1 - Introduction to Embedded systems				
1	What is an Embedded system General purpose v/s Embedded systems Classification of Embedded systems Major Application area of Embedded systems Purpose of Embedded systems	BB+LCD	1	1	17/09/2024
2	Memory - Program storage memory and Read write memory	BB+LCD	1	2	18/09/2024
3	Sensors and Actuators The I/O subsystem - Seven segment LED ,Optocoupler	BB+LCD	1	3	23/09/2024
	Stepper motor, Relay, Piezo buzzer, Push button switch.		1	4	24/09/2025
	Keyboard, Programmable Peripheral Interface		1	5	24/09/2025
4	Communication Interface Onboard Comm Interface - I2C, SPI, UART	BB+LCD	2	7	26/09/2024 27/09/2024

	External Comm INterface - RS232, USB, Infrared, Bluetooth , Wifi, Zigbee, GPRS		1	8	27/09/2024
	Embedded firmware (Beyond syllabus)		1	9	1/10/2024
	Module 2 : Attributes of Embedded system				
1	Characteristics of an embedded systems Quality attributes of Embedded systems	BB+LCD	1	10	1/10/2024
2	Washing machine - Application specific embedded systems.	BB+LCD	1	11	3/10/2024
3	Automotive domain specific examples of Embedded systems	BB+LCD	1	12	7/10/2024
4	Factors to be considered in selecting a controller Module revision	BB+LCD	1	13	7/10/2024
5	The integrated development environment (IDE)- to be integrated in lab sessions	BB+LCD	1	14	8/10/2024
	Module 3 : Hardware Software co-design and Program Modelling				
1	Fundamentals issues in Hardware and software co-design	BB+LCD	1	15	8/10/2024
2	Computational models - DFG and CDFG	BB+LCD	1	16	9/10/2024
3	Computational models - FSM	BB+LCD	1	17	22/10/2024
4	Computational models - Sequential and concurrent /communicating process model	BB+LCD	1	18	22/10/2024
5	Analog electronic components	BB+LCD	1	19	24/10/2024
6	Digital electronic components - Buffer, Mux , Demux	BB+LCD	1	20	26/10/2024

7	Encoders, Decoders, Sequential circuits- Flip-flops	BB+LCD	1	21	28/10/2024
8	Synchronous and asynchronous binary counter, register	BB+LCD	1	22	28/10/2024
9	VLSI and Integrated Circuit Design	BB+LCD	1	23	4/11/2024
10	PCB Layout Design	BB+LCD	2	24	5/11/2024 5/11/2024
	Module 4 - Embedded firmware Design				
1	Embedded firmware design approaches	BB+LCD	1	26	8/11/2024
2	Embedded firmware development languages - Assembly language development	BB+LCD	1	27	14/11/2024
3	Embedded firmware development languages- High level language	BB+LCD	1	28	15/11/2024
4	Mixing HLL and assembly language	BB+LCD	1	29	15/11/2024
5	Programming in Embedded C -	BB+LCD	1	30	19/11/2024
6	Programming in Embedded C -	BB+LCD	1	31	19/11/2024
7	Programming in Embedded C - Functions	BB+LCD	1	32	21/11/2024
8	Programming in Embedded C - Pointers, Structures and unions	BB+LCD	1	33	22/11/2024
	5. RTOS based embedded system design				
1	Types of operating systems	BB+LCD	1	34	23/11/2024

2	Task, Process and Threads	BB+LCD	1	35	25/11/2024
3	Multiprocessing and multitasking	BB+LCD	1	36	26/11/2024
4	Task Scheduling - Non preemptive	BB+LCD	1	37	29/11/2024
5	Task Scheduling - preemptive	BB+LCD	1	38	2/12/2024
6	Task communication- shared memory Task communication- Message passing	BB+LCD	1	39	3/12/2024
7	Task communication- RPC and sockets	BB+LCD	1	40	6/12/2024
8	Task Synchronisation - Racing . Deadlock, Dining philosopher's problem	BB+LCD	1	41	9/12/2024
9	Bounded buffer problem, Readers-writers problem, Priority inversion	BB+LCD	1	42	10/12/2024
10	Task Synchronization techniques , Device drivers, How to choose an RTOS	BB+LCD	1	43	10/12/2024

Details for the teaching Aids

BB-Black Board

LCD-Projector

Books:

1. Introduction to Embedded system by Shibu K V, McGraw Hill, 2009.

Reference books:

1. Embedded systems by Rajkamal, McGraw Hill, 2nd Edition.
2. Principles of embedded computing system design by Wayne wolf, Morgan Kauffman publication, 2000

Shilpa M
Course In charge

HOD CCE

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

PRINCIPAL

K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF COMPUTER AND COMMUNICATION ENGINEERING
LESSON PLAN 2024-25 EVEN SEMESTER

COURSE INCHARGE : Dr SHOBHA G
COURSE TYPE / CODE / TITLE : Theory / BRMK557 -RESEARCH METHODOLOGY & IPR
YEAR/ SEMESTER/SECTION : III/V/A
BRANCH : COMPUTER AND COMMUNICATION ENGINEERING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	Module-1 Introduction					
1	Meaning of Research, Objectives of Engineering Research	L+D	LCD+BB	1	1	18/09/2024
2	Motivation in Engineering Research,	L+D	LCD+BB	1	2	19/09/2024
3	Types of Engineering Research, Finding and Solving a Worthwhile Problem.	L+D	LCD+BB	1	3	20/09/2024
4	Ethics in Engineering Research, Ethics in Engineering Research Practice,	L+D	LCD+BB	1	4	25/09/2024
5	Types of Research Misconduct	L+D	LCD+BB	1	5	26/09/2024
6	Ethical Issues Related to Authorship.	L+D	LCD+BB	1	6	27/09/2024
	Module-2 Literature Review and Technical Reading					
7	New and Existing Knowledge, Analysis and Synthesis of Prior Art Bibliographic Databases, Web of Science, Google and Google Scholar,	L+D	LCD+BB	1	7	03/10/2024
8	Effective Search: The Way Forward Introduction to Technical Reading Conceptualizing Research, Critical and Creative Reading,	L+D	LCD+BB	1	8	04/10/2024

	I-IA 16/10/2024					
9	Taking Notes While Reading, Reading Mathematics and Algorithms, Reading a Datasheet.	L+D	LCD+BB	1	9	09/10/2024
10	Attributions and Citations: Giving Credit Wherever Due. Citations: Functions and Attributes,	L+D	LCD+BB	1	10	10/10/2024
11	Impact of Title and Keywords on Citations, Knowledge Flow through Citation, Citing Datasets, Styles for Citations. Acknowledgments and Attributions	L+D	LCD+BB	1	11	18/10/2024
12	What Should Be Acknowledged, Acknowledgments in, Books Dissertations, Dedication or Acknowledgments	L+D	LCD+BB	1	12	23/10/2024
	Module-3 Introduction To Intellectual Property					
13	Role of IP in the Economic and Cultural Development of the Society, IP Governance, IP as a Global Indicator of Innovation, Origin of IP History of IP in India. Major Amendments in IP Laws and Acts in India. Patents: Conditions for Obtaining a Patent Protection, To Patent or Not to Patent an Invention.	L+D	LCD+BB	1	13	24/10/2024
14	Rights Associated with Patents. Enforcement of Patent Rights. Inventions Eligible for Patenting. Non-Patentable Matters. Patent Infringements. Avoid Public Disclosure of an Invention before Patenting. Process of Patenting. Process of Patenting. Prior Art Search. Choice of Application to be Filed. Patent Application Forms. Jurisdiction of Filing Patent Application. Publication. Pre-grant Opposition. Examination. Grant of a Patent. Validity of Patent Protection. Post-grant Opposition. Commercialization of a Patent.	L+D	LCD+BB	1	14	25/10/2024
15	Need for a Patent Attorney/Agent. Can a Worldwide Patent be Obtained? Do I Need First to File a Patent in India? Patent Related Forms. Fee Structure. Types of Patent Applications. Commonly Used Terms in Patenting. National Bodies Dealing with Patent Affairs. Utility Models.	L+D	LCD+BB	1	15	26/10/2024

	Treaties. Famous Case Law: Apple Inc. vs. Samsung Electronics Co..					
16	Geographical Indications: Acts, Laws and Rules Pertaining to GI. Ownership of GI. Rights Granted to the Holders.	L+D	LCD+BB	1	16	30/10/2024
17	Registered GI in India. Identification of Registered GI. Classes of GI.Non-Registerable GI. Protection of GI. Collective or Certification Marks.	L+D	LCD+BB	1	17	06/11/2024
18	Enforcement of GI Rights. Procedure for GI Registration Documents Required for GI Registration. GI Ecosystem in India	L+D	LCD+BB	1	18	07/11/2024
19	Case Studies on Patents. Case study of Curcuma (Turmeric) Patent, Case study of Neem Patent, Case study of Basmati patent. IP Organizations In India. Schemes and Programmes	L+D	LCD+BB	1	19	08/11/2024
	Module-4 Copyrights and Related Rights					
20	Classes of Copyrights. Criteria for Copyright. Ownership of Copyright. Copyrights of the Author. Copyright Infringements. Copyright Infringement is a Criminal Offence.	L+D	LCD+BB	1	20	09/11/2024
21	Copyright Infringement is a Cognizable Offence. Fair Use Doctrine. Copyrights and Internet. Non-Copyright Work. Copyright Registration. Judicial Powers of the Registrar of Copyrights. Fee Structure. Copyright Symbol Validity of Copyright.	L+D	LCD+BB	1	21	14/11/2024
	II-IA 13/11/2024					
22	Copyright Profile of India. Copyright and the word 'Publish'. Transfer of Copyrights to a Publisher. Copyrights and the Word 'Adaptation'. Copyrights and the Word 'Indian Work'. Joint Authorship. Copyright Society.	L+D	LCD+BB	1	22	15/11/2024

23	Copyright Board. Copyright Enforcement Advisory Council (CEAC). International Copyright Agreements, Conventions and Treaties.	L+D	LCD+BB	1	23	20/11/2024
24	Interesting Copyrights Cases. Trademarks: Eligibility Criteria. Who Can Apply for a Trademark. Acts and Laws.Designation of Trademark Symbols. Classification of Trademarks. Registration of a Trademark is Not Compulsory.	L+D	LCD+BB	1	24	21/11/2024
25	Validity of Trademark. Types of Trademark Registered in India. Trademark Registry.	L+D	LCD+BB	1	25	22/11/2024
26	Process for Trademarks Registration. Prior Art Search. Famous Case Law: Coca-Cola Company vs. Bisleri International Pvt. Ltd	L+D	LCD+BB	1	26	27/11/2024
	Module-5 Industrial Designs					
27	Eligibility Criteria. Acts and Laws to Govern Industrial Designs. Design Rights. Enforcement of Design Rights. Non-Protectable Industrial Designs India.	L+D	LCD+BB	1	27	28/11/2024
28	Protection Term. Procedure for Registration of Industrial Designs. Prior Art Search. Application for Registration.	L+D	LCD+BB	1	28	29/11/2024
29	Duration of the Registration of a Design. Importance of Design Registration. Cancellation of the Registered Design. Application Forms. Classification of Industrial Designs. Designs Registration Trend in India. International Treaties. Famous	L+D	LCD+BB	1	29	30/11/2024
30	Case Law: Apple Inc. vs. Samsung Electronics Co. Geographical Indications: Acts, Laws and Rules Pertaining to GI. Ownership of GI. Rights Granted to the Holders.	L+D	LCD+BB	1	30	04/12/2024
31	Registered GI in India. Identification of Registered GI. Classes of GI. Non-Registerable GI. Protection of GI.Collective or Certification Marks. Enforcement of	L+D	LCD+BB	1	31	05/12/2024

	GI Rights.					
32	Procedure for GI Registration Documents Required for GI Registration. GI Ecosystem in India. Case Studies on Patents.	L+D	LCD+BB	1	32	06/12/2024
33	Case study of Curcuma (Turmeric) Patent, Case study of Neem Patent, Case study of Basmati patent. IP Organizations In India. Schemes and Programmes	L+D	LCD+BB	1	33	11/12/2024
	III-IA 14/12/2024					

Text Books:

1. Dr. Santosh M Nejakar, Dr. Harish Bendigeri "Research Methodology and Intellectual Property Rights", ISBN 978-93-5987-928-4, Edition: 2023-24.

Reference Books:

1. David V. Thiel "Research Methods for Engineers" Cambridge University Press, 978-1-107-03488- 4
2. Intellectual Property Rights by N.K.Acharya Asia Law House 6th Edition. ISBN: 978-93-81849-30-9

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

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

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K S INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF COMPUTER & COMMUNICATION ENGINEERING

NAME OF THE STAFF : SHWETHA.K.C

SUBJECT CODE/NAME : BCS508/ENVIRONMENTAL STUDIES & E-WASTE MANAGEMENT

SEMESTER/YEAR/SEC : V/ : III :/CCE

ACADEMIC YEAR : 2024-25

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	MODULE-1 : Ecosystems					
1	Ecosystems (Structure and Function): Forest, Desert, Wetlands, Riverine, Oceanic Ecosystems. Sustainability:17SDGs targets and possible actions	L	BB	1	1	19/09/2024
2	Self- study component (SSC): Components of the environment.	L	BB+PPT	1	2	26/09/2024
	MODULE- 2: Natural Resources & Energy					
3	Natural Resources: Water resources- Availability & quality aspects, Water borne diseases & Water induced diseases, Fluoride problem in drinking Water.	L	BB	1	3	03/10/2024
4	Energy: Types ,Conventional &Non-Conventional Sources of Energy ,Solar energy ,Wind energy and Hydrogen energy as an alternative energy	L	BB+PPT	1	4	10/10/2024
	MODULE- 3: Environmental Pollution					

5	Environmental Pollution: Water Pollution, Noise pollution and Air Pollution (Sources, Impacts, Preventive measures and Public Health Aspects.	L	BB+PPT	1	5	24/10/2024
	MODULE- 4: Waste Management					
6	Waste management: Solid Waste Management, types and sources, functional elements of SWM, Biomedical Waste management –Sources and Characteristics	L	BB	1	6	07/11/2024
7	Environmental Legislation: Solid Waste Management,Rules-2016,E-Waste management Rule -2022,Biomedical Waste management -2016.	L	BB+PPT	1	7	14/11/2024
	MODULE- 5: E-Waste Management					
8	E-Waste; composition and generation .Global context in e –waste; E-Waste pollutants, E-Waste hazardous properties, Effects of pollutant(E-Waste)on human health and Surrounding environment, domestic-waste disposal	L	BB+PPT	1	8	21/11/2024
9	Basic principles of E-Waste management, Component of E-Waste management.	L	BB+PPT	1	9	28/11/2024
10	E-Waste(Management and Handling) Rules, 2011;and E-Waste(Management) Rules, 2022-Salient Features and its Implications	L	BB+PPT	1	10	05/12/2024

Text Books:

1. Environmental studies, Benny Joseph, Tata Mcgraw-Hill 2nd edition 2012
2. Environmental studies, S M Prakash, pristine publishing house, Mangalore 3rd edition-2018

Reference Books:

1. Benny Joseph, Environmental studies, Tata Mcgraw-Hill 2nd edition 2009
2. M .Ayi Reddy Textbook of environmental science and Technology, BS publications 2007
3. Dr. B.S Chauhan, Environmental studies, university of science press 1st edition

Useful websites:

1. https://www.coursera.org/learn/environmental-health-the-foundation-of-global-public-health?action=enroll
2. https://www.coursera.org/learn/environmental-hazards-and-global-public-health

Signature of Course Incharge | **Signature of Module Coordinator** | **Signature of HOD** | **Principal**

Head of the Department
Department of Chemistry
K.S. Institute of Technology
BENGALURU - 560 109.

K S INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF MATHEMATICS

LESSON PLAN 2024-25 ODD SEMESTER

COURSE INCHARGE : MAMATHA N

COURSE TYPE/CODE/TITLE: PCC/ BCM301/ Mathematics for Computer and Communication Engineering

YEAR/ SEMESTER/SECTION : II / III / A

BRANCH : CCE

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: Curve fitting, Correlation, and Regressions						
1	Correlation and regression-Karl Pearson's coefficient of correlation problems	L+D,PS	BB	1	1	19/08/2024
2	Regression	L+D,PS	BB	1	2	20/08/2024
3	Line of Regression	L+D,PS	BB	1	3	21/08/2024
4	problems	L+D,PS	BB	1	4	22/08/2024
5	Rank correlation - problems	L+D,PS	BB	1	5	23/08/2024
6	Regression analysis- lines of regression –problems	L+D,PS	BB	1	6	24/08/2024
7	Curve fitting by the method of least squares- fitting the curves of the form- $y = ax+b$	L+D,PS	BB	1	7	26/08/2024
8	Curve fitting by the method of least squares- fitting the curves of the form- $y= ax^b$	L+D,PS	BB	1	8	27/08/2024
9	Curve fitting by the method of least squares- fitting the curves of the form- $y=ax^2+bx+c$	L+D,PS	BB	2	10	28/08/2024 29/08/2024

10	Curve fitting by the method of least squares- fitting the curves of the form- $y= ae^{bx}$	L+D,PS	BB	2	12	30/08/2024 02/09/2024
Module 2: Probability Distributions						
11	Introduction to basic probability theory and Random variables (discrete and continuous)	L+D,PS	BB	1	13	3/09/2024
12	Problems on discrete probability mass and density functions	L+D,PS	BB	1	14	4/09/2024
13	Problems on mathematical expectation, mean and variance	L+D,PS	BB	1	15	5/09/2024
14	Binomial distributions- derivations for mean and standard deviation	L+D,PS	BB	1	16	6/09/2024
15	Problems on Binomial distributions	L+D,PS	BB	2	18	9/09/2024 10/09/2024
16	Poisson distributions- derivations for mean and standard deviation	L+D,PS	BB	1	19	11/09/2024
17	Problems on Poisson distributions	L+D,PS	BB	2	21	12/09/2024 13/09/2024
18	Problems on continuous probability mass and density functions	L+D,PS	BB	1	22	18/09/2024
19	Problems on Exponential distributions	L+D,PS	BB	2	24	19/09/2024 20/09/2024
IA -1 (23/09/2024)						
20	Problems on Normal distributions	L+D,PS	BB	2	26	26/09/2024 27/09/2024
Module 3: Joint probability distribution & Sampling Theory						
21	Joint Probability distribution for two discrete random variables	L+D,PS	BB	1	27	30/09/2024
22	Expectation and Covariance of Joint Probability distribution	L+D,PS	BB	1	28	01/10/2024
23	Correlation of two discrete random variables	L+D,PS	BB	2	30	03/10/2024 04/10/2024
24	Introduction to Sampling variables	L+D,PS	BB	2	32	07/10/2024 08/10/2024
25	Test of Significance for means of two small samples	L+D,PS	BB	2	34	09/10/2024 10/10/2024
26	Students 't' distribution,	L+D,PS	BB	2	36	14/10/2024 15/10/2024

27	Chi-square distribution as a test of goodness of fit.	L+D,PS	BB	2	38	16/10/2024 18/10/2024
28	comparison of large samples	L+D,PS	BB	2	40	21/10/2024 22/10/2024
	Module 4: Fourier series					
29	Periodic functions	L+D,PS	BB	2	42	23/10/2024 24/10/2024
30	Fourier series of periodic functions for the period $(0,2\pi)$	L+D,PS	BB	1	43	25/10/2024
31	Fourier series of periodic functions for an arbitrary period $(0,2l)$	L+D,PS	BB	2	44	28/10/2024 29/10/2024
32	Fourier series in $(-\pi, \pi)$	L+D,PS	BB	1	45	30/10/2024
	IA-2 (4/11/2024)					
33	Fourier series in (-l, l)	L+D,PS	BB	2	47	7/11/2024 8/11/2024
34	Fourier half range series in $(0, \pi)$	L+D,PS	BB	1	48	11/11/2024
35	Fourier half range series in (0,l)	L+D,PS	BB	2	50	12/11/2024 13/11/2024
36	Practical Harmonic analysis	L+D,PS	BB	2	52	14/11/2024 15/11/2024
	Module 5: Fourier transforms and Z -transforms					
37	Infinite Fourier transforms	L+D,PS	BB	1	53	19/11/2024
38	Fourier Sine Transforms	L+D,PS	BB	1	54	20/11/2024
39	Fourier Cosine Transforms	L+D,PS	BB	1	55	21/11/2024
40	Inverse Fourier transforms	L+D,PS	BB	2	57	22/11/2024 25/11/2024
41	Basics, Standard functions of Z – Transforms	L+D,PS	BB	1	58	26/11/2024
42	Damping and shifting rules	L+D,PS	BB	2	60	27/11/2024 28/11/2024
43	Problems on Z – Transforms	L+D,PS	BB	1	61	29/11/2024
44	Initial and final value theorems and problems	L+D,PS	BB	1	62	02/12/2024

45	Inverse Z – Transforms	L+D,PS	BB	1	63	3/12/2024
46	Solution of difference equations	L+D,PS	BB	1	64	4/12/2024
48	Revision	L+D,PS	BB	2	66	6//12/2024 9/12/2024
49	Activity	L+D,PS	BB	2	68	10/12/2024 11/12/2024
IA-3(12/12/2024)						
50	Revision	L+D,PS	BB	1	69	20/12/2024

Textbooks:

1. Ronald E. Walpole, Raymond H Myers, Sharon L Myers & Keying Ye "Probability & Statistics for Engineers & Scientists", Pearson Education, 9 th edition, 2017.
2. Peter Bruce, Andrew Bruce & Peter Gedeck "Practical Statistics for Data Scientists" O'Reilly Media, Inc., 2nd edition 2020.

Reference Books:

- Erwin Kreyszig, "Advanced Engineering Mathematics", John Wiley & Sons, 9 th Edition, 2006.
- B. S. Grewal "Higher Engineering Mathematics", Khanna publishers, 44 th Ed., 2021.
- G Haribaskaran "Probability, Queuing Theory & Reliability Engineering", Laxmi Publication, Latest Edition, 2006
- Irwin Miller & Marylees Miller, John E. Freund's "Mathematical Statistics with Applications" Pearson. Dorling Kindersley Pvt. Ltd. India, 8 th edition, 2014.

Web Materials:

Web links and Video Lectures (e-Resources):

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

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

http://academicearth.org/

http://www.bookstreet.in.

VTU EDUSAT PROGRAMME–20

VTU e-Shikshana Program

Details of the teaching aids:

1.BLACK BOARD USAGE

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

Head of the Department
Dept. of Science and Humanities
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PRINCIPAL
BENGALURU-560 109

K. S. INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF COMPUTER COMMUNICATION AND ENGINEERING

LESSON PLAN 2024-25 ODD SEMESTER

NAME OF THE STAFF : **Dr. CHANDA V REDDY**

SUBJECT CODE/NAME : **BCS302/DIGITAL DESIGN AND COMPUTER ORGANIZATION**

ACADEMIC YEAR : **2024-2025 ODD SEMESTER**

YEAR/SEMESTER/SECTION : III/III/A

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	MODULE 1: Introduction to Digital Design					
1	Binary Logic. Basic Theorems And Properties Of Boolean Algebra	L+D. PS	BB	1	1	19/08/2024
2	Properties Of Boolean Algebra Boolean Functions	L+D. PS	BB	1	2	20/08/2024
3	Digital Logic Gates	L+D. PS	BB	1	3	21/08/2024
4	Introduction. The Map Method.	L+D. PS	BB	2	5	22/08/2024, 24/08/2024
5	Four-Variable Map - Don't-Care Conditions.	L+D. PS	BB	2	7	26/08/2024, 27/08/2024
6	Problems	L+D. PS	BB	1	8	28/08/2024
7	NAND and NOR Implementation	L+D. PS	BB	1	9	29/08/2024
8	Other HDL- Verilog	L+D. PS	BB	1	10	31/08/2024
9	Module of a simple ckt	L+D. PS	BB	1	11	02/09/2024
10	Module of a simple ckt	L+D. PS	BB	1	12	03/09/2024

	MODULE 2: Combinational Logic and Sequential Logic					
11	**Combinational Logic** Introduction, Combinational Circuits,	L+D	BB	1	13	04/09/2024
12	Design Procedure, Binary Adder	L+D	BB	1	14	05/09/2024
13	Binary Subtractor,	L+D	BB	1	15	09/09/2024
14	Decoders,	L+D	BB	2	17	10/09/2024, 11/09/2024,
15	Encoders	L+D	BB	2	19	12/09/2024, 14/09/2024
16	Multiplexers,	L+D	BB	2	21	17/09/2024, 18/09/2024,
17	HDL model of a combinational circuits: adder, encoder, MUX	L+D	BB	2	23	19/09/2024, 26/09/2024,
18	**Sequential Logic**: Introduction, Sequential Circuits	L+D	BB	1	24	28/09/2024,
19	Storage Elements - Latches,	L+D	BB	2	26	30/09/2024, 01/10/2024,
20	Flip-Flops	L+D	BB	2	28	03/10/2024, 07/10/2024,
	MODULE -3					
21	**Basic Structure of Computers:** Functional Units, Basic Operational Concepts,	L+D	LCD+BB	2	30	08/10/2024, 09/10/2024,
22	Bus structure, Performance – Processor Clock, Basic Performance Equation,	L+I	LCD+BB	2	32	10/10/2024,, 14/10/2024,
23	Clock Rate, Performance Measurement	L+D	LCD+BB	1	33	15/10/2024
24	**Machine Instructions and Programs:** Memory Location and Addresses	L+D	LCD+BB	1	34	16/10/2024
25	Instruction and programs memory location and adresses	L+D	LCD+BB	1	35	21/10/2024
26	Memory Operations	L+D	LCD+BB	1	36	22/10/2024
27	Instruction and Instruction sequencing	L+D	LCD+BB	1	37	23/10/2024
28	Addressing Modes	L+I,	LCD+BB	1	38	24/10/2024
	MODULE 4: Input/output Organization					
29	Accessing I/O Devices	L+D	LCD+BB	1	39	28/10/2024,
30	Interrupts – Interrupt Hardware	L+D	LCD+BB	1	40	29/10/2024,
31	Enabling and Disabling Interrupts	L+D	LCD+BB	2	42	30/10/2024, 07/11/2024,
32	Handling Multiple Devices	L+D	LCD+BB	1	43	09/11/2024
33	Direct Memory Access: Bus Arbitration	L+D	LCD+BB	1	44	11/11/2024
34	Speed, size and Cost of memory systems	L+D	LCD+BB	1	45	12/11/2024
35	Cache Memories	L+D	LCD+BB	1	46	13/11/2024

36	Mapping Functions	L+D	LCD+BB	2	48	14/11/2024. 19/11/2024
	MODULE 5: Basic Processing Unit					
37	**Basic Processing Unit:** Some Fundamental Concepts:	L+D	LCD+BB	1	49	20/11/2024
38	Register Transfers.	L+D	LCD+BB	1	50	21/11/2024
39	Performing ALU operations	L+D	LCD+BB	1	51	23/11/2024
40	Fetching a word from Memory.	L+D	LCD+BB	1	52	25/11/2024
41	Storing a word in memory	L+D	LCD+BB	1	53	26/11/2024
42	Execution of a Complete Instruction	L+D	LCD+BB	1	54	27/11/2024
43	**Pipelining:** Basic concepts	L+D	LCD+BB	1	55	28/11/2024.
44	Role of Cache memory.	L+D	LCD+BB	2	57	30/11/2024. 02/12/2024.
45	Pipeline Performance	L+D	LCD+BB	2	59	03/12/2024. 04/12/2024.
46	Revision	L+D	LCD+BB	1	60- 63	05/12/2024. 09/12/2024. 10/12/2024. 11/12/2024.
	IPCC LA					
1	**Module 1 Lab Programs** 1. Given a 4-variable logic expression, simplify it using appropriate technique and simulate the same using basic gates. 2. Design a 4 bit full adder and subtractor and simulate the same using basic gates.	L+D	LCD- BB	1.5hrs 1.5hrs	1.5hrs 1.5hrs	
2	**Module 2 Lab Programs** 3. Design Verilog HDL to implement simple circuits using structural, Data flow and Behavioural model. 4. Design Verilog HDL to implement Binary Adder-Subtractor – Half and Full Adder, Half and Full Subtractor. 5. Design Verilog HDL to implement Decimal adder. 6. Design Verilog program to implement Different types of multiplexer like 2:1, 4:1 and 8:1. 7. Design Verilog program to implement types of De-Multiplexer. 8. Design Verilog program for implementing various types of Flip-Flops such as SR, JK and D. Revision Test	L+D	LCD-BB	1.5hrs 1.5hrs 1.5hrs 1.5hrs 1.5hrs 1.5hrs	1.5hrs 1.5hrs 1.5hrs 1.5hrs 1.5hrs 1.5hrs	

Text Books:

1. M. Morris Mano & Michael D. Ciletti, Digital Design With an Introduction to Verilog Design, 5e,Pearson Education.

2. Carl Hamacher, ZvonkoVranesic, SafwatZaky, Computer Organization, 5th Edition, Tata McGraw Hill.

Reference Books:

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

Web Materials:

Weblinks and Video Lectures (e-Resources):

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

Details for the teaching Aids

Black Board and LCD

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

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K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF COMPUTER AND COMMUNICATION ENGINEERING
LESSON PLAN 2024-25 ODD SEMESTER

COURSE INCHARGE : T NAGAJYOTHI

COURSE TYPE / CODE / TITLE : BCS303/OPERATING SYSTEMS

YEAR/ SEMESTER/SECTION : III/II/A

BRANCH : CCE

ACADEMIC YEAR :2024-2025

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 OS, OS PERSPECTIVE IN TERMS OF USER AND SYSTEM VIEW, COMPUTER SYSTEM ORGANISATIONS	L+D +I	PPT/ BB	2	2	19/08/2024 20/08/2024
2	COMPUTER SYSTEM ARCHITECTURE 1) SINGLE PROCESSOR 2) MULTIPROCESOR 3) CLUSTERED SYSTEMS	L+D+I	PPT/BB	1	3	21/08/2024
3	OPERATING SYSTEM OPERATIONS DUAL MODE OPERATION,TIMER	L+D+I	PPT/BB	2	5	23/08/2024 24/08/2024

4	PROCESS MANAGEMENT,MEMORY MANAGEMENT STORAGE MANAGEMENT	L+D+I	PPT/BB	1	6	26/08/2024
5	PROTECTION AND SECURITY DISTRIBUTED SYSTEMS SPECIAL PURPOSE SYSTEMS,COMPUTING ENVIRONMENTS	L+D+I	PPT/BB	1	7	27/08/2024
6	OPERATING SYSTEM SERVICES,USER OPERATING SYSTEM INTERFACE	L+D+I	PPT/BB	1	8	28/08/2024
7	SYSTEM CALLS,TYPES OF SYSTEM CALLS,SYSTEM PROGRAMS	L+D+I	PPT/BB	1	9	30/08/2024
8	OS DESIGN AND IMPLEMENTATION OPERATING SYSTEM STRUCTURE	L+D+I	PPT/BB	2	11	31/08/2024 2/09/2024
9	VIRTUAL MACHINES HISTORY,BENEFITS,SIMULATION,PARA-VIRTUALIZATION,IMPLEMENTATION,EXAMPLES	L+D+I	PPT/BB	2	13	3/09/2024 4/09/2024
10	OPERATING SYSTEM DEBUGGING ,OS GENERATION,SYSTEM BOOT	L+D+I	PPT/BB	1	14	6/09/2024
	Module 2.					
11	PROCESS CONCEPT,PROCESS SCHEDULING,OPERATIONS ON PROCESSES	L+D+I	PPT/BB	1	15	9/09/2024
12	INTERPROCESS COMMUNICATION SHARED MEMORY SYSTEMS MESSAGE PASSING SYSTEMS	L+D+I	PPT/BB	2	17	10/09/2024 11/09/2024
13	MULTITHREADED PROGRAMMING OVERVIEW,MULTITHREADED MODELS THREAD LIBRARIES,THREADING ISSUES	L+D+I	PPT/BB	2	19	13/09/2024
14.	PROCESS SCHEDULING – BASIC CONCEPTS,CPU-I/O BURST CYCLE CPU SCHEDULEE SCHEDULING CRITERIA SCHEDULING ALGORITHMS	L+D+I	PPT/BB	3	22	14/09/2024 17/09/2024

15.	Thread scheduling,Multiple Processor scheduling	L+D+I	PPT/BB	1	23	18/09/2024
	Module 3					
16	Synchronization , Critical section problem	L+D+I	PPT/BB	1	24	20/09/2024
17	Peterson solution ,Synchronization Hardware	L+D+I	PPT/BB	1	25	27/09/2024
18	Semaphores,Classical problems of synchronization	L+D+I	PPT/BB	2	27	28/09/2024 30/09/2024
19	Deadlocks:System model,Deadlock characterization,Methods for handling deadlocks	L+D+I	PPT/BB	2	29	1/10/2024 4/10/2024
20	Deadlock prevention ,Deadlock avoidance, Deadlock detection and recovery from deadlock	L+D+I	PPT/BB	2	31	7/10/2024 8/10/2024
	Module 4					
21	Memory management strategies,Background,Swapping	L+D+I	PPT/BB	3	34	9/10/2024 14/10/2024
22	Contiguous Memory allocation,Paging	L+D+I	PPT/BB	2	36	15/10/2024 16/10/2024
23	Structure of Page Table,Segmentation	L+D+I	PPT/BB	1	37	18/10/2024
24	Virtual Memory:Background,Demand Paging	L+D+I	PPT/BB	2	38	21/10/2024 22/10/2024
25	Copy –on-Write,Page Replacement Allocation of frames Thrashing	L+D+I	PPT/BB	2	40	23/10/2024 25/10/2024
	Module 5					
26	File system,File concepts,Access Methods	L+D+I	PPT/BB	1	41	26/10/2024
27	Directory and disk structure,File system mounting	L+D+I	PPT/BB	1	42	28/10/2024
28	File sharing, Implementing File system structure,File system Implementation	L+D+I	PPT/BB	2	44	29/10/2024 30/10/2024
29	Directory Implementation, Allocation Methods,	L+D+I	PPT/BB	2	47	8/11/2024 9/11/2024

	Free space Management					14/11/2024
30	Mass storage structures, Disk structure, Disk Attachment	L+D+I	PPT/BB	2	49	15/11/2024 16/11/2024
31	Disk Scheduling, Disk Management	L+D+I	PPT/BB	2	52	18/11/2024 21/11/2024 22/11/2024
32	Goals of Protection, Principles of Protection, Domain of Protection , Access Matrix	L+D+I	PPT/BB	2	55	23/11/2024 25/11/2024 26/11/2024
Revision of previous year question paper problems						1 week

Integrated Lab Component

SL No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	Module 1 Lab experiment					
1.	Develop a C program to implement Process System calls (fork(),exec(),wait(),createprocess(),terminate process)	L+D+I	PPT/BB	1	56	
	Module 2 Lab experiment					
2.	Simulate the following CPU Scheduling algorithms to find turnaround time and waiting time a)FCFS b)SJF c)Round Robin d)Priority	L+D+I	PPT/BB	2	58	
3.	Develop a C program to simulate producer –consumer problem using semaphores	L+D+I	PPT/BB	1	59	
	Module 3 Lab experiment					
4.	Develop a C program which demonstrates interprocess communication between a reader process and writer process. Use mkfifo,open,read,write,closeAPI's in program	L+D+I	PPT/BB	1	60	
5	Develop a C program to simulate Bankers Algorithm for Deadlock Avoidance	L+D+I	PPT/BB	1	61	

	Module 4 Lab experiment					
6	Develop a C program to simulate the following contiguous memory allocation Techniques a)Worst Fit b)Best Fitc)First Fit	L+D+I	PPT+BB	3	62	
7	Develop a C program to simulate page replacement algorithms	L+D+I	PPT+BB	1	63	
	Module 5 Lab experiment					
8	Simulate the following File Organization Techniques a)Single Level Directory b)Two level Directory	L+D+I	PPT+BB	2	65	
9	Develop a C program to simulate the Linked file allocation strategies	L+D+I	PPT+BB	1	66	
10	Develop a C program to simulate SCAN disk scheduling algorithm	L+D	PPT+BB	1	67	

Text Books:

1. Operating system concepts –ABRAHAM SILBERSCHATZ,PETER B GALVIN,GREG GAGNE 8th EDITION,Wiley-India ,2015

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 3rdEd,McGraw –Hill 2013

Weblinks:

1. https://youtu.be/mXw9ruZaxzQ
2. https://www.youtube.como/watch?v=783KAB-tuE4&list=PLIemF3uozcAKTgsCIj82voMK3TMROYE_f

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

2. PPT Power Point Presentation

Course Incharge **Module coordinator** **HOD** **Principal**

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DEPARTMENT OF COMPUTER AND COMMUNICATION ENGINEERING
LESSON PLAN 2024-25 ODD SEMESTER

COURSE INCHARGE : Shashikala H.C.

COURSE TYPE / CODE / TITLE : PCC / BCS304 / Data structure & Application

YEAR/ SEMESTER/SECTION : II/III/A

BRANCH : Computer and Communication Engineering (CCE)

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: BASIC DATA STRUCTURES CONCEPTS AND APPLICATION						
1	Data Structures, Classifications (Primitive & Non-Primitive), Data structure Operations.	Offline	BB+LCD	1	1	19/08/2024
2	Review of pointers and Dynamic Memory allocation	Offline	BB+LCD	2	3	20/08/2024 21/08/2024
3	ARRAYS and STRUCTURES: Arrays, Dynamic Allocated Arrays.	Offline	BB+LCD	2	5	23/08/2024 24/08/2024
4	Structures and Unions	Offline	BB+LCD	1	6	26/08/2024
5	Polynomials	Offline	BB+LCD	2	8	27/08/2024 28/08/2024
6	Sparse Matrices with arrays	Offline	BB+LCD	2	10	30/08/2024 31/08/2024

7	Representation of Multidimensional Arrays	Offline	BB+LCD	1	11	02/09/2024
8	Strings	Offline	BB+LCD	2	13	03/09/2024 04/09/2024
9	**STACKS:** Stacks, Stacks Using Dynamic Arrays,	Offline	BB+LCD	1	14	06/09/2024
10	Evaluation and conversion of Expressions	Offline	BB+LCD	2	15	09/09/2024 10/09/2024
	MODULE-2: DYNAMIC IMPLEMENTATION OF QUEUES AND LINKE LIST					
11	**QUEUES:** Queues,	Offline	BB+LCD	1	16	11/09/2024
12	Circular Queues, Using Dynamic Arrays	Offline	BB+LCD	2	18	13/09/2024
13	Multiple Stacks and queues.	Offline	BB+LCD	1	19	14/09/2024
14	**LINKED LISTS:** Singly Linked.	Offline	BB+LCD	1	20	17/09/2024
15	Lists and Chains	Offline	BB+LCD	1	21	18/09/2024
16	Representing Chains in C	Offline	BB+LCD	1	22	20/09/2024
17	Linked Stacks and Queues	Offline	BB+LCD	2	24	27/09/2024 28/09/2024
18	Polynomials	Offline	BB+LCD	2	26	30/09/2024 01/10/2024
	MODULE:3 OPERATION ON LINKED LIST AND TREES					
19	**LINKED LISTS:** Additional List Operations	Offline	BB+LCD	2	28	04/10/2024 07/10/2024
20	Sparse Matrices	Offline	BB+LCD	1	29	08/10/2024
21	Doubly Linked List.	Offline	BB+LCD	1	30	09/10/2024

22	**TREES:** Introduction, Binary Trees	Offline	BB+LCD	1	31	14/10/2024
23	Binary Tree Traversals	Offline	BB+LCD	2	33	15/10/2024 16/10/2024
24	Threaded Binary Trees.	Offline	BB+LCD	1	34	18/10/2024
	MODULE:4 BST and GRAPH					
25	**TREES(Cont..):** Binary Search trees	Offline	BB+LCD	2	36	21/10/2024 22/10/2024
26	Selection Trees	Offline	BB+LCD	2	38	23/10/2024 25/10/2024
27	**Forests**	Offline	BB+LCD	1	39	26/10/2024
28	Representation of Disjoint sets	Offline	BB+LCD	2	41	28/10/2024 29/10/2024
29	Counting Binary Trees,	Offline	BB+LCD	2	43	30/10/2024 08/11/2024
30	**GRAPHS:** The Graph Abstract Data Types	Offline	BB+LCD	2	45	09/11/2024 11/11/2024
31	Elementary Graph Operations	Offline	BB+LCD	4	49	12/11/2024 13/11/2024 15/11/2024 19/11/2024

Module:5 HASHING, PRIORITY QUEUES, INTRODUCTION TO EFFICIENT BINARY SEARCH TREES						
32	**HASHING:** Introduction, Static Hashing. Dynamic Hashing	Offline	BB+LCD	4	53	20/11/2024 22/11/2024 23/11/2024 25/11/2024
33	**PRIORITY QUEUES:** Single and double ended Priority Queues, Leftist Trees	Offline	BB+LCD	4	57	26/11/2024 27/11/2024 29/11/2024 30/11/2024
34	**INTRODUCTION TO EFFICIENT BINARY SEARCH TREES:** Optimal Binary Search Trees	Offline	BB+LCD	4	61	02/12/2024 03/12/2024 04/12/2024 06/12/2024
35	**Revision and solving old question papers**	Offline	BB+LCD	3	64	09/12/2024 10/12/2024 11/12/2024

Text Books:

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

Reference Books:

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

Web Materials:

Weblinks and Video Lectures (e-Resources):

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

Details of the teaching aids: 1. BB – Black Board 2. LCD

Course Incharge | HOD | PRINCIPAL

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K S INSTITUTE OF TECHNOLOGY BENGALURU

DEPARTMENT OF COMPUTER COMMUNICATION & ENGINEERING

LESSON PLAN 2024-25(ODD)

NAME OF THE STAFF : **SHASHIKALA H.C.**
SUBJECT CODE/NAME : **BCSL305/ DATA STRUCTURES LABORATORY**
SEMESTER/YEAR/SEC : **III/IV/A**
ACADEMIC YEAR : **2024-25(ODD)**

Sl. No.	Topic to be covered	Teaching Aid	No. of Periods	Batch No.	Proposed Date
1	Develop a Program in C for the following: a) Declare a calendar as an array of 7 elements (A dynamically Created array) to represent 7 days of a week. Each Element of the array is a structure having three fields. The first field is the name of the Day (A dynamically allocated String), The second field is the date of the Day (A integer), the third field is the description of the activity for a particular day (A dynamically allocated String). b) Write functions create(), read() and display(): to create the calendar, to read the data from the keyboard and to print weeks activity details report on screen.	BB+LCD	3	B	19/08/2024
		BB+LCD	3	A	20/08/2024
2	Develop a Program in C for the following operations on Strings. a. Read a main String (STR), a Pattern String (PAT) and a Replace String (REP) b. Perform Pattern Matching Operation: Find and Replace all occurrences of PAT in STR with REP if PAT exists in STR. Report suitable messages in case PAT does not exist in STR Support the program with functions for each of the above operations. Don't use Built-in function.	BB+LCD	3	B	24/08/2024
		BB+LCD	3	A	27/08/2024
3	Develop a menu driven Program in C for the following operations on STACK of Integers (Array Implementation of Stack with maximum size MAX) a. Push an Element on to Stack b. Pop an Element from Stack c. Demonstrate how Stack can be used to check Palindrome d. Demonstrate Overflow and Underflow situations on Stack e. Display the status of Stack f. Exit Support the program with appropriate functions for each of the above operations	BB+LCD	3	B	26/08/2024
		BB+LCD	3	A	31/08/2024
4	Develop a Program in C for converting an Infix Expression to Postfix Expression. Program should support for both parenthesized and free parenthesized expressions with the operators: +, -, *, /, % (Remainder), ^ (Power) and alphanumeric operands.	BB+LCD	3	B	02/09/2024
		BB+LCD	3	A	03/09/2024
	Develop a menu driven Program in C for the following operations on Circular QUEUE of				

5	Characters (Array Implementation of Queue with maximum size MAX) a. Insert an Element on to Circular QUEUE b. Delete an Element from Circular QUEUE c. Demonstrate Overflow and Underflow situations on Circular QUEUE d. Display the status of Circular QUEUE e. Exit Support the program with appropriate functions for each of the above operations	BB+LCD	3	B	09/09/2024
		BB+LCD	3	A	10/09/2024
6	Develop a menu driven Program in C for the following operations on Circular QUEUE of Characters (Array Implementation of Queue with maximum size MAX) a. Insert an Element on to Circular QUEUE b. Delete an Element from Circular QUEUE c. Demonstrate Overflow and Underflow situations on Circular QUEUE d. Display the status of Circular QUEUE e. Exit Support the program with appropriate functions for each of the above operations	BB+LCD	3	B	30/092024
		BB+LCD	3	A	17/09/2024
7	Develop a menu driven Program in C for the following operations on Singly Linked List (SLL) of Student Data with the fields: *USN, Name, Programme, Sem,PhNo* a. Create a SLL of N Students Data by using *front insertion*. b. Display the status of SLL and count the number of nodes in it c. Perform Insertion / Deletion at End of SLL d. Perform Insertion / Deletion at Front of SLL(Demonstration of stack) e. Exit	BB+LCD	3	B	07/10/2024
		BB+LCD	3	A	01/10/2024
8	Develop a menu driven Program in C for the following operations on Doubly Linked List (DLL) of Employee Data with the fields: *SSN, Name, Dept, Designation, Sal, PhNo* a. Create a DLL of N Employees Data by using *end insertion*. b. Display the status of DLL and count the number of nodes in it c. Perform Insertion and Deletion at End of DLL d. Perform Insertion and Deletion at Front of DLL e. Demonstrate how this DLL can be used as Double Ended Queue. f. Exit	BB+LCD	3	B	14/10/2024
		BB+LCD	3	A	08/10/2024
9	Develop a Program in C for the following operationson Singly Circular Linked List (SCLL) with header nodes a. Represent and Evaluate a Polynomial P(x,y,z) = 6x2y2z-4yz5+3x3yz+2xy5z-2xyz3 b. Find the sum of two polynomials POLY1(x,y,z) and POLY2(x,y,z) and store the result in POLYSUM(x,y,z) Support the program with appropriate functions for each of the above operations	BB+LCD	3	B	21/10/2024
		BB+LCD	3	A	15/10/2024
10	Develop a menu driven Program in C for the following operations on Binary Search Tree (BST) of Integers . a. Create a BST of N Integers: 6, 9, 5, 2, 8, 15, 24, 14, 7, 8, 5, 2 b. Traverse the BST in Inorder, Preorder and Post Order c. Search the BST for a given element (KEY) and report the appropriate message d. Exit	BB+LCD	3	B	28/10/2024
		BB+LCD	3	A	22/10/2024
11	Develop a Program in C for the following operations on Graph(G) of Cities a. Create a Graph of N cities using Adjacency Matrix.	BB+LCD	3	B	11/11/2024

	b. Print all the nodes reachable from a given starting node in a digraph using DFS/BFS method	BB+LCD	3	A	29/10//2024
12	Given a File of N employee records with a set K of Keys (4-digit) which uniquely determine the records in file F. Assume that file F is maintained in memory by a Hash Table (HT) of m memory locations with L as the set of memory addresses (2-digit) of locations in HT. Let the keys in K and addresses in L are Integers. Develop a Program in C that uses Hash function H: K →L as H(K)=K mod m (remainder method), and implement hashing technique to map a given key K to the address space L. Resolve the collision (if any) using linear probing.	BB	3	B	23/11/2024
		BB	3	A	12/11/2024
13	Internal Test 1		3	B	25/11//2024
			3	A	26/11/2024
14	Internal Test 2		3	B	02/12/2024
			3	A	03/12/2024

Details for the teaching Aids

BB-Black Board

LCD-Projector

Course In charge

HOD CCE

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DEPARTMENT OF COMPUTER AND COMMUNICATION ENGINEERING
LESSON PLAN 2024-25 ODD SEMESTER

COURSE INCHARGE : **PRASHANTH H S**

COURSE TYPE / CODE / TITLE : **BCS306A / OBJECT ORIENTED PROGRAMMING WITH JAVA**

YEAR/ SEMESTER/SECTION : [illegible] II / III / 'A' section

BRANCH : **CCE**

SL NO	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	MODULE 1: Java Overview, Data types, Variables, Arrays ,Operators, Control Statements					
1	Introduction to Object-Oriented Programming (Two Paradigms, Abstraction, The Three OOP Principles).	L+D	LCD+B	1	1	19-08-2024
2	Using Blocks of Code, Lexical Issues. Data Types, Variables, and Arrays: The Primitive Types.	L+D	LCD+B	1	2	21-08-2024
3	Variables, Type Conversion and Casting.	L+D	LCD+B	1	3	22-08-2024
4	Automatic Type Promotion in Expressions, Arrays.	L+D	LCD+B	1	4	24-08-2024
5	Introducing Type Inference with Local Variables **Operators:** Arithmetic Operators, Relational Operators, Boolean Logical Operators.	L+D	LCD+B	1	5	26-08-2024
6	The Assignment Operator, The? Operator, Operator Precedence, Using Parentheses.	L+D	LCD+B	1	6	28-08-2024

7	Java's Selection Statements, The Traditional switch.	L+D	LCD+B	1	7	29-08-2024
8	Iteration Statements, The For-Each Version of the for Loop.	L+D	LCD+B	1	8	31-08-2024
9	Local Variable Type Inference in a for Loop.	L+D	LCD+B	1	9	02-09-2024
10	Nested Loops, Jump statements.	L+D	LCD+B	1	10	04-09-2024
11	Java Program for operators, Control statement.	L+D	LCD+B	1	11	05-09-2024
	MODULE 2: Classes and Methods					
12	**Introducing Classes:** Class Fundamentals, Declaring Objects.	L+D	LCD+B	1	12	09-09-2024
13	Assigning Object Reference Variables, Introducing Methods.	L+D	LCD+B	1	13	11-09-2024
14	Constructors.	L+D	LCD+B	1	14	12-09-2024
15	The this Keyword.	L+D	LCD+B	1	15	14-09-2024
16	Garbage Collection.	L+D	LCD+B	1	16	18-09-2024
17	Overloading Methods, Objects as Parameters.	L+D	LCD+B	1	17	19-09-2024
	IA1(23-9-2024 TO 25-09-2024)					
18	Argument Passing, Returning Objects.	L+D	LCD+B	1	18	26-09-2024
19	Recursion, Access Control.	L+D	LCD+B	1	19	28-09-2024
20	Understanding static. .	L+D	LCD+B	1	20	30-09-2024
21	Introducing final.	L+D	LCD+B	1	21	28-09-2024
22	Introducing Nested and Inner Classes.	L+D	LCD+B	1	22	3-10-2024

	MODULE 3: Inheritance Classes					
23	**Inheritance:** Inheritance Basics.	L+D	LCD+B	1	23	07-10-2024
24	Using super Method Overriding.	L+D	LCD+B	1	24	09-10-2024
25	Creating a Multilevel Hierarchy, When Constructors Are Executed.	L+D	LCD+B	1	25	10-10-2024
26	Dynamic Method Dispatch. Using final with Inheritance.	L+D	LCD+B	1	26	14-10-2024
27	Local Variable Type Inference and Inheritance.	L+D	LCD+B	1	27	14-10-2024
28	Interfaces, Default Interface Methods.	L+D	LCD+B	1	28	16-10-2024
29	Use static Methods in an Interface.	L+D	LCD+B	1	29	21-10-2024
	MODULE 4: Packages and Exception					
30	**Packages:** Packages.	L+D	LCD+B	1	30	23-10-2024
31	Packages and Member Access.	L+D	LCD+B	1	31	24-10-2024
32	Importing Packages.	L+D	LCD+B	1	32	26-10-2024
33	Exceptions-Handling Fundamentals, Exception Types.	L+D	LCD+B	1	33	28-10-2024
34	Uncaught Exceptions.	L+D	LCD+B	1	34	30-11-2024
	IA2(04-11-2024 TO 06-11-2024)					
35	Using try and catch, Multiple catch Clauses.	L+D	LCD+B	1	35	07-11-2024
36	Nested try statements, throw.	L+D	LCD+B	1	36	11-11-2024
37	throws, finally.	L+D	LCD+B	1	37	13-11-2024

38	Java's built in exceptions, creating your own Exception subclasses.	L+D	LCD+B	1	38	14-11-2024
39	chained Exceptions.	L+D	LCD+B	1	39	20-11-2024
MODULE 5: Multithreaded Programming, Enumeration, Type Wrapper, Autoboxing						
40	**Multithreaded Programming:** The Java Thread Model, The Main Thread.	L+D	LCD+B	1	40	23-11-2024
41	Creating a Thread, Creating, Multiple Threads.	L+D	LCD+B	1	41	25-11-2024
42	Using is Alive() and join(),Thread Priorities.	L+D	LCD+B	1	42	27-11-2024
43	Synchronisation, Interthread communication.	L+D	LCD+B	1	43	28-11-2024
44	Suspending, Resuming , and stopping Threads.	L+D	LCD+B	1	44	30-11-2024
45	Obtaining thread's state.	L+D	LCD+B	1	45	2-12-2024
46	**Enumerations, Type Wrappers and Autoboxing:** Enumerations.	L+D	LCD+B	1	46	04-12-2024
47	The values () and valueOf () Methods.	L+D	LCD+B	1	47	05-12-2024
48	Type Wrappers (Character, Boolean, The Numeric Type Wrappers).	L+D	LCD+B	1	48	09-12-2024
49	Autoboxing, Autoboxing and Methods. Autoboxing/unboxing Boolean and Character Values	L+D	LCD+B	1	49	11-12-2024
IA3(12-12-2024 to 14-12-2024)						

Integrated Lab Component

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
1	Develop a JAVA program to add TWO matrices of suitable order N (The value of N should be read from command line arguments).	L+D	LCD+B	2	2	22/08/2024(A1) 23/08/2024(A2)
2	Develop a stack class to hold a maximum of 10 integers with suitable methods. Develop a JAVA main method to illustrate Stack operations.	L+D	LCD+B	2	4	29/08/2024(A1) 30/08/2024(A2)
3	A class called Employee, which models an employee with an ID, name and salary, is designed as shown in the following class diagram. The method raiseSalary (percent) increases the salary by the given percentage. Develop the Employee class and suitable main method for demonstration.	L+D	LCD+B	2	6	05/09/2024(A1) 06/09/2024(A2)
4	A class called MyPoint, which models a 2D point with x and y coordinates, is designed. Develop the code for the class MyPoint. Also develop a JAVA program (called TestMyPoint) to test all the methods defined in the class.	L+D	LCD+B	2	8	12/09/2024(A1) 20/09/2024(A2)
5	Develop a JAVA program to create a class named shape. Demonstrate polymorphism concepts by developing suitable methods, defining member data and main program.	L+D	LCD+B	2	10	19/09/2024(A1) 27/09/2024(A2)
6	Develop a java program to create an abstract class shape with abstract methods calculateArea() and calculatePerimeter().Create subclasses Circle and Triangle that extend the shape class and implement	L+D	LCD+B	2	12	26/09/2024(A1)

	the respective methods to calculate the area and perimeter of each shape.					04/10/2024(A2)
7	Develop a JAVA program to create an interface Resizable with methods resizeWidth(int width) and resizeHeight(int height) that allow an object to be resized. Create a class Rectangle that implements the Resizable interface and implements the resize methods.	L+D	LCD+B	2	14	03/10/2024(A1) 18/10/2024(A2)
8	Develop a JAVA program to create an outer class with a function display. Create another class inside the outer class named inner with a function called display and call the two functions in the main class	L+D	LCD+B	2	16	10/10/2024(2) 25/10/2024(A2)
9	Develop a JAVA program to raise a custom exception (user defined exception) for DivisionByZero using try, catch, throw and finally.	L+D	LCD+B	2	18	24/10/2024(A1) 26/10/2024(A2)
10	Develop a JAVA program to create a package named mypack and import & implement it in a suitable class.	L+D	LCD+B	2	20	07/11/2024(A1) 08/11/2024(A2)

Text Books:

1. John E Hopcroft, Rajeev Motwani, Jeffrey D. Ullman," Introduction to Automata Theory,Languages and Computation", Second Edition, earson.

Web links and Video Lectures (e-Resources):

- https://archive.nptel.ac.in/courses/106/105/106105196/
- https://archive.nptel.ac.in/courses/106/106/106106049/
- https://nptelvideos.com/course.php?id=717

Details of the teaching aids:

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

Signature of the
Course In-Charge

Signature of the
Module Co-ordinator

Signature of the HOD
Head of the Department
Dept. of Computers and Communication Engg.
K. S. Institute of Technology
Bengaluru - 560 109.

K S INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF COMPUTER AND COMMUNICATION ENGINEERING
LESSON PLAN 2024-25 (ODD)

NAME OF THE STAFF : SHILPA M.

COURSE TYPE/SUBJECT CODE/NAME : INTEGRATED / BCS358A /Data Analytics with Excel

YEAR/SEMESTER/SEC : 2 /III/ 'A'

ACADEMIC YEAR : 2024-2025

Sl. No.	Topic to be covered	Teaching Aid	Proposed Date	
			A1	A2
1	Introduction , Getting Started with Excel: Creation of spread sheets, Insertion of rows and columns, Drag & Fill, use of Aggregate functions.	LCD+BB	23/8/2024	22/8/2024
2	Working with Data: Importing data, Data Entry & Manipulation, Sorting & Filtering.	LCD+BB	30/08/2024	29/8/2024
3	Working with Data: Data Validation, Pivot Tables & Pivot Charts.	LCD+BB	6/9/2024	5/9/2024
4	Data Analysis Process: Conditional Formatting, What-If Analysis, Data Tables, Charts & Graphs.	LCD+BB	20/9/2024	12/9/2024
5	Cleaning Data with Text Functions: use of UPPER and LOWER, TRIM function, Concatenate.	LCD+BB	27/9/2024	19/9/2024

6	Cleaning Data Containing Date and Time Values:use of DATEVALUE function, DATEADD and DATEDIF, TIMEVALUE functions.	LCD+BB	27/9/2024	26/9/2024
7	Conditional Formatting: formatting, parsing, and High lighting data in spreadsheets during data analysis.	LCD+BB	4/10/2024	3/10/2024
8	Working with Multiple Sheets: work with multiple sheets within a workbook is crucial for organizing and managing data, perform complex calculations and create comprehensive reports.	LCD+BB	8/10/2024	24/10/2024
9	Create worksheet with following fields: Emp no, Ename, Basic Pay(BP), Travelling Allowance(TA), Dearness allowance(DA), House Rent Allowance(HRA), Income Tax(IT), Provident Fund(PF), Net Pay(NP). Use appropriate formulas to calculate the above scenario. Analyse the data using appropriate chart and report the data.	LCD+BB	15/11/2024	7/11/2024
10	Create worksheet on Inventory Management: Sheet should contain Product code, Product name, Product type, MRP, Cost after % of discount, Date of purchase. Use appropriate formulas to calculate the above scenario. Analyse the data using appropriate chart and report the data.	LCD+BB	15/11/2024	14/11/2024
11	Create worksheet on Sales analysis of Merchandise Store: data consisting of Order ID, Customer ID, Gender, age, and date of order, month, online platform, Category of product, size, quantity, amount, shipping city and other details. Use of formula to segregate different categories and perform a comparative study using pivot tables and different sort of charts.	LCD+BB	29/11/2024	21/11/2024
12	Generation of report & presentation using Auto filter & macro.	LCD+BB	29/11/2024	28/11/2024

13	Lab test		17/12/2024	17/12/2024

Suggested Learning Resources:

- **Berk & Carey** - Data Analysis with Microsoft® Excel: Updated for Offi ce 2007®, Third Edition, © 2010 Brooks/Cole, Cengage Learning, ISBN-13: 978-0-495-39178-4
- **Wayne L. Winston** - Microsoft Excel 2019: Data Analysis And Business Modeling, PHI, ISBN: 9789389347180
- **Aryan Gupta** - Data Analysis in Excel: The Best Guide.
(https://www.simplilearn.com/tutorials/excel-tutorial/data-analysis-excel)

Shilpa.M

Signature of Course In-Charge

Signature of HOD

Head of the Department
Dept. of Computers and Communication Engg.
K. S. Institute of Technology
Bengaluru - 560 109.

Signature of Principal

K S INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF COMPUTER & COMMUNICATION ENGINEERING

LESSON PLAN 2024-25 ODD SEMESTER

COURSE INCHARGE :Ms .T.NAGA JYOTHI

COURSE CODE / TITLE :BSCK307/ Social Connect & Responsibility

YEAR/ SEMESTER/SECTION : II/III/A

BRANCH/STREAM : COMPUTER& COMMUNICATION ENGINEERING

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	Part1:Plantation and adoption of a tree					
1	**Plantation and adoption of a tree:** Plantation of a tree that will be adopted for four years by a group of BE / B.Tech students. (ONE STUDENT ONE TREE) They will also make an except either as a documentary or a photo blog describing the plant's origin, its usage in daily life, its appearance in folklore and literature---Objectives,Visit,casestudy,report,outcomes.	Objectives, Visit, case study,report,outcomes		6	6	19/08/2024 To 05/09/2024
	Part2:Heritage walks and crafts corner					
2	**Heritage walk and crafts corner:** Heritage tour, knowing the history and culture of the city, connecting to people around through their history, knowing the city and its craftsman, photo blog and documentary on evolution and Practice of various craft forms.	Objectives, Visit, case study,report,outcomes		6	12	9/09/2024 To 26/09/2024

	Part3:Organic farming and waste management				
3	**Organic farming and waste management:** Usefulness of organic farming, wet waste management in neighboring Villages ,and implementation in the campus.	Objectives, Visit, case study,report,outcomes	6	18	30/09/2024 To 18/10/2024
	Part4:Water conservation				
4	**Water conservation:** Knowing the present practices in the surrounding villages and implementation in the campus, Documentary or photo blog presenting the current practices	Objectives, Visit, case study,report,outcomes	4	20	21/10/2024 To 09/11/2024
	Part5:Food walk				
5	**Foodwalk:** City' sculinary practices ,food lore ,and indigenous materials of the region used in cooking	Objectives, Visit, case study,report,outcomes	4	24	11/11/2024 To 05/12/2024
6	**Seminar/Presentation**				09/12/2024 To 21/12/2024

Plus40 hour Practical Session/field Activities

Activities: Seminar, Quizzes, Presentations, Jamming session, open mic, and poetry: Platform to connect to others. Share the stories with others. Share the experience of Social Connect.Exhibit the talent like playing instruments, singing ,one-act play, art-painting ,and fine art.

Course Topics:
The course will introduce social context and various players in the social space, and present approaches to discovering and understanding social needs. Social immersion and inspiring conversional will culminate in developing an actual, idea for problem-based intervention, based on an in-depth understanding of a key social problem.

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

Head of the Department
Dept. of Computers and Communication Engg.
K. S. Institute of Technology

K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF COMPUTER COMMUNICATION ENGINEERING
LESSON PLAN 2024-25 ODD SEMESTER

COURSE INCHARGE : **Prof. D SARITHA**

COURSE TYPE / CODE / TITLE : **INTEGRATED / BPLCK105B/ 205B / INTRODUCTION TO PYTHON PROGRAMMING**

YEAR/ SEMESTER/SECTION : **I / I / 'J' section**

BRANCH : **CCE**

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	Module 1					
1	**Python Basics:** Entering Expressions into the Interactive Shell.	L+I	BB	1	1	30-09-2024
2	The Integer, Floating-Point, and String Data Types.	L+I	BB	1	2	01-10-2024
3	String Concatenation and Replication.	L+I	BB	1	3	03-10-2024
4	Storing Values in Variables.	L+I	BB	1	4	07-10-2024
5	Your First Program, Dissecting Your Program,	L+I	BB	1	5	08-10-2024
6	**Lab programs: Module-I** • Introduction • About Python Installation Example programs	L+I, PS	LCD	Lab Session- 2 Hours	2	B1:04-10-2024 B2:03-10-2024

7	**Flow control:** Boolean Values, Comparison Operators.	L+I	BB	1	6	09-10-2024
8	Boolean Operators, Mixing Boolean and Comparison Operators.	L+I	BB	1	7	10-10-2024
9	Elements of Flow Control, Program Execution.	L+I	BB	1	8	14-10-2024
10	Flow Control Statements.	L+I	BB	1	9	15-10-2024
11	Importing Modules, Ending a Program Early with sys.exit( )	L+I	BB	1	10	16-10-2024
12	1a. Develop a program to read the student details like Name, USN, and Marks in three subjects. Display the student details, total marks and percentage with suitable messages. b. Develop a program to read the name and year of birth of a person. Display whether the person is a Senior citizen or not.	L+I, PS	LCD	LabSession-2 Hours	2	B1:18-10-2024 B2:10-10-2024
13	**Functions:** def Statements with Parameters, Return Values and return Statements.	L+I	BB	1	11	21-10-2024
14	The None Value, Keyword Arguments and print( ).	L+I	BB	1	12	22-10-2024
15	Local and Global Scope, The global Statement.	L+I	BB	1	13	23-10-2024
16	Exception Handling, A Short Program: Guess the Number	L+I	BB	1	14	24-10-2024
17	2a. Develop a program to generate Fibonacci sequence of length (N). Read N from the console. b. Write a function to calculate factorial of a number. Develop a program to compute binomial Coefficient (Given N and R).	L+I, PS	LCD	LabSession-2 Hours	2	B1:25-10-2024 B2:24-10-2024
	Module-II					
18	**Lists:** The List Data Type, Working with Lists	L+I	BB	1	15	28-10-2024
19	Augmented Assignment Operators.	L+I	BB	1	16	29-10-2024
20	Methods	L+I	BB	1	17	30-10-2024

21	Example Program: Magic 8 Ball with a List	L+I	BB	1	18	07-11-2024
22	**Module-II:** 3. Read N numbers from the console and create a list. Develop a program to print mean, variance and standard deviation with suitable messages.	L+I,PS	LCD	LabSession-2 Hours	2	B1:08-11-2024 B2:07-11-2024
	IA-1(04,05,06)-NOV-2024					
23	List-like Types: Strings	L+I	BB	1	19	11-11-2024
24	Tuples	L+I	BB	1	20	12-11-2024
25	References	L+I	BB	1	21	13-11-2024
	Module-II					
26	**Dictionaries and Structuring Data:** The Dictionary Data Type	L+I	BB	1	22	14-11-2024
27	Pretty Printing	L+I	BB	1	23	19-11-2024
	Lab Programs: Module-II: 4. Read a multi-digit number (as chars) from the console. Develop a program to print the frequency of each digit with suitable message.	L+I, PS	LCD	LabSession-2 Hours	2	B1:15-11-2024 B2:14-11-2024
28	Using Data Structures to Model Real-World Things	L+I	BB	1	24	20-11-2024
	Module-III					
29	**Manipulating Strings:** Working with Strings, Useful String Methods, Password Locker.	L+I	BB	1	25	21-11-2024
	Module-III: 5. Develop a program to print 10 most frequently appearing words in a text file. [Hint: Use dictionary with distinct words and their frequency of occurrences. Sort the dictionary in the reverse order of frequency and display dictionary slice of first 10 items]	L+I, PS	LCD	LabSession-2 Hours	2	B1:22-11-2024 B2:21-11-2024
30	Project: Adding Bullets to Wiki Markup.	L+I	BB	1	26	25-11-2024
31	**Reading and Writing Files:** Files and File Paths, The os.path Module.	L+I	BB	1	27	26-11-2024

32	The File Reading/Writing Process	L+I	BB	1	28	27-11-2024
33	The File Reading/Writing Process.	L+I	BB	1	29	28-11-2024
34	6. Develop a program to sort the contents of a text file and write the sorted contents into a separate text file. [Hint: Use string methods strip(), len(), list methods sort(), append(), and file methods open(),readlines(), and write()].	L+I, PS	LCD	LabSession-2 Hours	2	B1:29-11-2024 B2:28-11-2024
35	Saving Variables with the shelve Module	L+I	BB	1	30	02-12-2024
36	Saving Variables with the print.format( ) Function	L+I	BB	1	31	03-12-2024
37	Project: Generating Random Quiz Files.	L+I	BB	1	32	04-12-2024
38	Project: Multiclipboard	L+I	BB	1	33	05-12-2024
39	**Module-IV:** 7.Develop a program to backing Up a given Folder (Folder in a current working directory) into a ZIP File by using relevant modules and suitable methods.	L+I, PS	LCD	LabSession-2 Hours	2	B1:06-12-2024 B2:05-12-2024
	Module IV					
40	**Organizing Files:** The shutil Module, Walking a Directory Tree	L+I	BB	1	34	09-12-2024
41	Compressing Files with the zipfile Module	L+I	BB	1	35	10-12-2024
42	Project: Renaming Files with American-Style	L+I	BB	1	36	11-12-2024
43	Dates to European-Style Dates	L+I	BB	1	37	16-12-2024
44	**Lab Programs: Module-IV:** 8. Write a function named DivExp which takes TWO parameters a, b and returns a value c (c=a/b). Write suitable assertion for a>0 in function DivExp and raise an exception for when b=0. Develop a suitable program which reads two values from the console and calls a function DivExp.	L+I, PS	LCD	LabSession-2 Hours	2	B1:20-12-2024 B2:19-12-2024

IA-2(12,13,14)-DEC-2024						
45	Project: Backing Up a Folder into a ZIP File	L+I	BB	1	38	17-12-2024
46	Revision IA-II	L+I	BB	1	39	18-12-2024
47	**Debugging:** Raising Exceptions	L+I	BB	1	40	19-12-2024
48	**Module-V:** 9. Define a function which takes TWO objects representing complex numbers and returns new complex number with a addition of two complex numbers. Define a suitable class 'Complex' to represent the complex number. Develop a program to read N (N >=2) complex numbers and to compute the addition of N complex numbers.	L+I, PS	LCD	LabSession-2 Hours	2	B1:27-12-2024 B2:26-12-2024
49	Getting the Traceback as a String	L+I	BB	1	41	19-12-2024
50	Assertions, Logging	L+I	BB	1	42	23-12-2024
51	IDLE"s Debugger.	L+I	BB	1	43	24-12-2024
52	**Classes and Objects:** Programmer-defined types.	L+I	BB	1	44	26-12-2024
53	Attributes, Rectangles.	L+I	BB	1	45	30-12-2024
54	Instances as return Values.	L+I	BB	1	46	31-12-2024
55	Objects are mutable, Copying	L+I	BB	1	47	01-01-2025
56	10. Develop a program that uses class Student which prompts the user to enter marks in three subjects and calculates total marks, percentage and displays the score card details. [Hint: Use list to store the marks in three subjects and total marks. Use __init__() method to initialize name, USN and the lists to storemarks and	L+I, PS	LCD	LabSession-2 Hours	2	B1:03-01-2025 B2:02-01-2025

	total, Use getMarks() method to read marks into the list, and display() method to display the score card details.]					
57	**Classes and Functions:** Time, Pure functions, Modifiers	L+I	BB	1	48	02-01-2025
58	Prototyping versus planning.	L+I	BB	1	49	06-01-2025
59	**Classes and methods:** Object-oriented features, Printing objects, Another example	L+I	BB	1	50	07-01-2025
60	A more complicated example, The init method	L+I	BB	1	51	08-01-2025
61	The __str__ method, Operator overloading, Type-based Dispatch	L+I	BB	1	52	09-01-2025
62	Type-based dispatch	L+I	BB	1	53	13-01-2025
	IA-III (15,16,17)-JAN-2025					
63	Polymorphism	L+I	BB	1	54	20-01-2025
64	Interface and implementation	L+I	BB	1	55	21-01-2025
65	Lab Test	L+I	BB	1	56	22-01-2025

Text Books:

1. Al Sweigart,"Automate the Boring Stuff with Python",1stEdition, No Starch Press, 2015.(Available under CC-BY-NC-SA license at https://automatetheboringstuff.com/)(Chapters 1 to 18, except 12) for lambda functions use this link: https://www.learnbyexample.org/python-lambda-function/

2. Allen B. Downey, "Think Python: How to Think Like a Computer Scientist", 2nd Edition,Green Tea Press, 2015. (Available under CC-BY-NC license athttp://greenteapress.com/thinkpython2/thinkpython2.pdf(Chapters 13, 15, 16, 17, 18) (Download pdf/html files from the above link)

Web links and Video Lectures (e-Resources):

- https://www.learnbyexample.org/python/
- https://www.learnpython.org/
- https://pythontutor.com/visualize.html#mode=edit

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Signature of the Course In-Charge	Signature of the Module Co-ordinator	Signature of the HOD	Signature of the PRINCIPAL

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