Detailed Program

Bachelor of Technology (B.Tech.)

Computer Science Engineering (CSE)

&

CSE with Specialization in AI and ML

Semester-V

(2024-2028)

DOC202406220017

RNB GLOBAL UNIVERSITY
Educating stars for tomorrow

RNB GLOBAL UNIVERSITY
RNB Global City, Ganganagar Road,
Bikaner, Rajasthan 334601

OVERVIEW

RNB Global University follows Semester System. Accordingly, each academic year is divided into two semesters**, Odd (July-December) and Even (January-June)**. Besides this, the university follows a system of continuous evaluation along with regular updating in course curricula and teaching pedagogy.

The curriculum for B. Tech (CSE) Program along **for (July-December) Odd Semester 2026** with examination pattern is as follows:

Course Scheme

Semester -V

S. No.	Course Code	Course Category	Course Title	L	T	P	Credits
1	CSEC14300	DSC-18(a)	Analysis and Design of Algorithm	3	0	0	3
2	CSEC14301	DSC-18(b)	Analysis and Design of Algorithm Lab	0	0	2	1
3	CSEC14302	DSC-19(a)	Database Management Systems with MySQL	3	0	0	3
4	CSEC14303	DSC-19(b)	Database Management Systems with MySQL Lab	0	0	2	1
5	CSEC14304	DSC-20(a)	Computer Graphics	3	0	0	3
6	CSEC14305	DSC-20(b)	Computer Graphics Lab	0	0	2	1
7	CSEC14306	DSC-21(a)	Core Java	3	0	0	3
8	CSEC14307	DSC-21(b)	Core Java Lab	0	0	2	1
9	CSEC14308	DSC-22(a)	PHP & My SQL	3	0	0	3
10	CSEC14309	DSC-22(b)	PHP & My SQL Lab	0	0	2	1
11	CSEE14000	DSE-1(a)	Elective -I	3	0	0	3
12	CSEE14001	DSE-1(b)	Elective -I	0	0	2	1
13	IAPC99349	IAPC-1	Summer Internship and Report	0	0	8	4
14	SEC077005	SEC-5	Ability & Skill Enhancement – V	2	0	0	2
15	WHNN99000		Workshops/ Seminars/Human Values/ Social Service/NCC/NSS	-	-	-	1
		Total		**20**	**0**	**20**	**31**

ELECTIVE-I

S. No.	Course Code	Course Name	Credits
1	CSEE14000	**Microprocessor (DSE-1)**	3
2	CSEE14001	**Microprocessor Lab (DSE-1)**	1
3	CSEE14002	LAMP Technologies	4
4	CSEE14003	Embedded Systems	4
5	CSEE14004	Mobile Application Programming	4
6		Any Related MOOC Course	4

SPECIALIZATION ELECTIVES-I FOR AI & MACHINE LEARNING

S.No.	Course Code	Course Name	L	T	P	Credits
1	CSEE14032	Deep Learning	3	0	0	3
2	CSEE14033	Deep Learning Lab	0	0	2	1

EVALUATION SCHEME- THEORY

The evaluation of the theory paper of B.Tech would be based on Internal and External Assessments. Internal Assessment would consist of 50% of the marks (50 marks) and external assessment (in form of End Term Exam) would consist of remaining 50% marks (50 marks). Detailed scheme of Internal and External Assessments as follows:

Internal Assessment

The distribution of Internal Assessment Marks is as follows:

Type	Details	Marks
Mid Term	Two Mid-term Sessional of 15 marks each (15+15)	30
Marks obtained in various Tests, Assignments, Presentations, Quiz, Tutorials, etc.	Average of marks obtained	15
Attendance	75%+ : 5 marks	5
TOTAL	**50**	

External Assessment

Type	Marks
Theory	50

EVALUATION SCHEME -PRACTICAL

The evaluation of the practical paper of B. Tech would be based on Internal and External Assessments. Internal Assessment would consist of 50% of the marks (50 marks) and external assessment (in form of End Term Exam) would consist of remaining 50% marks (50 marks). Detailed scheme of Internal and External Assessment is as follows:

Internal Assessment

Type	Details	Marks
Marks obtained in various manuals, practical file, participation, any model prepared, output of practical	Average of marks obtained	45
Attendance	75%+ : 5 marks	5
TOTAL	**50**	

External Assessment

Type	Marks
Practical	50

EVALUATION SCHEME- WORKSHOPS & SEMINARS & NCC/NSS

1. NCC/NSS will be completed from Semester I – Semester IV. It will be evaluated internally by the institute. The credit for this will be given at the end of each Semester.

2. The students have to join club/clubs with the active participation in different activities of club. The students would be continuously assessed from Semester-I to Semester-IV and credits and marks would be given after the end of each Semester.

Bachelor of Technology – CSE (Four Years Course)

1. Vision

To deliver a high-quality education that will produce engineers of the highest caliber, equipped with the newest information and cutting-edge concepts in computer science engineering to fulfil the demands of industry and society.

2. Mission

To create an academic setting for the growth of professionals equipped with the knowledge, abilities, values, and self-assurance to assume leadership positions in the field of computer science and engineering.

To promote a culture of research that produces knowledge and cutting-edge technologies that aid in society's sustainable development.

To improve academic collaborations for international exposure.

3. PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEO1: To produce studentswith strong foundation of knowledge and skills in the field of computer science and engineering.

PEO2: To produce students who are employable in private/public sector/research organizations or work as an entrepreneur.

PEO3: To produce students who can provide solutions to problems in their profession by applying computer engineering theory and practices.

PEO4: To produce graduates who can provide leadership and are effective in multidisciplinary environment.

4. PROGRAMME OUTCOMES (POs)

Engineering Graduates will be able to:

PO1: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.

PO3: Design/Development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitation.

PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

5. PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO1: The ability to understand, analyze and develop computer programs in the areas related to algorithms, system software, multimedia, web design, big data analytics and networking for efficient design of computer-based systems of varying complexity.

PSO2: The ability to employ modern computer languages, environments, and platforms in creating innovative career paths to be an entrepreneur and a zest for higher studies/employability in the field of Computer Science & Engineering.

PSO3: Cultivate the field of computing and its latest trends, to pursue teaching, research & development activities and to work effectively in a team.

6. Course Outcomes		
Course Codes & Course Names	**After completion of these courses' students should be able to**	
CSEE14000-Microprocessor	**CO1:**	Define the basics of Digital Systems.
	CO2:	Explain the working of a microprocessor/controller.
	CO3:	Build a program for processor using assembly language.
	CO4:	Classify the different peripherals in a digital system.
	CO5:	Design and analyze combinational and sequential circuits.
CSEE14001-Microprocessor Lab	**CO1:**	Define the higher processor architectures descended from ADC, DAC, 8253, Printer, UP- PC Interface.
	CO2:	Explain the architecture of the advanced processor thoroughly to use the resources for programming.
	CO3:	Apply the assembly language programming to develop small real life embedded application.
	CO4:	Construct an executable file and use it.
	CO5:	Create a model on UP-PC interface.
CSEC14300-Analysis and Design of Algorithm	**CO1:**	Find the various methods of calculating complexity.
	CO2:	Illustrate the best method for different algorithms.
	CO3:	Make use of computational geometry, like Lower bound theory, modular arithmetic, and CRT.
	CO4:	Various Decision Problems like NP Complete, NP hard.
	CO5:	Analyse the knowledge of Graph and its algorithm.
CSEC14301-Analysis and Design of Algorithm Lab	**CO**	Demonstrate the Divide and Conquer algorithm design technique for various applications.
	CO	Apply the dynamic programming algorithm design technique for various applications.
	CO	Design a Greedy algorithm technique for various applications.
	CO	Develop the backtracking algorithm technique for various applications.
	CO	Create a program to find the Time & Space Complexity.
CSEC14302-Database Management Systems with MySQL	**CO1:**	Explain the database management basics and different models and use for database design.
	CO2:	Apply the different form of normalization on the Database.
	CO3:	Analyze the concepts of transaction, concurrency, and recovery systems.
	CO4:	Design and architecture of relational model, relational algebra, and SQL queries.
	CO5:	Ability to compare different storage structures

CSEC14303-Database Management Systems with MySQL Lab	**CO1:**	Explain the use advanced database Programming concepts.
	CO2:	Develop the ability to handle databases of varying complexities.
	CO3:	Compare the types of normalization by using a database.
	CO4:	Design software solutions by evaluating alternate architectural patterns.
	CO5:	Able to create triggers, cursors for given problem
CSEC14304-Computer Graphics	**CO1:**	Explain the structure of modern computer graphics system.
	CO2:	Identify the basic principles of implementing computer graphics primitives.
	CO3:	Classify key algorithms for modeling and rendering graphical data.
	CO4:	Develop design and problem-solving skills with application to computer graphics.
	CO5:	Able to Create animation scenes
CSEC14305-Computer Graphics Lab	**CO1:**	Demonstrate the competency to understand the concepts related to Computer Vision and Virtual reality.
	CO2:	Develop scientific and strategic approach to solve complex problems Computer in the domain of Computer Graphics.
	CO3:	Apply mathematics and logic to develop Computer programs for elementary graphic operations.
	CO4:	Create the logic to develop animation and gaming programs.
	CO5:	Create programs for animation scenes
CSEC14306-Core Java	**CO1:**	Explain the use of packages and interfaces in java.
	CO2:	Make use of user-defined and inbuilt exceptions Create multi-threaded Applications.
	CO3:	Classify all types of Character and Byte Streams.
	CO4:	Create GUI based trivial applications.
	CO5:	Analyse and Design GUI based applications using swings and applets
CSEC14307-Core Java Lab	**CO1:**	Explain inheritance, polymorphism and object relationship in java.
	CO2:	Apply decision and iteration control structures to implement algorithms in Java.
	CO3:	Compare String and string buffer methods.
	CO4:	Build the implement Packages.
	CO5:	Able to create GUI based applications using swings and applets
CSEC14308-PHP & My SQL	**CO1:**	Explain the differences between typical scripting languages and typical system and application programming languages.
	CO2:	Apply your knowledge of the strengths and weaknesses of scripting languages to select an implementation language.

	CO3:	Analyse server-side scripts. File uploads and Database Connections.
	CO4:	Create software systems using scripting languages like VB Script and JavaScript.
	CO5:	Able to contrast server side scripting and Server side programming and develop database connectivity by make use of java and PHP.
CSEC14309- PHP & My SQL Lab	**CO1:**	Define PHP programming language.
	CO2:	Demonstrate the basics of PHP object-oriented programming concepts.
	CO3:	Build of Array concepts.
	CO4:	Create some real time software modules.
	CO5:	Able to develop Web applications by using JSP with Database Connectivity.
SEC077005- Ability and Skill Enhancement -V	**CO1:**	Express and build leadership quality
	CO2:	Recall the traits of Successful Entrepreneurs, and Entrepreneurial qualities
	CO3:	Classify the differences between organizational decision-making process, entrepreneurial decision making process
	CO4:	Create work related skills and prepare effective interview questions to conduct effective interviews.
	CO5:	Enhance employability skills
IAPC99349- Summer Internship and Report	**CO1:**	Encouraged to take internship program during their semester break.
	CO2:	Give guidelines, suggestions, and scope regarding companies.
	CO3:	Provide the interacting lectures with the industrial experts.
	CO4:	Improve the skills for choose best company for internship and make a report on internship.
	CO5:	Create competency and skills to take decisions during crisis and conflict situations.

Electives:

CSEE14032- Deep Learning	**CO1:**	Able to understand the mathematics behind functioning of artificial neural networks
	CO2:	Able to analyze the given dataset for designing a neural network-based solution
	CO3:	Able to carry out design and implementation of deep learning models for signal/image processing applications
	CO4:	Able to design and deploy simple TensorFlow-based deep learning solutions to classification problems
	CO5:	Design deep learning solutions for complex real-world Problems using different deep learning tools.

CSEE14033- Deep Learning Lab	**CO1:**	Make use of deep learning APIs like Keras
	CO2:	Implement multiple conversions for Analysis
	CO3:	Apply deep learning techniques for object identification and segmentation
	CO4:	Implement RNN and CNN for multiple problems
	CO5:	Implement Autoencoders and GAN.

CSEE14002- LAMP Technologies	**CO1:**	Understand and configure a LAMP stack environment.
	CO2:	Develop dynamic web applications using PHP and MySQL.
	CO3:	Implement basic Linux system administration for hosting web applications.
	CO4:	Integrate backend and frontend functionality using PHP.
	CO5:	Apply security and optimization techniques for web development.

CSEE14003- Embedded Systems	**CO1:**	Understand the microprocessor architecture and its components used in embedded systems
	CO2:	Write the 8051-assembly language code for specific purposes
	CO3:	Implement code for interfacing various devices.
	CO4:	Develop simple embedded systems for real time operations
	CO5:	Composing simple embedded system with error free software to obtain target system

CSEE14004- Mobile Application Programming	**CO1:**	Analyze the architecture of android and current trends in mobile operating systems.
	CO2:	Apply suitable software tools and APIs for the development of User Interface of a particular mobile application.
	CO3:	Apply intents and broadcast receivers in android application.
	CO4:	Develop and design apps for mobile devices using SQLiteDatabase.
	CO5:	Deploy applications to the Android marketplace for distribution.

7. CO PO Mapping

CSEC14300	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3		3	2	3	2	2	2			2	3
CO2	3	2	2		3	3						3
CO3			2		2				2			
CO4	2	2	2	2		3			2			3
CO5	3		3		3		3	3		3	3	2

CSEC14301	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2					3	2		3
CO2	3	3	2	3	3	3	3	2	3		2	3
CO3	3	3		2	3		3	2		3	3	3
CO4	2		3	2	3		3	3		3	3	
CO5		2			2	3		2	3	2		2

CSEC14302	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3			2	3	3		3				3
CO2	3	2	3		3					2	3	3
CO3	2	2	3	2		3			2		2	
CO4			2			3				2	3	3
CO5	2			3				2	3	3		2

CSEC14303	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2		3	3	3	3	3	3	3
CO2	2	2	3		3	3		3		3	3	
CO3			2		3					3		3
CO4	3	3	2	2	3				3	3		
CO5	2			3		3	3	3			3	2

CSEC14304	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3		2		3			3	2		3
CO2	3	2	2	3		3				2		3
CO3	2	2		3	2				2		2	
CO4		2		2		3			3	2		3
CO5	2		3		3		3	3			3	2

CSEC14305	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2			3	3	3	3	2	3
CO2	3	3	3		2		3	3		3	3	3
CO3	2		2	3	3	3			3		3	3
CO4		2	3		3	3		3		2	3	
CO5	2			3			3		3			2

CSEC14306	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3		2		2			2	2		3
CO2	2	3	3		2			2		2	3	3
CO3	2					2			3			3
CO4	2	2		2		3			3	2		3
CO5		2	3		3		3	3			3	2

CSEC14307	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2		3	3		3	3		3
CO2	2	2		2	3	3		3	3	3	3	
CO3		2	2						3		3	3
CO4	3		2	2	3				3	3	3	2
CO5	2	3			3	2	2	2				3

CSEC14308	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3		2	2	3	3		3		2		3
CO2	2	2	2		3	2				2	3	3
CO3	2	2	3	2	2	3			2	2	2	3
CO4			2		2			2		3	3	3
CO5	3	3		3		2		3	3		2	

CSEC14309	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3		3	2			3	3	3	3	2	
CO2	2	3	2	3	2		3	3	2	3		3
CO3	3				2	3						
CO4		2	3		3	3	3	3	3	2	3	3
CO5	3	3		3	3				3	2	3	2

CSEE14000	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3		2				2	2		2	3
CO2	3	2	3	3	2	3	2		2	3	3	
CO3	2		2			3	2	2	3	2		3
CO4		2	2	2	2	2					2	3
CO5	2			3			3	3	2	3		2

CSEE14001	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2		3	3	3	3	3	2	3
CO2	2	3		2	3	2	2	3		2		
CO3		2		2					2		3	
CO4	2	3	3	2	3				3	3	3	3
CO5			3			3	3	2			2	2

SEC077005	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	2	2					3	2	2
CO2	2			3	2	2		2		3		2
CO3	3	3				2		3	2	3	3	2
CO4		2	3	3	2	3		3	2	3		2
CO5	3	3	2	2	3	2	3	2	3	2	3	2

IAPC99349	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	3	3	3		2	2			3
CO2		2	3		2	2	2		3	3	3	3
CO3	2			3		2		3	2			3
CO4	3	3	2	2	2			2		3	2	2
CO5	3	3	3	3	3	3	3	3	3	3	3	3

CSEE14002	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	1	3	1			1			1
CO2	3	3	2	1	3	1			2			1
CO3	3	3	3	2	3	1		1	2	1		2
CO4	3	3	3	3	3	2		1	3	2		3
CO5	3	3	3	3	3	3		1	3	3	31	3

CSEE14003	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2					3	2		3
CO2	3	3	2	3	3	3	3	2	3		2	3
CO3	3	3		2	3		3	2		3	3	3
CO4	2		3	2	3		3	3		3	3	
CO5		2			2	3		2	3	2		2

CSEE14004	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2					3	2		3
CO2	3	3	2	3	3	3	3	2	3		2	3
CO3	3	3		2	3		3	2		3	3	3
CO4	2		3	2	3		3	3		3	3	
CO5		2			2	3		2	3	2		2

CSEE14032	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2					3	2		3
CO2	3	3	2	3	3	3	3	2	3		2	3
CO3	3	3		2	3		3	2		3	3	3
CO4	2		3	2	3		3	3		3	3	
CO5		2			2	3		2	3	2		2

CSEE14033	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2					3	2		3
CO2	3	3	2	3	3	3	3	2	3		2	3
CO3	3	3		2	3		3	2		3	3	3
CO4	2		3	2	3		3	3		3	3	
CO5		2			2	3		2	3	2		2

8.Curriculum

Course Name: Microprocessor

Course Code: CSEE14000

Course Outline:

Unit I: Introduction to Microprocessors
Need for Flexible Logic and Evolution of Microprocessors, Applications, Generic Architecture of a Microprocessor; INTEL 8085 Microprocessor: Pin Functions, Architecture, Addressing Modes, Instruction Set, Timing Diagrams, Interrupts, Programming Examples.

Unit II: Basic Input/output Techniques
Serial I/O, Parallel I/O, Programmed I/O, Interrupt Driven I/O, Direct Memory Access. Peripheral Controllers: USART (8251), RS-232C, Programmable Peripheral Interface (8255), Programmable Interrupt Controller (8259), Programmable Timer (8253/8254), Programmable Keyboard and Display Interface, DMA Controller (8257, 8237).

Unit III*:* INTEL 8086 Microprocessor
Pin Functions, Architecture, Characteristics and Basic Features of Family, Segmented Memory, Addressing Modes, Instruction Set, Data Transfer Instructions, Arithmetic, Logical, Shift & Rotate Instructions, String Instructions, Flag Control Instructions, Transfer of Control Instructions, Processor Control Instructions, Interrupt Structures, Multitasking and Multiprogramming, Programming Examples.
INTEL 8086 System Configuration: Clock Generator (8284), Bus Controller (8288), MIN/MAX Modes of 8086 and System Configurations.

Unit IV: Interfacing with 8086
Interfacing with RAMs, ROMs along with the explanation of timing diagrams; Interfacing with peripheral ICs like 8255, 8254, 8279, 8259, 8259 etc.; Main Memory System Design: Types of Main Memories, Memory Organization, CPU Read/Write Timing Diagrams,RAM and ROM Interface Requirements, DRAM Interfacing and DRAM Controller (8203);

Suggested Readings:

1. Gaonkar, Ramesh., Microprocessor Architecture, Programming and Applications with the 8085, Penram International Publishing India PVT.LTD. (2005) 5th Ed.
2. Hall, D.V., Microprocessor and Interfacing, Tata McGraw Hill Publishing Company, (2006) 2nd ed.
3. Rafiquzzaman, M., Microprocessors and. Microcomputer-Based System Design, CRC Press, (1995) 2nd ed.
4. Gibson, Glenn A., Liu, Yu-Cheng., Microcomputer Systems: The 8086/8088 Family Architecture Programming And Design, Pearson, (2001) Ist ed.

Course Name: Microprocessors Lab

Course Code: CSEE14001

Course Outline:

Laboratory Work:

1. Introduction to INTEL kit, Programming examples of 8085 and 8086.
2. Interfacing using 8085, 8086 kits, Interfacing of LED seven segment display,
3. ADC, DAC, 8253, Printer, UP- PC Interface. Microprocessor based project.

Course Name: Analysis and Design of Algorithm Course

Code: 19007600

Course Outline:

Unit I: Basics of Algorithm Analysis & Design

Stacks, queues, trees, heaps, sets and graphs; Algorithm Definition, Analyzing algorithms, order arithmetic, time and space complexity.
Algorithm Design Techniques: Divide and conquer; general method, merge sort, selection problem, Recurrences, Solving Recurrences by Substitution method, Recursive Tree Method.

Unit II: Greedy method

Job Sequencing with Deadlines, Knapsack problem, Optimal merge patterns, Optimal Storage on tapes, Minimum spanning trees, Huffman Encoding.
Dynamic Programming: Use of table instead of recursion, all pair shortest Path, 0/1 knapsack, Matrix Chain Multiplication, optimal binary search tree, Longest Common Subsequence, Travelling Salesperson Problem.

Unit III: Search and Traversal

Search techniques: breadth first search, depth first search, code optimization, Insertion Sort,

Quick Sort, Merge Sort, Selection Sort, Binary Search, Linear Search. **Backtracking:** 8 queens' problem, sum of subsets, graph coloring.

Unit IV: Problem clauses
P, NP, NP- Hard and NP-complete, Proving NP-Complete Problems - Satisfiability problem and Vertex Cover Problem; Approximation Algorithms for Travelling Salesman Problem.

Suggested Readings:

1. E.Horowitz & S.Sahani, Fundamentals of Computer Algorithms. Galgotia Publications.
2. Goodrich, Tamassia, Algorithm Analysis & Design, Wiley**.**
3. Corman, Leiserson & Rivest, Introduction to Algorithms, MIT Press.
4. Sara Basse, A.V. Geider, Computer Algorithms, Introduction to Design and Analysis.
5. Robert Lafore, Data Structures & Algorithms in Java, Pearson Education Asia.

Course Name: Analysis and Design of Algorithm Lab

Course Code: CSEC14300

Course Outline:

Laboratory work:

- Implementation of all the algorithmic techniques studied

Course Name: Data Base Management Systems with MySQL

Course Code: CSEC14302

Objectives

- To understand the different issues involved in the design and implementation of a database system.
- To study the physical and logical database designs, database modeling, relational, hierarchical, and network models.
- To understand and use data manipulation language to query, update, and manage database.
- To develop an understanding of essential DBMS concepts such as: database security, Integrity, concurrency, distributed database, and intelligent database, Client/Server (Database Server), Data Warehousing.
- To design and build a simple database system and demonstrate competence with the fundamental tasks involved with modeling, designing, and implementing a DBMS.

Course Outline:

Unit I: Introduction
Data, data processing requirement, desirable characteristics of an ideal data processing system, traditional file-based system, its drawback, concept of data dependency, Def of database, database management system, 3-schema architecture, database terminology, benefits of DBMS, Database development process - conceptual data modeling, logical database design, physical database design, database implementation, database maintenance.

Unit II : Database Analysis
Conceptual data modeling using E-R data model -entities, attributes, relationships, generalization, specialization, specifying constraints. 5 – 6 practical problems based on E-R data model.

Database Design: Logical database design and relational data model: Introduction to relational database theory: *def* of relation, relational model operators, relational model integrity rules, Normalization- 1NF, 2NF, 3NF, 4NF, BCNF & practical problems based on these forms. Denormalization.

Unit III: Database Implementation
Introduction to SQL, DDL aspect of SQL, DML aspect of SQL – update, insert, delete & various form of SELECT- simple, using special operators, aggregate functions, group by clause, sub query, joins, co-related sub query, union clause, exist operator, PL/SQL - cursor, stored function, stored procedure, triggers, error handling, package.

Unit IV : **Allied Topics**
Transaction processing - introduction, concurrency control techniques, database recovery, Overview of: client-server database environment, distributed databases, Object-relational database, object-oriented database, web technology and database, data warehousing and data mining. Comparative study of various DBMS products;

Suggested Readings:

1. H. F. Korth & A. Silverschatz, Database Concepts, Tata Mcgraw Hill.
2. Elmasri & Navathe, Fundamentals of Database Systems, Pearson Education Asia.
3. Hoffer, prescott, McFadden, Modern Database Management, Pearson Education Asia.
4. C. J. Date, Database Systems, Pearson Education Asia.
5. Martin Gruber, Understanding SQL, BPB Publication.
6. Val Occardi, Relational Database: Theory &Practice, BPB Publication, New Delhi.
7. Scott Urman, Oracle PL/SQL Programming, Tata Mcgraw Hill.
8. Ivan Bayross, SQL and PL/SQL, BPB Publication.

Course Name: Data Base Management Systems

with MySQL Lab

Course Code: CSEC14303

Course Outline:

Laboratory work:

1. Data Definition Language (DDL) commands in RDBMS
2. Data Manipulation Language (DML) and Data Control Language (DCL)
3. High level language extensions with cursors
4. High level language extension with Triggers
5. Procedures and Functions
6. Embedded SQL
7. Design and implementation of Banking system
8. Design and implementation of Ticket booking.
9. Design and implementation of banking System.
10. Design and implementation of hostel Management or hotel management
11. Design and implementation of hospital management.
12. Design and implementation of Library Information System

Course Name: Computer Graphics

Course Code: CSEC14304

Objectives

- Identify and explain the core concepts of computer graphics.
- Apply graphics programming techniques to design and create computer graphics scenes.
- Create effective OpenGL programs to solve graphics programming issues, including 3D transformation, objects modeling, color modeling, lighting, textures, and ray tracing.

Course Outline

Unit I: Introduction
The Advantages of Interactive Graphics, Representative Uses of Computer Graphics, Classification of Application Development of Hardware and software for computer Graphics, Conceptual Framework for Interactive Graphics, Overview, Scan: Converting Lines, Scan Converting Circles, Scan Converting Ellipses.

Unit II: Hardcopy
Technologies, Display Technologies, Raster-Scan Display System, Video Controller, Random-Scan Display processor, Input Devices for Operator Interaction, Image Scanners, Working exposure on graphics tools like Dream Weaver, 3D Effects etc, **Clipping** Southland- Cohen Algorithm, Cyrus-Beck Algorithm, Midpoint Subdivision Algorithm.

Unit III: Geometrical Transformation
2D Transformation, Homogeneous Coordinates and Matrix Representation of 2D Transformations, composition of 2D Transformations, the Window-to-Viewport Transformations, Introduction to 3D Transformations Matrix.

Unit IV: Introductory Concepts
Multimedia Definition, CD-ROM and the multimedia highway, Computer Animation (Design, types of animation, using different functions),Uses of Multimedia, Introduction to making multimedia – The stage of Project, hardware &software requirements to make good multimedia skills and Training opportunities in Multimedia Motivation for Multimedia usage.

Suggested Readings:

1. D.Hearn & P.Baker , Computer Graphics, Pearson Education Asia.
2. Foley, Van Dam, Feiner, Hughes, Computer Graphics, Pearson Education Asia.

3. Rogers, Adams, Mathematical Elements for Computer Graphics, Tata Mcgraw Hill.
4. Newman, Sproull, Principles of Interactive Computer Graphics, Tata Mcgraw Hill.
5. Zhigang Xiang, Roy A Plastock, Schaum's Outlines Computer Graphics, Mcgraw *Hill.*

Course Name: Computer Graphics Lab

Course Code: CSEC14305

Course Outline:

Laboratory Work:

1. Writing programs for implementing basic algorithms for line, circle etc.,
2. 2D transformations, clipping, 2D representations, algorithms for back face detection procedure, depth buffer method to display the visible surfaces in a scene containing any number of polyhedrons,
3. A-buffer algorithm to display a scene containing both opaque and transparent surfaces, depth sorting method to display the visible surfaces in a scene containing several polyhedrons.

Course Name: Core Java

Course Code: CSEC14306

Objectives:

- Understand fundamentals of programming such as variables, conditional and iterative execution, methods, etc.
- Understand fundamentals of object-oriented programming in Java, including defining classes, invoking methods, using class libraries, etc.
- Be aware of the important topics and principles of software development.
- Have the ability to write a computer program to solve specified problems.
- Be able to use the Java SDK environment to create, debug and run simple Java programs.

Course Outline

Unit I: Introduction

Object oriented programming, characteristics of object orientated languages, classes, Java **Programming:** Introduction, Data types, access specifiers, operators, control statements, arrays. Classes: Fundamentals, objects, methods, constructors. **Inheritance:** Super class, sub class, this and super operator, method overriding, use of final, packages, abstract class, interface. **Polymorphism:** Method overloading, constructor overloading.

Unit II: Exception Handling
Exception Class, built in checked and unchecked exceptions, user defined exceptions, use of try, catch, throw, throws, finally. **Multi-threaded programming:** Overview, comparison with multiprocessing, Thread class and runnable interface, life cycle, creation of single and multiple threads, thread priorities, overview of Synchronization. **Java Library:** String handling (only main functions), String Buffer class. Elementary concepts of Input/Output :byte and character streams, System.in and System. out, print and printing, reading from a file and writing in a file.

Unit III: Software Development using Java: Applets
Introduction, Life cycle, creation and implementation, AWT controls: Button, Label, Text Field, Text Area, Choice lists, list, scrollbars, check boxes, Layout managers, Elementary concepts of Event Handling: Delegation Event Model, Event classes and listeners, Adapter classes, Inner classes. **Swings:** Introduction and comparison with AWT controls.

Unit IV: Networking Basics
Socket (datagram and TCP/IP based client and server socket), factory methods, Inet Address **JDBC:** JDBC Architecture, JDBC Drivers, Connecting to the Database **Introduction to Advance Java (Servlets):** Life cycle, Interfaces and classes in java. servlet package (only description) Creating a simple servlet.

Suggested Readings:

1. Patrick Naughton and Herbert Schildt, "Java-2 The Complete Reference", TMH.
2. Y. Daniel Liang, "Introduction to Java Programming, Comprehensive Version, 7/e"Pearson.
3. Krishnamoorthy R, PrabhuS ,"Internet and Java Programming", New Age Intl.
4. David Flanagan, Jim Farley, William Crawford and Kris Magnusson, "Java Enterprise in aNutshell", O'Reilly.

Course Name: Core Java Lab

Course Code: CSEC14307

Course Outline

1. Write a program to display "Hello World" in 'JAVA' language
2. Implementation of input and output statements
3. Implementation of control statements.
4. Implementation of functions.
5. Implementation of single dimension, two dimension and three-dimension array

6. Write a JAVA program that uses a recursive function for solving Towers of Hanoi problem.
7. Write a JAVA program to implement the matrix ADT using a class. The operations supported by this ADT are:
   a) Reading a matrix.
   b) Addition of matrices.
   c) Printing a matrix.
   d) Subtraction of matrices.
   e) Multiplication of matrices.
8. Write a JAVA program that overloads the + operator and relational operators (suitable)to perform the following operations:

a) Concatenation of two strings.

b) Comparison of two strings.

9. Write JAVA programs that illustrate how the following forms of inheritance are supported:
   a) Single inheritance
   b) Multiple inheritances
   c) Multi inheritance
   d) Hierarchical inheritance
10. Write a JAVA program that illustrates the order of execution of constructors and destructors when new class is derived from more than one base class.

Course Name: Elective I - PHP & My SQL

Course Code: CSEC14308

Objectives:

- PHP & MYSQL Lab course cover all the practical part of basic or advance programming in php and number of query like create database/table, drop database/table, insert/delete, update data from table, create and remove session/cookie, use basic component of form and string functions etc.

Course Outline

Unit I: Introduction to PHP

What is PHP How PHP better than other Benefits Of Using PHP MYSQL Server Client Environment Web Browse Web Server Installation & Configuration Files.

Development Concept: How PHP Script Work PHP Syntax Write your First PHP Program Embed PHP In HTML/HTML In PHP PHP Data Type Variable In PHP Contents In PHP Operator In PHP Control Structure: If Statement If.....Else Statement If...If Else Statement Nested If Statement Switch Statement

Looping Structure: For Loop While Loop Do...While Loop For each Loop Function: What is function Syntax User Defined Function System Defined Function Parameterized Function Parameterized Function Date & Time Function Hash Function Mail Function

File Inclusion: Include() Require()

Working with Forms What is a Form? Important HTML Tags Super-Global Variable , Different ways to carry form data (GET, POST), isset(), isempty()

Unit II: Array

What is Array Syntax Associative Array Numeric Array Multi-Dimensional Array

String Function Chr() strlen() strpos() strcmp()

Working with File OpeningFile Reading File Writing File Closing File Appending File Uploading File.

OOPs Concept Class & Object Access Modifier Properties of Object Encapsulation and abstraction Inheritance Polymorphism Function overriding Abstract class.

State Management Creating Cookies Set Cookies Destroying Cookies Creating Session Set Session Destroying Session

Error Handling & Exception Introduction to Error Try,catch,throw Block Handling.

Unit III: Introduction to MYSQL

What is Database? Understanding an RDBMS Understanding Tables, Record &Fields SQL Language; Working with MYSQL Admin Working with PHP My Admin Types Data Type Creating Database & Tables Dropping Database &Tables Adding Fields Selecting Table Alerting Fields Properties.

MySQL Function in PHP Database Connections Managing Database Connections Performing Queries Closing Connection.

Unit IV: SQL Queries

Create Database & Table Drop Database & Table Insert Record Select Record Deleting Record Modifying Record WHERE Clause Using Operators Sorting Records Eliminating Duplicates Grouping Records, Having Clause Joining Tables Sub queries Using Table And Column Aliases

Suggested Readings:

1. PHP and MySQL Web Development All-in-One Desk Reference For Dummies, Janet Valade with Tricia Ballad, Bill Ballad, Willey 2008
2. PHP and MySQL Web Development (Developer's Library) Kindle Edition, by Luke Welling, Laura Thomson ,Sams Publishing

Course Name: Elective-I - PHP & My SQL Lab

Course Code: CSEC14309

Course Outline

1. Create a php webpage and print “hello world”.
2. Create a php program to find odd or even number from given number.
3. Write a php program to find maximum among three numbers.
4. Write a PHP program to swap two numbers.
5. Write a PHP Program to demonstrate the variable function:
    a. Gettype()
    b. Settype()
6. Write a PHP Program to demonstrate the variable unction
    a. isset()
    b. unset()
7. Give the example of variable function:
    a. strval()
    b. floatval()
    c. intval()
    d. print_r()
    e. var_dump()
8. Give the example of string function
    a. substr()
    b. substr()
    c. strcmp()
    d. strcasecmp()
    e. strpos()
    f. strpos()
9. Write a PHP program that demonstrate form element(input elements).
10. Write a PHP program that demonstrate passing variable using URL.

i. Write a PHP program that demonstrate use of session:1
ii. Write a PHP program that demonstrate use of session:2

11. Write a program that demonstrate use of cookies: 1
12. Write a program that demonstrate use of cookies: 2
13. Write a PHP program to create a database using MySQL
14. Write a PHP program to drop a database using MySQL.
15. Write a PHP program to create a table in MySQL.
16. Write a PHP program to insert record into a table using MySQL.
17. Write a PHP program to drop table using MySQL.
18. Write a program to update table:6
19. Write a PHP program to select data and show into table format
20. Create a student Registration in PHP and Save and Display the student Records.
21. Write a program to Develop student registration form and display all the submitted data on another page.

Course Name: Ability & Skill Enhancement - V

Course Code: SEC077005

Objectives:

- To make students understand the usage of Grammer in day to day life and improve their fluency and confidence while speaking English.

Course Outline – Final Assessment - Interview with an Entrepreneur /Leader

Unit I: Leadership
What is leadership? Traits of Leadership, Identifying leaders and traits of Leadership, Movie/ Story/ Interviews of leaders: Identify leadership qualities, Debate/ Discussion/ Presentations on leaders.

Unit II: Entrepreneurship
What is Entrepreneurship, Traits of Successful Entrepreneurs, Movie/ Story/Interviews of Entrepreneurs: Identify Entrepreneurial qualities, Debate/ Discussion/Presentation on Entrepreneurs.

Unit III: Organizational Skills & Employability Skills
What are organizational skills, how to develop them, the skills needed to become a successful entrepreneur/administrator, good communication, ambition, courage, hardwork, planning, accountability. Organizational skills can be developed by discipline making a system, rules, delegation of power at workplace, etc.
How to enhance employability; skills, why do we need them, different workplaces, having different needs, different skills, how to recognize different work skills.

Unit IV: Decision making
The process of decision making, its steps, what are its basics, what are the basics of organizational decision-making process, entrepreneurial decision making, how to make a right decision at right time, dilemma.

Unit V: Interview Skills
Conducting Interviews with Leaders/ Entrepreneurs, Preparing Questions, Interviewing the fellow person, do's & don'ts while taking interview.

Course Name: Deep Learning
Course Code: CSEE14032

Course Outline:

Unit I: Artificial Neural Networks- The Neuron-Expressing Linear Perceptrons as Neurons-Feed-Forward Neural Networks- Linear Neurons and Their Limitations –Sigmoid – Tanh – and ReLU Neurons -Softmax Output Layers – Training Feed-Forward Neural Networks-Gradient Descent-Delta Rule and Learning Rates- Gradient Descent with Sigmoidal Neurons- The Backpropagation Algorithm-Stochastic and Minibatch Gradient Descent – Test Sets – Validation Sets – and Overfitting- Preventing Overfitting in Deep Neural Networks – Implementing Neural Networks in TensorFlow.

Unit II: Local Minima in the Error Surfaces of Deep Networks- Model Identifiability- Spurious Local Minima in Deep Networks- Flat Regions in the Error Surface – Momentum-Based Optimization – Learning Rate Adaptation.

Unit III: Convolutional Neural Networks(CNN) – Architecture -Accelerating Training with Batch Normalization- Building a Convolutional Network using TensorFlow- Visualizing Learning in Convolutional Networks – Embedding and Representation Learning -Autoencoder Architecture-Implementing an Autoencoder in TensorFlow –DenoisingSparsity in Autoencoders Models for Sequence Analysis – Recurrent Neural Networks- Vanishing GradientsLong Short-Term Memory (LSTM) Units- TensorFlow Primitives for RNN Models-Augmenting Recurrent Networks with Attention.

Suggested Readings:

- Nikhil Buduma, "Fundamentals of Deep Learning:Designing Next-Generation Machine Intelligence Algorithm", O'Reilly, 2017.
- Ian Goodfellow, YoshuaBengio and Aaron Courville, "Deep Learning", MIT Press, 2016.

Course Name: Deep Learning with Lab
Course Code: CSEE14033

Laboratory Work:

1. Build a deep neural network model start with linear regression using a single variable.
2. Build a deep neural network model start with linear regression using multiple variables.
3. Write a program to convert speech into text.
4. Write a program to convert text into speech.
5. Write a program to convert video into frames.
6. Write a program for Time-Series Forecasting with the LSTM Model.
7. Build a feed forward neural network for prediction of logic gates.
8. Write a program to implement deep learning Techniques for image segmentation.
9. Write a program for object detection using image labeling tools.

Course Name: LAMP Technologies
Course Code: CSEE14002

Unit I: Introduction to LAMP Stack, Overview of Linux, Apache, MySQL, and PHP
Role of LAMP in web development,Setting up a LAMP environment, Basics of Linux commands and directory structure,Introduction to server-client architecture,Installing and configuring the LAMP stack on a local machine,Basic Linux file and permission management.

Unit II: Apache Web ServerInstallation and configuration of Apache,Managing virtual hosts URL rewriting and redirection with .htaccess,Log management and debugging Apache errors Hosting a sample static website using Apache,Configuring custom domain names locally using virtual hosts.

Unit III: MySQL Database Management ,Relational database basics,Installation and configuration of MySQL,Writing basic SQL queries (SELECT, INSERT, UPDATE, DELETE) Database normalization and indexing,Backup and restoration of databases
Creating and managing a sample MySQL database,Writing queries for CRUD operations.

Unit IV: PHP Programming,Basics of PHP scripting,Variables, arrays, and loops in PHP Form handling and validation,Session and cookie management,PHP-MySQL integration Error handling in PHP

Unit V: Security and Optimization,Securing a LAMP application,Input validation and

sanitization,Preventing SQL injection and XSS attacks,HTTPS and SSL certificates
Performance tuning for Apache and MySQL, PHP performance tips and best practice

Reference Books:

1. "PHP and MySQL Web Development" by Luke Welling and Laura Thomson
2. "Linux Administration: A Beginner's Guide" by Wale Soyinka
3. "The Complete Reference: MySQL" by Vikram Vaswani
4. Online Resources:
5. Official documentation for PHP, Apache, and MySQL
6. Tutorials on Linux basics and commands

Course Name: Mobile Application Programming
Course Code: CSEE14004

UNIT-I: Introduction to Android Operating System: Android OS and Features – Android development framework; Installing and running applications on Android Studio, Creating AVDs, Types of Android application; Creating Activities, Activity Life Cycle, Activity states, monitoring state changes

UNIT – II: Android application components – Android Manifest file, Externalizing recourses like Simple Values, Drawables, Layouts, Menus, etc, Building User Interfaces: Fundamental Android UI design, Layouts – Linear, Relative, Grid and Table Layouts. User Interface (UI) Components

UNIT-III: Fragments – Creating fragments, Lifecycle of fragments, Fragment states, Adding fragments to Activity, adding, removing and replacing fragments with fragment transactions, interfacing between fragments and Activities

UNIT-IV: Intents and Broadcasts: Using intents to launch Activities, Types of Intents, Passing data to Intents, Getting results from Activities, Broadcast Receivers – Using Intent filters to service implicit Intents, Resolving Intent filters

UNIT-V Database: Introduction to SQLite database, creating and opening a database, creating tables, inserting retrieving and deleting data;

TEXTBOOKS:

1. Professional Android 4 Application Development, Reto Meier, Wiley India, (Wrox), 2012

2. Android Application Development for Java Programmers, James C Sheusi, Cengage Learning, 2013

Course Name: Embedded Systems
Course Code: CSEE14003

UNIT-I: Embedded Systems Basics: Introduction to Embedded systems, Examples of embedded systems, TypicalHardware,Gates,Timing Diagrams, Memory, Microprocessors, Buses,

DirectMemoryAccess, Interrupts, Microprocess or Architecture, and Interrupt Basics.

UNIT-II: The 8051 Architecture-Introduction, 8051 Micro controller Hardware, Input/output Pin Ports and Circuits, External Memory, Serial data Input/output, Interrupts.

UNIT-III: Basic Assembly Language Programming Concepts: The Assembly Language Programming Process, Programming Tools and Techniques, Programming the 8051.

UNIT-IV: Moving Data: Introduction, Addressing Modes, External Data Moves, Code Memory ReadOnly Data Moves, Push and Pop Opcodes, Data Exchanges. Basic Design Using a Real-Time Operating System: Message Queues, Mailboxes and Pipes, Timer Functions, Events, Memory Management, Interrupt Routines in an RTOS Environment

UNIT-V: Applications: Introduction, keyboards, Human Factor, Key Switch Factors, Keyboard Configurations, Displays, Seven-Segment Numeric Display, D/A and A/D Conversions. Embedded Software Development Tools: Host and Target machines, Linker/Locators for Embedded Software, Getting Embedded Software into the Target System; Debugging Techniques: Testing on Host Machine, Using Laboratory Tools, An Example System.

TEXTBOOKS:

1. An Embedded Software Primer, David E. Simon, Pearson Education.
2. The 8051 Microcontroller, Third Edition, Kenneth J.Ayala, Thomson.

9. Lesson Plans

CSEE14000– Micro processor

Unit	Particulars	Class No.	Pedagogy of Class
Unit-I	INTRODUCTION TO MICROPROCESSOR		
Unit-I	Introduction of Syllabus, Introduction of Microprocessor, Evolution of Microprocessor	C-1	Lecture
Unit-I	Generic Architecture of Microprocessor, Application of Microprocessor	C-2	Lecture
Unit-I	Introduction of 8085 Microprocessor, Pin diagram of Microprocessor, Architecture of microprocessor	C-3	Lecture
Unit-I	Addressing Modes of Microprocessor, Introduction of Instruction, Instruction Type	C-4	Lecture
Unit-I	Home Assignment No. 1 - Based on Computer Evolution		Take Home Assignments
Unit-I	Instruction Set - I - Data Transfer Instructions	C-5	Lecture
Unit-I	Instruction Set - I - Arithmetic Instructions	C-6	Lecture
Unit-I	Instruction Set - I - Logical Instruction	C-7	Lecture
Unit-I	Instruction Set - I - Branch Instruction	C-8	Lecture
Unit-I	Class Room Assignment No. 1 - Based on Instruction	C-9	Class Room Assignment
Unit-I	Timing Diagram and Interrupt	C-10	Lecture
Unit-I	Programming Examples -II	C-11	Lecture
Unit-I	Programming Examples -II	C-12	Lecture
Unit-I	Home Assignment No. 2 - Based on Programming		Take Home Assignments
Unit-I	Clarification Class - 1	C-13	Clarification Class
Unit-II	BASIC INPUT/OUTPUT TECHNIQUES		
Unit-II	Programmed I/O, Interrupt Driven I/O, DMA	C-14	Lecture
Unit-II	Class Room Assignment No. 2 - Based on Programming	C-15	Class Room Assignment
Unit-II	Peripheral Controller, USART, RS-232 C	C-16	Lecture
Unit-II	8255, 8259,8253/8254	C-17	Lecture
Unit-II	DMA Controller 8237/8257	C-18	Lecture
Unit-II	Home Assignment - 3 - Based on Interfacing		Take Home Assignments
Unit-II	Presentation No-1	C-19	Presentation
Unit-II	Clarification Class - 2	C-20	Clarification Class
Unit-II	Programmable Keyboard and Display Interface	C-21	Lecture
Unit-III	INTEL MICROPROCESSOR 8086		
Unit-III	Introduction of 8086, Difference between 8085 and 8086, Architecture of 8086	C-22	Lecture
Unit-III	Class Room Assignment No. 3	C-23	Class Room Assignment
Unit-III	Introduction of 8086, Difference between 8085 and 8086, Architecture of 8086	C-24	Lecture

Unit-III	Pin Diagram of 8086, Features, Addressing modes, segmented Memory	C-25	Lecture
Unit-III	Presentation No. 2	C-26	Presentation
Unit-III	Instruction Set - II	C-27	Lecture
Unit-III	Instruction Set - II	C-28	Lecture
Unit-III	Seminar	C-29	Seminar
Unit-III	Class Room Assignment No. 4	C-30	Class Room Assignment
Unit-III	Clock Generator 8284	C-31	Lecture
Unit-III	Bus Controller	C-32	Lecture
Unit-III	Guest Lecture-I	C-33	Guest lecture
Unit-III	Presentation No. 3	C-34	Presentation
Unit-III	Clarification Class - 3	C-35	Clarification Class
Unit-IV	INTERFACING WITH 8086 MICROPROCESSOR		
Unit-IV	Types of Main Memory, Memory Organization	C-36	Lecture
Unit-IV	Interfacing with RAM, ROMs	C-37	Lecture
Unit-IV	Webinar	C-38	Webinar
Unit-IV	Presentation No. 4	C-39	Presentation
Unit-IV	Types of Main Memory, Memory Organization	C-40	Lecture
Unit-IV	CPU Timing Diagram, RAM/ROM Interface Requirements	C-41	Lecture
Unit-IV	Guest Lecture-II	C-42	Guest lecture
Unit-IV	Clarification Class 4	C-43	Clarification Class
Unit-IV	DRAM Controller	C-44	Lecture
Unit-IV	Webinar-2	C-45	Webinar

CSEE14001– Microprocessor Lab

S. No.	Particulars	Class No.	Pedagogy of Class
1	Introduction of Assembly Language Programming	P-1,2	Practical
2	WAP to add two number using Registers	P-3,4	Practical
3	WAP to add two 8-bit number using Memory location with Carry and Without Carry	P-5,6	Practical
4	WAP to add two 16-bit number using Memory location with Carry and Without Carry	P-7,8	Practical
5	WAP to multiply two number using register and Memory location	P-9,10	Practical
6	WAP to transfer a Block of Data from one location to other location	P-11,12	Practical
7	WAP a find larger number and smallest number	P-13	Practical
8	WAP to find negative and positive number	P-14	Practical
9	WAP to find odd number and even number	P-15	Practical
10	WAP to find largest number and smallest number	P-15	Practical

CSEC14300– Analysis and Design of Algorithm

Unit	Particulars	Class No.	Pedagogy of Class
Unit-I	Basic of Algorithm Analysis & Design, Algorithm Design Techniques		
Unit-I	Algorithm Definition, Analyzing algorithms	C-1	Lecture
Unit-I	Order arithmetic, time and space complexity	C-2	Lecture
Unit-I	Stacks, Queues	C-3	Lecture
Unit-I	Trees, heaps, Sets and graphs	C-4	Lecture
Unit-I	Algorithm Design Techniques: Divide and Conquer: general method	C-5	Lecture
Unit-I	Merge sort	C-6	Lecture
Unit-I	Home Assignment 1		Take Home Assignments
Unit-I	Recurrences, Solving Recurrences by Substitution method	C-7	Lecture
Unit-I	Recursive Tree Method.	C-8	Lecture
	Clarification Class	C-9	Clarification Class
	Presentation 1	C-10	Presentation
Unit-II	Greedy Method		
Unit-II	Job Sequencing with Deadlines	C-11	Lecture
Unit-II	Guest Lecture	C-12	Guest lecture
Unit-II	Classroom Assignment 1	C-13	Class Room Assignment
Unit-II	Knapsack problem	C-14	Lecture
Unit-II	Optimal merge patterns, Optimal Storage on tapes	C-15	Lecture
Unit-II	Minimum spanning trees	C-16	Lecture
Unit-II	Huffman Encoding	C-17	Lecture
Unit-II	Dynamic Programming, Use of table instead of recursion, All pair shortest Path	C-18	Lecture
Unit-II	Home Assignment 2		Take Home Assignments
Unit-II	Class Assignment 2	C-19	Class Room Assignment
Unit-II	Presentation 2	C-20	Presentation
Unit-II	0/1 knapsack	C-21	Lecture
Unit-II	Webinar	C-22	Webinar
Unit-II	Matrix Chain Multiplication	C-23	Lecture
Unit-II	Guest Lecture	C-24	Guest lecture
Unit-II	Home Assignment 3		Take Home Assignments
Unit-II	Optimal binary search tree	C-25	Lecture
Unit-II	Longest Common Subsequence	C-26	Lecture
Unit-II	Traveling salesperson problem	C-27	Lecture
Unit-II	Clarification Class	C-28	Clarification Class
	Quiz	C-29	Quiz
	Seminar	C-30	Seminar
	Activity	C-31	Activity

Unit-III	Search & Traversal, Backtracking		
Unit-III	Search techniques: breadth first search, depth first search, code optimization	C-32	Lecture
Unit-III	Presentation 3	C-33	Presentation
Unit-III	Insertion, Quick, Selection Sort	C-34	Lecture
Unit-III	Binary Search & Linear Search	C-35	Lecture
Unit-III	Backtracking: 8 queens' problem	C-36	Lecture
Unit-III	sum of subsets, graph coloring	C-37	Lecture
Unit-III	Classroom Assignment 3	C-38	Class Room Assignment
	Webinar	C-39	Webinar
	Clarification Class	C-40	Clarification Class
Unit-IV	Problem Clauses		
Unit-IV	P, NP, NP- Hard, NP-complete, Proving NP Complete Problems	C-41	Lecture
Unit-IV	Presentation 4	C-42	Presentation
Unit-IV	algorithm for NP complete problems- TSP	C-43	Lecture
Unit-IV	Classroom Assignment 4	C-44	Class Room Assignment
Unit-IV	Clarification Class	C-45	Clarification Class

CSEC14301– Analysis and Design of Algorithm Lab

S. No.	Particulars	Class No.	Pedagogy of Class
1	Introduction to Algorithms & Analysis Lab , Linear Search & Its Time Complexity Computation.	P-1,2	Practical
2	Binary Search & Its Time Complexity Computation.	P-3,4	Practical
3	Insertion Sort & Its Time Complexity Computation	P-5,6	Practical
4	BFS & DFS- Its Time Complexity Computation	P-7,8	Practical
5	Merge Sort & Its Time Complexity Computation	P-9,10	Practical
6	Activity/Webinar	P-11,12	Webinar
7	Quick Sort & Its Time Complexity Computation	P-13,14	Practical
8	Quick Sort & Its Time Complexity Computation	P-15,16	Practical
9	Selection Sort & Its Time Complexity Computation	P-17,18	Practical
10	Heap Sort & Its Time Complexity Computation	P-19,20	Practical
11	Heap Sort & Its Time Complexity Computation	P-21,22	Practical
12	LCS in two given sequence	P-23,24	Practical
13	LCS in two given sequence	P-25,26	Practical
14	Clarification Class	P-27,28	Clarification Class
15	Clarification Class	P-29,30	Clarification Class

CSEC14302– Database Management Systems with MySQL

Unit	Particulars	Class No.	Pedagogy of Class
Unit-I	Introduction		
Unit-I	Introduction Of DBMS	C-1	Lecture
Unit-I	Data, data processing requirement, desirable characteristics of an ideal data processing system,	C-2	Lecture
Unit-I	traditional file based system, its drawback, concept of data dependency, Def of database, database management system,	C-3	Lecture
Unit-I	traditional file based system, its drawback, concept of data dependency, Def of database, database management system,	C-4	Lecture
Unit-I	3-schema architecture, database terminology,	C-5	Lecture
Unit-I	3-schema architecture, database terminology,	C-6	Lecture
Unit-I	benefits of DBMS, Database development process - conceptual data modeling,	C-7	Lecture
Unit-I	logical database design,	C-8	Lecture
Unit-I	physical database design,	C-9	Lecture
Unit-I	database implementation, database maintenance.	C10	Lecture
Unit-I	Classroom Assignment 1	C-11	Classroom Assignment
Unit-I	Clarification Class 1	C-12	Clarification Class
	Presentation	C-13	Presentation
	Take Home Assignments 1		Take Home Assignments
Unit-II	Database Analysis		
Unit-II	Conceptual data modeling using E-R data model -entities, attributes,	C-14	Lecture
Unit-II	relationships, generalization, specialization, specifying constraints.	C-15	Lecture
Unit-II	practical problems based on E-R data model.	C-16	Lecture
Unit-II	Activity	C-17	Activity
Unit-II	Database Design: Logical database design and relational data model	C-18	Lecture
Unit-II	Introduction to relational database theory: def of relation, relational model operators,	C-19	Lecture
Unit-II	relational model integrity rules, Normalization- 1NF, 2NF, 3NF, 4NF, BCNF & practical problems based on these forms. Denormalization	C-20	Lecture
Unit-II	Classroom Assignment 2	C-21	Classroom Assignment
Unit-II	Clarification Class 2	C-22	Clarification Class
Unit-II	Presentation 2	C-23	Presentation
	Take Home Assignments 2		Take Home

			Assignments
Unit-III	Database Implementation		
Unit-III	Database Implementation: Introduction to SQL	C-24	Lecture
Unit-III	DDL aspect of SQL, DML aspect of SQL – update,	C-25	Lecture
Unit-III	insert, delete & various form of SELECT-simple, using special operators,	C-26	Lecture
Unit-III	aggregate functions, group by clause, sub query,	C-27	Lecture
Unit-III	joins, co-related sub query, union clause, exist operator,	C-28	Lecture
Unit-III	Constrains, PL/SQL - cursor, stored function, stored procedure, triggers,	C-29	Lecture
Unit-III	Webinar 1	C-30	Webinar
Unit-III	Guest Lecture	C-31	Guest lecture
Unit-III	Classroom Assignment 3	C-32	Classroom Assignment
Unit-III	Clarification Class 3	C-33	Clarification Class
Unit-III	Presentation 3	C-34	Presentation
	Take Home Assignments 3		Take Home Assignments
Unit-IV	Transaction processing		
Unit-IV	Transaction processing - introduction, concurrency control techniques, database recovery,	C-35	Lecture
Unit-IV	Seminar	C-36	Seminar
Unit-IV	Overview of client-server database environment,	C-37	Lecture
Unit-IV	distributed databases, Object-relational database, object-oriented database,	C-38	Lecture
Unit-IV	Webinar 2	C-39	Webinar
Unit-IV	web technology and database,	C-40	Lecture
Unit-IV	Guest lecture	C-41	Guest lecture
Unit-IV	Comparative study of various DBMS products.	C-42	Lecture
Unit-IV	Classroom Assignment 4	C-43	Classroom Assignment
Unit-IV	Clarification Class 4	C-44	Clarification Class
Unit-IV	Presentation 4	C-45	Presentation

CSEC14303– Database Management Systems with MySQL Lab

S. No.	Particulars	Class No.	Pedagogy of Class
1	Installation of database, Introduction of SQL server Management studio	P-1,2	Practical
2	Create Database, Drop Database, Create Table, Insertion of data	P-3,4	Practical
3	Working with Select Statement, Insert, Delete and Update	P-5,6	Practical
4	Order By, Group By, Like Operations	P-7,8	Practical
5	MIN, MAX, AVG, COUNT	P-9,10	Practical
6	All Join operations	P-11,12	Practical
7	Working with Sub Queries	P-13,14	Practical
8	Creating Views, Creating Column Aliases Query - views	P-15,16	Practical
9	Seminar	P-17,18	Seminar
10	DML DDL COMMAND	P-19,20	Practical
11	Query related to create table, SQL Constraints	P-21,22	Practical
12	Query related to Insert, Select, update, drop table or database and Alter	P-23,24	Practical
13	Activity	P-25,26	Activity
14	Quiz ,	P-27,28	Quiz
15	Activity	P-29,30	Activity

CSEC14304– Computer Graphics

Unit	Particulars	Class No.	Pedagogy of Class
Unit-I	Introduction		
Unit-I	Introduction of Computer Graphics, The advantages of Interactive Graphics, Representative Uses of Computer Graphics	C-1	Lecture
Unit-I	Classification of Application Development of Hardware and Software for Computer Graphics, Conceptual Framework for Interactive Graphics	C-2	Lecture
Unit-I	Algorithm for Horizontal, Vertical & Diagonal Line Drawing	C-3	Lecture
Unit-I	Direct Method for Line Drawing	C-4	Lecture
Unit-I	DDA Algorithm for Line Drawing	C-5	Lecture
Unit-I	Bresenham's Line Drawing Algorithm	C-6	Lecture
Unit-I	Algorithms for drawing circle	C-7	Lecture
Unit-I	Algorithms for drawing ellipse	C-8	Lecture
Unit-I	Clarification Class	C-9	Clarification Class
	Presentation	C-10	Presentation
	Class Room Assignment	C-11	Class Room Assignment
	Guest lecture	C-12	Guest lecture
Unit-II	Hardcopy		
Unit-II	Display Technologies: Raster Scan Display & Random Scan Display	C-13	Lecture
Unit-II	Video Controller, Input Device for Operator Interaction, Image Scanners	C-14	Lecture
Unit-II	Working Exposure on graphic tools: Dream Weaver	C-15	Lecture
Unit-II	Dream Weaver	C-16	Lecture
Unit-II	Dream Weaver	C-17	Lecture
Unit-II	Clipping Algorithm: Southland-Cohen Algorithm	C-18	Lecture
Unit-II	Cyrus-Beck-Algorithm	C-19	Lecture
Unit-II	Midpoint Subdivision Algorithm	C-20	Lecture
Unit-II	Presentation	C-21	Presentation
Unit-II	Clarification Class	C-22	Clarification Class
	Class Room Assignment	C-23	Class Room Assignment
	Webinar	C-24	Webinar
	Take Home Assignment		Take Home Assignments
Unit-III	Geometrical Transformation		
Unit-III	2D Transformation: Homogeneous Coordinates	C-25	Lecture
Unit-III	Matrix Representation of 2D	C-26	Lecture
Unit-III	2D Transformation	C-27	Lecture
Unit-III	Composition of 2D Transformation	C-28	Lecture
Unit-III	Window-to-Viewport Transformation	C-29	Lecture
Unit-III	Introduction to 3D Transformation Matrix	C-30	Lecture

Unit-III	3D Transformation Matrix	C-31	Lecture
Unit-III	Presentation	C-32	Presentation
Unit-III	Clarification Class	C-33	Clarification Class
	Class Room Assignment	C-34	Class Room Assignment
	Guest lecture	C-35	Guest lecture
	Take Home Assignment		Take Home Assignments
Unit-IV	Introductory Concepts		
Unit-IV	Multimedia Definition, CD-ROM and the multimedia highway	C-36	Lecture
Unit-IV	Computer Animation (Design, types of animation), Different Functions of Animations, Uses of Multimedia	C-37	Lecture
Unit-IV	Introduction to making multimedia: The stage of Project, Hardware & Software Requirements to make good multimedia	C-38	Lecture
Unit-IV	Skills and Training opportunity in Multimedia Motivation for Multimedia usage	C-39	Lecture
Unit-IV	Presentation	C-40	Presentation
Unit-IV	Clarification Class	C-41	Clarification Class
Unit-IV	Class Room Assignment	C-42	Class Room Assignment
	Webinar	C-43	Webinar
	Quiz	C-44	Quiz
	Seminar	C-45	Seminar
	Take Home Assignment		Take Home Assignments

CSEC14305– Computer Graphics Lab

S. No.	Particulars	Class No.	Pedagogy of Class
1	Basic Graphics Function	P-1,2	Practical
2	Wap to Draw a Line Using Mid-Point Algorithm or Bresenham's Algorithm	P-3,4	Practical
3	Wap to Draw a Line Using DDA Algorithm	P-5,6	Practical
4	Wap to Draw a Circle Using Bresenham's Algorithm	P-7,8	Practical
5	Wap to Draw an Ellipse Using Mid-Point Ellipse Drawing Algorithm	P-9,10	Practical
6	Wap to Show Line Clipping	P-11,12	Practical
7	Wap to Rotate a Triangle about Origin, Program to Scale the Triangle Program to Translate a Triangle	P-13,14	Practical
8	Program to Rotate a Point about a Point	P-15,16	Practical
9	Program to Rotate a Point about Origin	P-17,18	Practical
10	Program to Reflect a Triangle	P-19,20	Practical
11	Program to Draw a Hut Using Simple Graphic Functions	P-21,22	Practical
12	Program to Fill a Polygon	P-23,24	Practical
13	Presentation	P-25,26	Presentation
14	Clarification Class	P-27,28	Clarification Class
15	Quiz	P-29,30	Quiz

CSEC14306– Core Java

Unit	Particulars	Class No.	Pedagogy of Class
Unit-I	Object oriented programming, characteristics of object orientated languages, classes,	C-1	Lecture
Unit-I	Java Programming: Introduction, Data types, access specifiers	C-2	Lecture
Unit-I	operators, control statements, arrays	C-3	Lecture
Unit-I	Classes: Fundamentals, objects, methods, constructors	C-4	Lecture
Unit-I	Inheritance: Super class, sub class	C-5	Lecture
Unit-I	this and super operator, method overriding	C-6	Lecture
Unit-I	use of final, packages, abstract class, interface	C-7	Lecture
Unit-I	Polymorphism: Method overloading, constructor overloading	C-8	Lecture
Unit-I	Clarification Class - 1	C-9	Clarification Class
Unit-I	Take Home Assignments-1		Take Home Assignments
Unit-I	Class Room Assignment-1	C-10	Class Room Assignment
	Presentation-1	C-11	Presentation
Unit-II	Exception Class, built in checked and unchecked exceptions, user defined exceptions	C-12	Lecture
Unit-II	use of try, catch, throw, throws, finally	C-13	Lecture
Unit-II	Overview, comparison with multiprocessing, Thread class and runnable interface	C-14	Lecture
Unit-II	life cycle, creation of single and multiple threads	C-15	Lecture
Unit-II	thread priorities, overview of Synchronization	C-16	Lecture
Unit-II	String handling (only main functions), String Buffer class	C-17	Lecture
Unit-II	byte and character streams, System.in and System. out, print and println	C-18	Lecture
Unit-II	reading from a file and writing in a file	C-19	Lecture
Unit-II	Clarification Class-2	C-20	Clarification Class
Unit-II	Home Assignment-2		Take Home Assignments
Unit-II	Class Room Assignment-2	C-21	Class Room Assignment
	Presentation-2	C-22	Presentation
	Guest Lecture	C-23	Guest lecture
	Workshop	C-24	Workshop
	Quiz	C-25	Quiz
Unit-III	Introduction, Life cycle, creation and implementation	C-26	Lecture
Unit-III	AWT controls: Button, Label, Text Field, Text Area,	C-27	Lecture
Unit-III	Choice lists, list, scrollbars, check boxes	C-28	Lecture
Unit-III	Layout managers	C-29	Lecture
Unit-III	Delegation Event Model, Event classes and listeners	C-30	Lecture
Unit-III	Adapter classes, Inner classes	C-31	Lecture
Unit-III	Introduction and comparison with AWT controls	C-32	Lecture

Unit-III	Clarification Class-3	C-33	Clarification Class
Unit-III	Home Assignment-3		Take Home Assignments
Unit-III	Class Room Assignment-3	C-34	Class Room Assignment
	Presentation-3	C-35	Presentation
	Activity - Mind Mapping	C-36	Activity
Unit-IV	Socket (datagram and TCP/IP based client and server socket)	C-37	Lecture
Unit-IV	factory methods, Inet Address	C-38	Lecture
Unit-IV	JDBC Architecture, JDBC Drivers	C-39	Lecture
Unit-IV	Class Room Assignment-4	C-40	Class Room Assignment
Unit-IV	Presentation-4	C-41	Presentation
Unit-IV	Life cycle, Interfaces	C-42	Lecture
Unit-IV	classes in javax. servlet package , Connecting Database	C-43	Lecture
Unit-IV	Creating a simple servlet	C-44	Lecture
	Clarification Class-3	C-45	Clarification Class

CSEC14307– Core Java Lab

S. No.	Particulars	Class No.	Pedagogy of Class
1	Write a program to display "Hello World" in 'JAVA' language.	P-1,2	Practical
2	Implementation of input and output statements	P-3,4	Practical
3	Implementation of control statements.	P-5,6	Practical
4	Implementation of functions.	P-7,8	Practical
5	Implementation of single dimension, two dimension array	P-9,10	Practical
6	Write a JAVA program that uses a recursive function for solving Towers of Hanoiproblem.	P-11,12	Practical
7	Activity-Mind Mapping	P-13,14	Activity
8	Write a JAVA program to implement the matrix ADT using a class. The operations supported by this ADT are: a) Reading a matrix. b) Addition of matrices. c) Printing a matrix. d) Subtraction of matrices. e) Multiplication of matrices.	P-15,16	Practical
9	Write a JAVA program that overloads the + operator and relational operators (suitable)to perform the following operations: a) Concatenation of two strings. b) Comparison of two strings.	P-17,18	Practical
10	Write JAVA programs that illustrate how the following forms of inheritance are supported: a) Single inheritance b) Multiple inheritances c) Multi inheritance d) Hierarchical inheritance	P-19,20	Practical
11	Clarification Class	P-21,22	Clarification Class
12	Test	P-23,24	Test
13	Write a JAVA program that illustrates the order of execution of constructors and destructors when new class is derived from more than one base class.	P-25,26	Practical
14	Additional java Program for desktop application	P-27,28	Practical
15	Additional java Program for desktop application	P-29,30	Practical

CSEC14308– PHP & My SQL

Unit	Particulars	Class No.	Pedagogy of Class
Unit-I	Introduction to PHP: What is PHP How PHP better than other Benefits of Using PHP MYSQL Server Client Environment	C-1	Lecture
Unit-I	Web Browse Web Server Installation & Configuration Files.	C-2	Lecture
Unit-I	Development Concept: How PHP Script Work PHP Syntax Write your First PHP Program Embed PHP In HTML/HTML In PHP	C-3	Lecture
Unit-I	PHP Data Type Variable In PHP Contents In PHP Operator In PHP	C-4	Lecture
Unit-I	PHP Data Type Variable In PHP Contents In PHP Operator In PHP	C-5	Lecture
Unit-I	Control Structure, Looping, Switch Statement	C-6	Lecture
Unit-I	Function: User-defined, Pre-defined, Array: Indexed, Associative, Multidimensional	C-7	Lecture
Unit-I	Date Time, Mail Function, Hash functions, Include(), Required(), Super-Global Variables, isset(), isempty() functions	C-8	Lecture
Unit-I	Clarification Class	C-9	Clarification Class
	Class Room Assignment	C-10	Class Room Assignment
	Presentation	C-11	Presentation
Unit -II	Array: What is Array Syntax Associative Array Numeric Array Multi-Dimensional Array	C-12	Lecture
Unit -II	String Function Chr() strlen() strpos() strcmp()	C-13	Lecture
Unit -II	Working with File Opening File Reading File Writing File Closing File, Appending File Uploading File	C-14	Lecture
Unit -II	OOPs Concept Class & Object Access Modifier Properties of Object Encapsulation and abstraction	C-15	Lecture
Unit -II	Inheritance Polymorphism, Function overriding Abstract class	C-16	Lecture
Unit -II	State Management Creating Cookies Set Cookies Destroying Cookies Creating Session Set Session Destroying Session	C-17	Lecture
Unit -II	Error Handling & Exception Introduction to Error Try, catch, throw Block Handling	C-18	Lecture
Unit -II	Clarification Class	C-19	Clarification Class
	Class Room Assignment	C-20	Class Room Assignment
	Presentation	C-21	Presentation
	Quiz	C-22	Quiz
	Webinar	C-23	Webinar
	Guest lecture	C-24	Guest lecture
	Take Home Assignments		Take Home Assignments

Unit -III	Introduction to MYSQL What is Database? Understanding an RDBMS Understanding Tables, Record & Fields SQL Language	C-25	Lecture
Unit -III	Working with MYSQL Admin Working with PHP My Admin Types Data Type	C-26	Lecture
Unit -III	Creating Database & Tables Dropping	C-27	Lecture
Unit -III	Database & Tables Adding Fields Selecting Table Alerting Fields Properties	C-28	Lecture
Unit -III	MySQL Function in PHP Database	C-29	Lecture
Unit -III	Connections Managing Database	C-30	Lecture
Unit -III	Connections Performing Queries Closing Connection	C-31	Lecture
	Clarification Class	C-32	Clarification Class
	Class Room Assignment	C-33	Class Assignment
	Presentation	C-34	Presentation
	Take Home Assignments		Take Home Assignments
Unit -IV	SQL Queries Create Database & Table Drop Database & Table Insert Record Select Record Deleting Record Modifying Record WHERE Clause Using Operators Sorting Records Eliminating Duplicates Grouping Records, Having Clause Joining Tables Sub queries Using Table And Column Aliases	C-35	Lecture
Unit -IV	SQL Queries Create Database & Table Drop Database & Table Insert Record Select Record Deleting Record Modifying Record WHERE Clause Using Operators Sorting Records Eliminating Duplicates Grouping Records, Having Clause Joining Tables Sub queries Using Table And Column Aliases	C-36	Lecture
Unit -IV	SQL Queries Create Database & Table Drop Database & Table Insert Record Select Record Deleting Record Modifying Record WHERE Clause Using Operators Sorting Records Eliminating Duplicates Grouping Records, Having Clause Joining Tables Sub queries Using Table And Column Aliases	C-37	Lecture
Unit -IV	SQL Queries Create Database & Table Drop Database & Table Insert Record Select Record Deleting Record Modifying Record	C-38	Lecture
Unit -IV	WHERE Clause Using Operators Sorting Records Eliminating Duplicates Grouping Records, Having Clause Joining Tables Sub queries Using Table And Column Aliases	C-39	Lecture
Unit -IV	Clarification Class	C-40	Clarification Class
Unit -IV	Classroom Assignment	C-41	Class Assignment
Unit -IV	Presentation	C-42	Presentation
	Webinar	C-43	Webinar
	Seminar	C-44	Seminar
	Guest lecture	C-45	Guest lecture
	Take Home Assignments		Take Home Assignments

CSEC14309– PHP & My SQL Lab

S. No.	Particulars	Class No.	Pedagogy of Class
1	1. Create a php webpage and print "hello world". 2. Create a php program to find odd or even number from given number.	P-1,2	Practical
2	3. Write a php program to find maximum among three numbers 4. Write a PHP program to swap two numbers.	P-3,4	Practical
3	5. Write a PHP Program to demonstrate the variable function: a. Gettype() b. Settype() 6. Write a PHP Program to demonstrate the variable Function a. isset() b. unset()	P-5,6	Practical
4	7. Give the example of variable function: a. strval() b. floatval() c. intval() d. print_r() e. var_dump() 8. Give the example of string function a. substr() b. substr() c. strcmp() d. strcasecmp() e. strpos() f. strpos()	P-7,8	Practical
5	9. Write a PHP program that demonstrate form element(input elements). 10. Write a PHP program that demonstrate passing variable using URL. i. Write a PHP program that demonstrate use of session:1 ii. Write a PHP program that demonstrate use of session:2	P-9,10	Practical
6	11. Write a program that demonstrate use of cookies: 1 Write a program that demonstrate use of cookies: 2 12. Write a PHP program to create a database using MySQL	P-11,12	Practical
7	13. Write a PHP program to drop a database using MySQL. 14. Write a PHP program to create a table in MySQL.	P-13,14	Practical
8	15. Write a PHP program to insert record into a table using MySQL. 16. Write a PHP program to drop table using MySQL.	P-15,16	Practical

9	17. Write a program to update table	P-17,18	Practical
10	18. Write a PHP program to select data and show into table format	P-19,20	Practical
11	19. Create a student Registration in PHP and Save and Display the student Records.	P-21,22	Practical
12	20. Write a program to Develop student registration form and display all the submitted data on another page.	P-23,24	Practical
13	Presentation	P-25,26	Presentation
14	Clarification Class	P-27,28	Clarification Class
15	Quiz	P-29,30	Quiz

SEC077005– Ability and Skill Enhancement -V

Unit	Particulars	Class No.	Pedagogy of Class
Unit-I	What is leadership? Traits of Leadership, Identifying leaders and traits of Leadership	C-1	Lecture
Unit-I	What is leadership? Traits of Leadership, Identifying leaders and traits of Leadership	C-2	Activity
Unit-I	Movie/ Story/ Interviews of leaders: Identify leadership qualities	C-3	Activity
Unit-I	Leadership: Debate/ Screening of a debate	C-4	Activity
Unit-I	Leadership: Debate	C-5	Activity
Unit-I	Leadership: Group Discussion	C-6	Group discussions
Unit-I	Leadership: Presentations on leaders	C-7	Group discussions
Unit-I	Leadership: Presentations on leaders	C-8	Presentation
Unit-I	Clarification Class I	C-9	Clarification Class
Unit-II	What is Entrepreneurship, Traits of Successful Entrepreneurs	C-10	Lecture
Unit-II	Movie/ Story/Interviews of Entrepreneurs: Identify Entrepreneurial qualities,	C-11	Activity
Unit-II	Entrepreneurs: Group Discussion	C-12	Activity
Unit-II	Entrepreneurs: Debate	C-13	Debate
Unit-II	Presentation on Entrepreneurs	C-14	Presentation
Unit-II	Presentation on Entrepreneurs	C-15	Presentation
	Take Home Assignments I		Home Assignments
Unit-III	What are organizational skills, how to develop them,	C-16	Webinar
Unit-III	Skills needed to become a successful entrepreneur/administrator	C-17	Quiz
Unit-III	Organizational skills can be developed by discipline making a system, rules, delegation of power at workplace, etc	C-18	Presentation
Unit-III	Employability Skills: How to enhance employability skills	C-19	Guest lecture
Unit-III	Employability Skills: why do we need them	C-20	Presentation
Unit-III	Classroom Assignment-1	C-21	Class Assignment
Unit-III	Employability Skills: different workplaces, having different needs, different skills	C-22	Activity
Unit-III	how to recognize different work skills	C-23	Class Assignment
Unit-III	Process of decision making- steps, its basics, and the basics of organizational decision-making process	C-24	Activity
Unit-III	entrepreneurial decision making, how to make a right decision at right time, dilemma.	C-25	Activity
Unit-IV	Clarification Class II	C-26	Clarification Class
Unit-IV	Conducting Interviews with Leaders/ Entrepreneurs	C-27	Class Assignment
Unit-IV	Take Home Assignments II		Home Assignments
Unit-IV	Preparing Questions	C-28	Class Assignment
Unit-IV	Preparing Questions	C-29	quiz
Unit-IV	Clarification Class III	C-30	Clarification Class

CSEE14032– Deep Learning

Unit	Particulars	Class No.	Pedagogy of Class
Unit-I	Artificial Neural Networks		
Unit-I	The Neuron-Expressing Linear Perceptrons as Neurons-Feed-Forward Neural Networks	C-1	Lecture
Unit-I	Linear Neurons and Their Limitations –Sigmoid – Tanh – and ReLU Neurons	C-2	Lecture
Unit-I	Linear Neurons and Their Limitations –Sigmoid – Tanh – and ReLU Neurons	C-3	Lecture
Unit-I	Softmax Output Layers – Training Feed	C-4	Lecture
Unit-I	Take Home Assignments		Take Home Assignments
Unit-I	Forward Neural Networks-Gradient Descent-Delta Rule and Learning Rates	C-5	Lecture
Unit-I	Forward Neural Networks-Gradient Descent-Delta Rule and Learning Rates	C-6	Lecture
Unit-I	Gradient Descent with Sigmoidal Neurons	C-7	Lecture
Unit-I	The Backpropagation Algorithm-Stochastic and Minibatch Gradient Descent	C-8	Lecture
Unit-I	Class Room Assignment No. 1	C-9	Class Room Assignment
Unit-I	The Backpropagation Algorithm-Stochastic and Minibatch Gradient Descent	C-10	Lecture
Unit-I	Test Sets – Validation Sets – and Overfitting	C-11	Lecture
Unit-I	Preventing Overfitting in Deep Neural Networks – Implementing Neural Networks in TensorFlow.	C-12	Lecture
Unit-I	Home Assignment No. 2		Take Home Assignments
Unit-I	Clarification Class - 1	C-13	Clarification Class
Unit-II	Local Minima in the Error Surfaces of Deep Networks		
Unit-II	Local Minima in the Error Surfaces of Deep Networks	C-14	Lecture
Unit-II	Class Room Assignment No.	C-15	Class Room Assignment
Unit-II	Model Identifiability	C-16	Lecture
Unit-II	Spurious Local Minima in Deep Networks	C-17	Lecture
Unit-II	Flat Regions in the Error Surface – Momentum-Based Optimization	C-18	Lecture
Unit-II	Home Assignment - 3		Take Home Assignments
Unit-II	Presentation No-1	C-19	Presentation
Unit-II	Clarification Class - 2	C-20	Clarification Class
Unit-II	Learning Rate Adaptation	C-21	Lecture
Unit-III	Convolutional Neural Networks(CNN)		
Unit-III	Architecture	C-22	Lecture

Unit-III	Class Room Assignment No. 3	C-23	Class Room Assignment
Unit-III	Architecture	C-24	Lecture
Unit-III	Accelerating Training with Batch Normalization	C-25	Lecture
Unit-III	Presentation No. 2	C-26	Presentation
Unit-III	Building a Convolutional Network using TensorFlow	C-27	Lecture
Unit-III	Building a Convolutional Network using TensorFlow	C-28	Lecture
Unit-III	Seminar	C-29	Seminar
Unit-III	Class Room Assignment No. 4	C-30	Class Room Assignment
Unit-III	Visualizing Learning in Convolutional Networks	C-31	Lecture
Unit-III	Embedding and Representation Learning	C-32	Lecture
Unit-III	Guest Lecture-I	C-33	Guest lecture
Unit-III	Presentation No. 3	C-34	Presentation
Unit-III	Clarification Class - 3	C-35	Clarification Class
Unit-III	Autoencoder Architecture		
Unit-III	Implementing an Autoencoder in TensorFlow	C-36	Lecture
Unit-III	DenoisingSparsity in Autoencoders Models for Sequence Analysis	C-37	Lecture
Unit-III	Webinar	C-38	Webinar
Unit-III	Presentation No. 4	C-39	Presentation
Unit-III	Recurrent Neural Networks- Vanishing GradientsLong Short-Term Memory (LSTM) Units	C-40	Lecture
Unit-III	TensorFlow Primitives for RNN Models	C-41	Lecture
Unit-III	Guest Lecture-II	C-42	Guest lecture
Unit-III	Clarification Class 4	C-43	Clarification Class
Unit-III	Augmenting Recurrent Networks with Attention.	C-44	Lecture
	Webinar-2	C-45	Webinar

CSEE14033– Deep Learning Lab

S. No.	Particulars	Class No.	Pedagogy of Class
1.	Build a deep neural network model start with linear regression using a single variable.	P-1,2	Practical
2.	Build a deep neural network model start with linear regression using multiple variables.	P-3,4	Practical
3.	Write a program to convert speech into text.	P-5,6	Practical
4.	Write a program to convert text into speech.	P-7,8	Practical
5.	Write a program to convert video into frames.	P-9,10	Practical
6.	Write a program to convert video into frames.	P-11,12	Practical
7.	Write a program for Time-Series Forecasting with the LSTM Model.	P-13,14	Practical
8.	Write a program for Time-Series Forecasting with the LSTM Model.	P-15,16	Practical
9.	Build a feed forward neural network for prediction of logic gates.	P-17,18	Practical
10.	Build a feed forward neural network for prediction of logic gates.	P-19,20	Practical
11.	Write a program to implement deep learning Techniques for image segmentation.	P-21,22	Practical
12.	Write a program to implement deep learning Techniques for image segmentation.	P-23,24	Practical
13.	Write a program for object detection using image labeling tools.	P-25,26	Practical
14.	Practice Class	P-27,28	Clarification Class
15.	Practice Class	P-29,30	Clarification Class

CSEE14002– LAMP Technologies

Unit	Particulars	Class No.	Pedagogy of Class
Unit-I	Introduction to LAMP Stack		
Unit-I	Overview of Linux	C-1	Lecture
Unit-I	Overview of Linux	C-2	Lecture
Unit-I	Apache	C-3	Lecture
Unit-I	Apache	C-4	Lecture
Unit-I	Home Assignment No. 1		Take Home Assignments
Unit-I	MySQL, and PHP	C-5	Lecture
Unit-I	Role of LAMP in web development	C-6	Lecture
Unit-I	Setting up a LAMP environment,Basics of Linux commands and directory structure	C-7	Lecture
Unit-I	Setting up a LAMP environment,Basics of Linux commands and directory structure	C-8	Lecture
Unit-I	Introduction to server-client architecture,Installing and configuring the LAMP stack on a local machine	C-9	Class Room Assignment
Unit-I	Introduction to server-client architecture,Installing and configuring the LAMP stack on a local machine	C-10	Lecture
Unit-I	Basic Linux file and permission management	C-11	Lecture
Unit-I	Basic Linux file and permission management	C-12	Lecture
Unit-I	Home Assignment No. 2		Take Home Assignments
Unit-I	Clarification Class - 1	C-13	Clarification Class
Unit-II	Apache Web Server		
Unit-II	Installation and configuration of Apache,Managing virtual hosts	C-14	Lecture
Unit-II	Class Room Assignment No.	C-15	Class Room Assignment
Unit-II	URL rewriting and redirection with .htaccess	C-16	Lecture
Unit-II	Log management and debugging Apache errors	C-17	Lecture
Unit-II	Hosting a sample static website using Apache	C-18	Lecture
Unit-II	Home Assignment - 3		Take Home Assignments
Unit-II	Presentation No-1	C-19	Presentation
Unit-II	Clarification Class - 2	C-20	Clarification Class
Unit-II	Configuring custom domain names locally using virtual hosts	C-21	Lecture
Unit-III	MySQL Database Management		
Unit-III	Relational database basics,Installation and configuration of MySQL,Writing basic SQL queries (SELECT, INSERT, UPDATE, DELETE)	C-22	Lecture
Unit-III	Class Room Assignment No. 3	C-23	Class Room Assignment
Unit-III	Relational database basics,Installation and	C-24	Lecture

	configuration of MySQL,Writing basic SQL queries (SELECT, INSERT, UPDATE, DELETE)		
Unit-III	Database normalization and indexing	C-25	Lecture
Unit-III	Backup and restoration of databases	C-26	Presentation
Unit-III	Creating and managing a sample MySQL database Writing queries for CRUD operations	C-27	Lecture
Unit-IV	PHP Programming: Basics of PHP scripting	C-28	Lecture
Unit-IV	PHP Programming: Basics of PHP scripting	C-29	Seminar
Unit-IV	Class Room Assignment No. 4	C-30	Class Room Assignment
Unit-IV	Variables, arrays	C-31	Lecture
Unit-IV	Variables, arrays	C-32	Lecture
Unit-IV	Guest Lecture-I	C-33	Guest lecture
Unit-IV	Presentation No. 3	C-34	Presentation
Unit-IV	Clarification Class - 3	C-35	Clarification Class
Unit-IV	loops in PHP Form handling and validation	C-36	Lecture
Unit-IV	Session and cookie management	C-37	Lecture
Unit-IV	Webinar	C-38	Webinar
Unit-IV	Presentation No. 4	C-39	Presentation
Unit-IV	Session and cookie management	C-40	Lecture
Unit-IV	PHP-MySQL integration Error handling in PHP	C-41	Lecture
	Guest Lecture-II	C-42	Guest lecture
Unit-V	Clarification Class 4	C-43	Clarification Class
Unit-V	Security and Optimization	C-44	Lecture
	Webinar-2	C-45	Webinar
Unit-V	Securing a LAMP application	C-46	Lecture
Unit-V	Input validation and sanitization	C-47	Lecture
Unit-V	Input validation and sanitization	C-48	Lecture
Unit-V	Preventing SQL injection and XSS attacks	C-49	Lecture
Unit-V	Preventing SQL injection and XSS attacks	C-50	Lecture
Unit-V	Preventing SQL injection and XSS attacks	C-51	Lecture
Unit-V	HTTPS and SSL certificates Performance tuning for Apache and MySQL	C-52	Lecture
Unit-V	HTTPS and SSL certificates Performance tuning for Apache and MySQL	C-53	Lecture
Unit-V	PHP performance tips and best practice	C-54	Lecture
Unit-V	PHP performance tips and best practice	C-55	Lecture
Unit-V	PHP performance tips and best practice	C-56	Lecture
Unit-V	PHP performance tips and best practice	C-57	Lecture
Unit-V	PHP performance tips and best practice	C-58	Lecture
Unit-V	PHP performance tips and best practice	C-59	Lecture
Unit-V	Clarification Class - 3	C-60	Clarification Class

CSEE14003– Embedded Systems

Unit	Particulars	Class No.	Pedagogy of Class
Unit-I	Embedded Systems Basics		
Unit-I	Introduction to Embedded systems	C-1	Lecture
Unit-I	Examples of embedded systems	C-2	Lecture
Unit-I	Typical Hardware	C-3	Lecture
Unit-I	Timing Diagrams	C-4	Lecture
Unit-I	Home Assignment No. 1		Take Home Assignments
Unit-I	Memory, Microprocessors	C-5	Lecture
Unit-I	Buses, DirectMemoryAccess	C-6	Lecture
Unit-I	Interrupts	C-7	Lecture
Unit-I	Interrupts	C-8	Lecture
Unit-I	Class Room Assignment No. 1	C-9	Class Room Assignment
Unit-I	Microprocessor Architecture	C-10	Lecture
Unit-I	Interrupt Basics	C-11	Lecture
Unit-I	Interrupt Basics	C-12	Lecture
Unit-I	Home Assignment No. 2		Take Home Assignments
Unit-I	Clarification Class - 1	C-13	Clarification Class
Unit-II	The 8051 Architecture-Introduction		
Unit-II	The 8051 Architecture-Introduction	C-14	Lecture
Unit-II	Class Room Assignment No.	C-15	Class Room Assignment
Unit-II	8051 Micro controller Hardware	C-16	Lecture
Unit-II	Input/output Pin Ports and Circuits	C-17	Lecture
Unit-II	External Memory	C-18	Lecture
Unit-II	Home Assignment - 3		Take Home Assignments
Unit-II	Presentation No-1	C-19	Presentation
Unit-II	Clarification Class - 2	C-20	Clarification Class
Unit-II	Serial data Input/output, Interrupts	C-21	Lecture
Unit-III	Basic Assembly Language Programming Concepts		
Unit-III	The Assembly Language Programming Process	C-22	Lecture
Unit-III	Class Room Assignment No. 3	C-23	Class Room Assignment
Unit-III	The Assembly Language Programming Process	C-24	Lecture
Unit-III	Programming Tools and Techniques	C-25	Lecture
Unit-III	Programming Tools and Techniques	C-26	Presentation
Unit-III	Programming the 8051	C-27	Lecture
Unit-III	Programming the 8051	C-28	Lecture
Unit-III	Seminar	C-29	Seminar
Unit-III	Class Room Assignment No. 4	C-30	Class Room Assignment
Unit-III	Programming the 8051	C-31	Lecture

Unit-III	Programming the 8051	C-32	Lecture
Unit-III	Guest Lecture-I	C-33	Guest lecture
Unit-III	Presentation No. 3	C-34	Presentation
Unit-III	Clarification Class - 3	C-35	Clarification Class
Unit-IV	Moving Data		
Unit-IV	Introduction, Addressing Modes, External Data Moves, Code Memory ReadOnly Data Moves	C-36	Lecture
Unit-IV	Push and Pop Opcodes, Data Exchanges	C-37	Lecture
Unit-IV	Webinar	C-38	Webinar
Unit-IV	Presentation No. 4	C-39	Presentation
Unit-IV	Basic Design Using a Real-Time Operating System: Message Queues, Mailboxes and Pipes	C-40	Lecture
Unit-IV	Timer Functions, Events, Memory Management, Interrupt Routines in an RTOS Environment	C-41	Lecture
Unit-IV	Guest Lecture-II	C-42	Guest lecture
Unit-IV	Clarification Class 4	C-43	Clarification Class
Unit-IV	Timer Functions, Events, Memory Management, Interrupt Routines in an RTOS Environment	C-44	Lecture
	Webinar-2	C-45	Webinar
Unit-V	Applications: Introduction, keyboards, Human Factor, Key Switch Factors	C-46	Lecture
Unit-V	Keyboard Configurations, Displays, Seven-Segment Numeric Display, D/A and A/D Conversions	C-47	Lecture
Unit-V	Keyboard Configurations, Displays, Seven-Segment Numeric Display, D/A and A/D Conversions	C-48	Lecture
Unit-V	Embedded Software Development Tools: Host and Target machines, Linker/Locators for Embedded Software	C-49	Lecture
Unit-V	Embedded Software Development Tools: Host and Target machines, Linker/Locators for Embedded Software	C-50	Lecture
Unit-V	Embedded Software Development Tools: Host and Target machines, Linker/Locators for Embedded Software	C-51	Lecture
Unit-V	Getting Embedded Software into the Target System	C-52	Lecture
Unit-V	Getting Embedded Software into the Target System	C-53	Lecture
Unit-V	Debugging Techniques: Testing on Host Machine	C-54	Lecture
Unit-V	Debugging Techniques: Testing on Host Machine	C-55	Lecture
Unit-V	Debugging Techniques: Testing on Host Machine	C-56	Lecture
Unit-V	Using Laboratory Tools, An Example System	C-57	Lecture
Unit-V	Using Laboratory Tools, An Example System	C-58	Lecture
Unit-V	Using Laboratory Tools, An Example System	C-59	Lecture
Unit-V	Clarification Class - 5	C-60	Clarification Class

CSEE14004– Mobile Application Programming

Unit	Particulars	Class No.	Pedagogy of Class
Unit-I	Introduction to Android Operating System		
Unit-I	Android OS and Features – Android development framework; Installing and running applications on Android Studio	C-1	Lecture
Unit-I	Android OS and Features – Android development framework; Installing and running applications on Android Studio	C-2	Lecture
Unit-I	Creating AVDs	C-3	Lecture
Unit-I	Types of Android application	C-4	Lecture
Unit-I	Home Assignment No. 1		Take Home Assignments
Unit-I	Types of Android application	C-5	Lecture
Unit-I	Types of Android application	C-6	Lecture
Unit-I	Creating Activities	C-7	Lecture
Unit-I	Creating Activities	C-8	Lecture
Unit-I	Activity Life Cycle, Activity states, monitoring state changes	C-9	Class Room Assignment
Unit-I	Activity Life Cycle, Activity states, monitoring state changes	C-10	Lecture
Unit-I	Activity Life Cycle, Activity states, monitoring state changes	C-11	Lecture
Unit-I	Activity Life Cycle, Activity states, monitoring state changes	C-12	Lecture
Unit-I	Home Assignment No. 2		Take Home Assignments
Unit-I	Clarification Class - 1	C-13	Clarification Class
Unit-II	Android application components – Android Manifest file		
Unit-II	Android application components – Android Manifest file	C-14	Lecture
Unit-II	Class Room Assignment No.	C-15	Class Room Assignment
Unit-II	Externalizing recourses like Simple Values, Drawables	C-16	Lecture
Unit-II	Layouts, Menus, etc	C-17	Lecture
Unit-II	Building User Interfaces: Fundamental Android UI design	C-18	Lecture
Unit-II	Home Assignment - 3		Take Home Assignments
Unit-II	Presentation No-1	C-19	Presentation
Unit-II	Clarification Class - 2	C-20	Clarification Class
Unit-II	Layouts – Linear, Relative, Grid and Table Layouts. User Interface (UI) Components	C-21	Lecture
Unit-III	Fragments – Creating fragments		
Unit-III	Lifecycle of fragments	C-22	Lecture

Unit-III	Class Room Assignment No. 3	C-23	Class Room Assignment
Unit-III	Adding fragments to Activity	C-24	Lecture
Unit-III	Adding, removing and replacing fragments with fragment transactions	C-25	Lecture
Unit-III	Presentation No. 2	C-26	Presentation
Unit-III	Adding, removing and replacing fragments with fragment transactions	C-27	Lecture
Unit-III	Interfacing between fragments and Activities	C-28	Lecture
Unit-III	Seminar	C-29	Seminar
Unit-III	Class Room Assignment No. 4	C-30	Class Room Assignment
Unit-IV	Intents and Broadcasts	C-31	Lecture
Unit-IV	Intents and Broadcasts	C-32	Lecture
Unit-IV	Guest Lecture-I	C-33	Guest lecture
Unit-IV	Presentation No. 3	C-34	Presentation
Unit-IV	Clarification Class - 3	C-35	Clarification Class
Unit-IV	Using intents to launch Activities		
Unit-IV	Types of Intents	C-36	Lecture
Unit-IV	Passing data to Intents	C-37	Lecture
Unit-IV	Webinar	C-38	Webinar
Unit-IV	Presentation No. 4	C-39	Presentation
Unit-IV	Getting results from Activities	C-40	Lecture
Unit-IV	Broadcast Receivers – Using Intent filters to service implicit Intents	C-41	Lecture
Unit-IV	Guest Lecture-II	C-42	Guest lecture
Unit-IV	Clarification Class 4	C-43	Clarification Class
Unit-IV	Resolving Intent filters	C-44	Lecture
	Webinar-2	C-45	Webinar
Unit-V	Database: Introduction to SQLite database	C-46	Lecture
Unit-V	Database: Introduction to SQLite database	C-47	Lecture
Unit-V	Creating and opening a database	C-48	Lecture
Unit-V	Creating and opening a database	C-49	Lecture
Unit-V	Creating and opening a database	C-50	Lecture
Unit-V	Creating tables	C-51	Lecture
Unit-V	Creating tables	C-52	Lecture
Unit-V	Creating tables	C-53	Lecture
Unit-V	Inserting retrieving and deleting data	C-54	Lecture
Unit-V	Inserting retrieving and deleting data	C-55	Lecture
Unit-V	Inserting retrieving and deleting data	C-56	Lecture
Unit-V	Inserting retrieving and deleting data	C-57	Lecture
Unit-V	Inserting retrieving and deleting data	C-58	Lecture
Unit-V	Inserting retrieving and deleting data	C-59	Lecture
Unit-V	Clarification Class - 5	C-60	Clarification Class

Note: The review of Syllabus happens on periodic basis for the benefit of the students. In case there are changes in curriculum due to review, students would be intimated in writing

----------**End of document**----------