Lesson Plan

Session- 2025-26 Class- B.C.A. 1sT Sem

Subject - Problem Solving Through C (Theory) (4-6) Days

01-Aug to 02-Aug	**UNIT 1 -**	Overview of C: History, Importance, Structure of C Program	
07-Aug to 09-Aug		Character Set, Constants and Variables, Identifiers and Keywords	
14-Aug to 16-Aug		Data Types, Assignment Statement, Symbolic Constant.	
21-Aug to 23-Aug		Input/output: Formatted I/O Function-, Input Functions viz. scanf(), getch(), getche()	
28-Aug to 30-Aug		getchar(), gets(), output functions viz. printf(), putch(), putchar(), puts()	
04-Sep to 06-Sep	**UNIT 2 -**	Operators & Expression: Arithmetic, Relational, Logical, Bitwise,Unary, Assignment,	
11-Sep to 13-Sep		Conditional Operators and Special Operators	**Assignment 1**
18-Sep to 20-Sep		Operator Hierarchy; Arithmetic Expressions, Evaluation of Arithmetic Expression, Type Casting and Conversion	
25-Sep to 27-Sep		Decision making with if statement, ifelse statement, nested if statement, else-if ladder	
02-Oct to 04-Oct		switch and break statement, goto statement, Looping Statements: for, while, and dowhile loop, jumps in loops.	
09-Oct to 11-Oct	**UNIT 3 -**	Arrays: One Dimensional arrays - Declaration, Initialization and Memory representation	**Mid Term exam Of Unit 1-2**
16-Oct to 18-Oct		Two Dimensional arrays -Declaration, Initialization and Memory representation.	
23-Oct to 25-Oct		**Diwali Vacations/ Assignment 2**	
30-Oct to 01-Nov		Functions: definition, prototype, function call, passing arguments to a function: call by value; call by reference, recursive functions	
06-Nov to 08-Nov		Strings: Declaration and Initialization, String I/O, Array of Strings, String Manipulation Functions: String Length, Copy, Compare, Concatenate etc., Search for a Substring	
13-Nov to 15-Nov	**UNIT 4 -**	Pointers in C: Declaring and initializing pointers, accessing address and value of variables using pointers, Pointers and Arrays.,	
20-Nov to 22-Nov		User defined data types: Structures - Definition, Advantages of Structure, declaring structure variables, accessing structure members	
27-Nov to 29-Nov		Structure members initialization, Array of Structures; Unions - Union definition, difference between Structure and Union. **Exam of Unit 3-4**	**Mid Term**

Practical Plan

Session- 2025-26

Class- B.C.A. 1st Sem

Subject - Problem Soving Through C Language (3-6)

06-Aug to 09-Aug	Group 1	To read radius of a circle and to find area and circumference
	Group 2	To read radius of a circle and to find area and circumference
13-Aug to 16-Aug	Group 1	To read three numbers and find the biggest of three, To check whether the number is prime or not
	Group 2	To read three numbers and find the biggest of three, To check whether the number is prime or not
20-Aug to 23-Aug	Group 1	To read a number, find the sum of the digits, reverse the number and check it for palindrome
	Group 2	To read a number, find the sum of the digits, reverse the number and check it for palindrome
27-Aug to 30-Aug	Group 1	To read numbers from keyboard continuously till the user presses 999 and to find the sum of only positive numbers
	Group 2	To read numbers from keyboard continuously till the user presses 999 and to find the sum of only positive numbers
03-Sep to 06-Sep	Group 1	To read percentage of marks and to display appropriate message (Demonstration of else-if ladder)
	Group 2	To read percentage of marks and to display appropriate message (Demonstration of else-if ladder)
10-Sep to 13-Sep	Group 1	To find the roots of quadratic equation
	Group 2	To find the roots of quadratic equation
17-Sep to 20-Sep	Group 1	To read marks scored by n students and find the average of marks (Demonstration of single dimensional array)
	Group 2	To read marks scored by n students and find the average of marks (Demonstration of single dimensional array)
24-Sep to 27-Sep	Group 1	To remove Duplicate Element in a single dimensional Array
	Group 2	To remove Duplicate Element in a single dimensional Array
01-Oct to 04-Oct	Group 1	To perform addition and subtraction of Matrices
	Group 2	To perform addition and subtraction of Matrices
08-Oct to 11-Oct	Group 1	To find factorial of a number, To generate Fibonacci series
	Group 2	To find factorial of a number, To generate Fibonacci series
15-Oct to 18-Oct	Group 1	To remove Duplicate Element in a single dimensional Array
	Group 2	To remove Duplicate Element in a single dimensional Array
22-Oct to 25-Oct	Group 1	**Diwali Vacations**
	Group 2	
29-Oct to 01-Nov	Group 1	To find the length of a string without using built in function, To demonstrate string functions
	Group 2	To find the length of a string without using built in function, To demonstrate string functions
05-Nov to 08-Nov	Group 1	To read, display and add two m x n matrices using functions
	Group 2	To read, display and add two m x n matrices using functions
12-Nov to 15-Nov	Group 1	To read a string and to find the number of alphabets, digits, vowels, consonants, spaces and special characters
	Group 2	To read a string and to find the number of alphabets, digits, vowels, consonants, spaces and special characters
19-Nov to 22-Nov	Group 1	To Swap Two Numbers using Pointers, To demonstrate student structure to read & display records of n students
	Group 2	To Swap Two Numbers using Pointers, To demonstrate student structure to read & display records of n students
26-Nov to 29-Nov	Group 1	To demonstrate the difference between structure & union.
	Group 2	To demonstrate the difference between structure & union.

Lesson Plan
Session- 2025-26
Class- B.C.A. 1st Sem
Subject - L.O.C-I (1-4)

04-Aug to 07-Aug	UNIT 1-	D4:D21Number Systems: Binary, Octal, Hexadecimal etc. Conversions from one number system to another, BCD Number
11-Aug to 14-Aug		System. BCD Codes: Natural Binary Code, Weighted Code, SelfComplimenting Code, Cyclic Code.
18-Aug to 21-Aug		Error Detecting and Correcting Codes. Character representations: ASCII, EBCDIC and Unicode.
25-Aug to 28-Aug		Number Representations: Integer numbers - sign-magnitude, 1's & 2's complement representation.
01-Sep to 04-Sep		Real Numbers normalized floating point representations. **Assignment 1**
08-Sep to 11-Sep	**UNIT 2 -**	Binary Arithmetic: Binary Addition, Binary Subtraction, Binary Multiplication, Binary Division using 1's and 2's Compliment representations, Addition and subtraction with BCD representations.
15-Sep to 18-Sep		Boolean Algebra: Boolean Algebra Postulates, basic Boolean, Theorems, Boolean Expressions, Boolean Functions, Truth Tables,
22-Sep to 25-Sep		Canonical Representation of Boolean Expressions: SOP and POS,Simplification of Boolean Expressions using Boolean Postulates & Theorems,
29-Sep to 02-Oct		Kaurnaugh-Maps (upto four variables), Handling Don't Care conditions. **Mid Term exam Of Unit 1-2**
06-Oct to 09-Oct	**UNIT 3 -**	Logic Gates: Basic Logic Gates – AND, OR, NOT, Universal Gates – NAND, NOR, Other Gates – XOR, XNOR etc. Their symbols, truth tables and Boolean expressions.
13-Oct to 16-Oct		Combinational Circuits: Design Procedures, Half Adder, Full Adder, Half Subtractor, Full Subtracor,
20-Oct to 23-Oct		**Diwali Vacations/ Assignment 2**
27-Oct to 30-Oct		Multiplexers, Demultiplexers, Decoder, Encoder, Comparators, Code Converters.
03-Nov to 06-Nov	**UNIT 4 -**	Sequential Circuits: Basic Flip- Flops and their working., Synchronous and Asynchronous Flip –Flops,
10-Nov to 13-Nov		Triggering of Flip- Flops, Clocked RS, D Type, JK, T type and Master-Slave Flip-Flops.
17-Nov to 20-Nov		State Table, State Diagram and State Equations.,
24-Nov to 27-Nov		Flip-flops characteristics & Excitation Tables, Sequential Circuits. **Revision/ Mid Term Exam of Unit 3-4**

Lesson Plan
Session- 2025-26
Class- B.C.A. 1st Sem
Subject - Essentials of Python (SEC) (5-6) Days

08-Aug to 09-Aug	**UNIT 1 -**	Keywords and Identifiers; Comments: Purpose/use of comments, Single line comment/Multiline comment;
15-Aug to 16-Aug		Python Variables: Declaration of Variables, Assign Values to Variables, Initializa-tion, Reading, Variable naming restrictions, and Types of Python Variables.
22-Aug to 23-Aug		Python Data Types: Implicit Declaration of Data Types, Python Numbers (Integers, floating-point numbers, and complex numbers),
29-Aug to 30-Aug		Python Strings, Python Boolean data type; **Assignment 1**
05-Sep to 06-Sep	**UNIT 2 -**	Operators: Arithmetic, Comparison/Relational Operators,Increment Operators,
12-Sep to 13-Sep		Logical operators, Identity Operators, and Operators Precedence.
19-Sep to 20-Sep		Python Control Flow Statement, Decision Making: Simple If Structure, if-else structure,
26-Sep to 27-Sep		if elif structure, and nested If Structure; **Mid Term exam Of Unit 1-2**
03-Oct to 04-Oct	**UNIT 3 -**	Looping: Python Loop Statements. Python while loop, Python for loop, Python range(),
10-Oct to 11-Oct		Python Nested Loop Structures, and Inserting conditions in Loops and vice versa; Python Branching Statements – break, continue, pass.
17-Oct to 18-Oct		Python Lists: Create Python Lists, Update Python Lists, Delete Elements from Python Lists, and Built-in Functions Methods for Python Lists.
24-Oct to 25-Oct		**Diwali Vacations/ Assignment 2**
31-Oct to 01-Nov	**UNIT 4 -**	Tuples: create, update, join and methods; Sets: create, add/remove items, join sets, set methods;
07-Nov to 08-Nov		Dictionary: create, access, add/remove items, dictionary methods. Manipulating
14-Nov to 15-Nov		Strings - Working with Strings, Useful String Methods
21-Nov to 22-Nov		Python Functions: defining function, arbitrary arguments, keywords arguments, default parameter values, return value and return statements; Lambda;
28-Nov to 29-Nov		Arrays: looping through array elements, array methods; **Mid Term exam Of Unit 3 - 4**

Lesson Plan
Session- 2025-26
Class- B.C.A. 3rd Sem
Subject - Database Technologies (1-2) Days

04-Aug to 05-Aug	**UNIT 1-** Basic Concepts – Data, Information, Records, Files, Schema and Instance etc. Limitations of File Based Approach, Characteristics of Database Approach, Database Management
11-Aug to 12-Aug	System (DBMS), Components of DBMS Environment, DBMS Functions and Components, Database Interfaces, Advantages and Disadvantages of DBMS.
18-Aug to 19-Aug	Database Users: Data and Database Administrator, Role and Responsibilities of Database Administrator, Database Designers, Application Developers etc.
25-Aug to 26-Aug	Database System Architecture – 1-Tier, 2-Tier & Three Levels of Architecture, External, Conceptual and Internal Levels, Schemas, Mappings and Instances,
01-Sep to 02-Sep	Data Independence – Logical and Physical Data Independence. **Assignment -1**
08-Sep to 09-Sep	**UNIT 2 -** Data Models: Hierarchical, Network and Relational Data Models.
15-Sep to 16-Sep	Entity-Relationship Model: Entity, Entity Sets, Entity Type,
22-Sep to 23-Sep	Attributes: Type of Attributes, Keys, Integrity Constraints,
29-Sep to 30-Sep	Designing of ER Diagram, Symbolic Notations for Designing ER Diagram, **Mid - Term Exam of Unit 1, 2**
06-Oct to 07-Oct	**UNIT 3 -** SQL: Meaning, Purpose and Need of SQL, Data Types, SQL Components: DDL, DML, DCL and DQL,
13-Oct to 14-Oct	Basic Queries, Join Operations and Sub-queries, Views, Specifying Indexes. Constraints and its Implementation in SQL.
20-Oct to 21-Oct	**Diwali Vacations** **Assignment 2**
27-Oct to 28-Oct	Relational Algebra: Basic Operations: Select, Project, Join, Union, Intersection, Difference, and Cartesian Product etc.
03-Nov to 04-Nov	Relational Calculus: Tuple Relational and Domain Relational Calculus. Relational Algebra Vs. Relational Calculus.
10-Nov to 11-Nov	**UNIT 4 -** Relational Model: Functional Dependency, Characteristics, Inference Rules for Functional Dependency, Types of Functional Dependency,
17-Nov to 18-Nov	Normalization: Benefits and Need of Normalization, Normal Forms Based on Primary Keys- (1NF, 2NF, 3NF, BCNF),
24-Nov to 25-Nov	Multivalued Dependencies, 4 NF, Join dependencies, 5 NF, Domain Key Normal Form. **Mid - Term Exam of Unit 3, 4**

Practical Plan
Session- 2025-26
Class- B.C.A. 3rd Sem
Subject - Practical Database Technologies (3-6)

06-Aug to 09-Aug	Group 1	Performing various SQL statement. Creating various tables and performing all possible queries based on syllabus
	Group 2	Performing various SQL statement. Creating various tables and performing all possible queries based on syllabus
13-Aug to 16-Aug	Group 1	Performing various SQL statement. Creating various tables and performing all possible queries based on syllabus
	Group 2	Performing various SQL statement. Creating various tables and performing all possible queries based on syllabus
20-Aug to 23-Aug	Group 1	Performing various SQL statement. Creating various tables and performing all possible queries based on syllabus
	Group 2	Performing various SQL statement. Creating various tables and performing all possible queries based on syllabus
27-Aug to 30-Aug	Group 1	Performing various SQL statement. Creating various tables and performing all possible queries based on syllabus
	Group 2	Performing various SQL statement. Creating various tables and performing all possible queries based on syllabus
03-Sep to 06-Sep	Group 1	Performing various SQL statement. Creating various tables and performing all possible queries based on syllabus
	Group 2	Performing various SQL statement. Creating various tables and performing all possible queries based on syllabus
10-Sep to 13-Sep	Group 1	Understanding relational model concepts
	Group 2	Understanding relational model concepts
17-Sep to 20-Sep	Group 1	Understanding relational model concepts
	Group 2	Understanding relational model concepts
24-Sep to 27-Sep	Group 1	Understanding relational model concepts
	Group 2	Understanding relational model concepts
01-Oct to 04-Oct	Group 1	Understanding relational model concepts
	Group 2	Understanding relational model concepts
08-Oct to 11-Oct	Group 1	Understanding normalization
	Group 2	Understanding normalization
15-Oct to 18-Oct	Group 1	Understanding normalization
	Group 2	Understanding normalization
22-Oct to 25-Oct	Group 1	**Diwali Vacations**
	Group 2	
29-Oct to 01-Nov	Group 1	Understanding normalization
	Group 2	Understanding normalization
05-Nov to 08-Nov	Group 1	Understanding normalization
	Group 2	Understanding normalization
12-Nov to 15-Nov	Group 1	Understanding various concepts of databases.
	Group 2	Understanding various concepts of databases.
19-Nov to 22-Nov	Group 1	Understanding various concepts of databases.
	Group 2	Understanding various concepts of databases.
26-Nov to 29-Nov	Group 1	Understanding various concepts of databases.
	Group 2	Understanding various concepts of databases.

Lesson Plan Session- 2025-26 Class- B.C.A. 5th Sem Subject - Data Communication & Networking (1-3) Days			
04-Aug	to	06-Aug	**UNIT 1 -** Introduction to Computer Communications and Networking Technologies; Uses of Computer Networks; Network Devices, Nodes, and Hosts; Types of Computer Networks and their Topologies;
11-Aug	to	13-Aug	Network Software: Network Design issues and Protocols; Connection-Oriented and Connectionless Services; Network Applications and Application Protocols;
18-Aug	to	20-Aug	Computer Communications and Networking Models: Decentralized and Centralized Systems, Distributed Systems, Client/Server Model, Peer-to-Peer Model, Web-Based Model,
25-Aug	to	27-Aug	Network Architecture and the OSI Reference Model, TCP/IP reference model, Example Networks: The Internet, X.25, Frame Relay, ATM.
01-Sep	to	03-Sep	**UNIT 2 -** Analog and Digital Communications Concepts: Concept of data, signal, channel, bid-rate , maximum data-rate of channel,
08-Sep	to	10-Sep	Representing Data as Analog Signals, Representing Data as Digital Signals, Data Rate and Bandwidth, Capacity, Baud Rate;
15-Sep	to	17-Sep	Asynchrous and synchrous transmission, data encoding techniques, Modulation techniques, Digital Carrier Systems;
22-Sep	to	24-Sep	Guided and Wireless Transmission Media; Communication Satellites; Switching and Multiplexing; Dialup Networking; Analog Modem Concepts; DSL Service.
29-Sep	to	01-Oct	**UNIT 3 -** Data Link Layer: Framing, Flow Control, Error Control; Error Detection and Correction; Sliding Window Protocols; Media Access Control:
06-Oct	to	08-Oct	Random Access Protocols, Token Passing Protocols; Token Ring;
13-Oct	to	15-Oct	Introduction to LAN technologies: Ethernet, switched Ethernet, VLAN, fast Ethernet, gigabit Ethernet, token ring, FDDI, Wireless LANs; Bluetooth;
20-Oct	to	22-Oct	**Diwali Vacations**
27-Oct	to	29-Oct	Network Hardware Components: Connectors, Transceivers, Repeaters, Hubs, Network Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways.
03-Nov	to	05-Nov	**UNIT 4 -** Network Layer and Routing Concepts: Virtual Circuits and Datagrams;
10-Nov	to	12-Nov	Routing Algorithms: Flooding, Shortest Path Routing, Distance Vector Routing; Link State Routing,
17-Nov	to	19-Nov	Hierarchical Routing; Congestion Control Algorithms; Internetworking;
24-Nov	to	26-Nov	Network Security Issues: Security threats; Encryption Methods; Authentication; Symmetric – Key Algorithms; Public-Key Algorithms.