Government College for Girls Sector-52, Gurugram

Lesson Plan Session July 2025

Name: Sangeeta Rani Department: Computer Science

Class: BCA (1st Sem)

Course code: 240/BCA/CC101

Course title: Fundamentals of Computer & Programming in C

Course outcomes:

CO1: Learn the functional units and classify types of computers, their applications and effects.
CO2: Understand system software and their working.
CO3: Understand the logic building used in programming.
CO4: Design and develop algorithms for solving various real-life problems.

Textbooks & Reference Books:

1. ***Nasib Singh Gill, Computing Fundamentals and Programming in C, Khanna Books Publishing Co., New Delhi.***
2. ***Rajender Singh Chhillar, Application of IT to Business, Ramesh Publishers, Jaipur.***
3. ***E. Balaguruswamy, Programming in C. Tata McGraw Hill.***
4. ***Kanetker Yashwant, Let us C, BPB.***
5. ***Rajaraman, V., Computer Programming in C, PHI***

Aug 2025	Computer Fundamentals: Concept of data and information. Components of Computer. Input and Output Device, Components of CPU, Memory and Storage Devices, Classification of Computers, Advantages and Limitations of Computer, Applications of Computer, Social concerns of Computer Technology: Positive and Negative Impacts, Computer Crimes, Viruses and their remedial solutions.
Sep 2025	Computer Software: System and Application Software, Overview of Operating System Programming Languages Machine. Assembly. High Level Language, 4GL. Language Translator, Linker and Loader. Problem Solving: Problem Identification. Analysis, Algorithms, Flowcharts. Pseudo codes. Decision Tables. Program Coding. Program Testing and Execution. Basic of C Programming Language. C Programming Fundamentals: Keywords, Variables and Constants, Structure of a C program.
Oct 2025	Operators & Expressions: Arithmetic, Unary, Logical. Bit-wise. Assignment & Conditional Operators. Decision Making: Decision making using if...else. Else If Ladder; Switch, break. Continue and Goto statements. Loops: Looping using while, do...while, for statements. Nested loops. Functions: Defining & Accessing User defined functions.
Nov 2025	Library Functions, Function Prototype, Passing Arguments, Passing array as argument. Recursion, Use of Library Functions. Macro vs. Functions, Pointers in C. Revision and Test. C Programs related to syllabus topics.

Class: BCA 3rd Semester

Course Title: Operating System

Instructor: Sangeeta Rani

Scope & Objectives:

(i) To enable the student to understand basic concepts of operating systems and its services.
(ii) To enable the student to understand the concept of process management and scheduling.
(iii) To enable the student to understand the concept ofprocess synchronization along with deadlock handling.
(iv) To enable the student to learn about memory management.

Text Books:

T1. Silberschatz A., Galvin P.B.,and Gagne G., Operating System Concepts, John Wiley & Sons.

Reference Books:

1. Silberschatz A., Galvin P.B.,and Gagne G., Operating System Concepts, John Wiley & Sons.
2. Godbole, A.S., Operating Systems, Tata McGraw-Hill Publishing Company, New Delhi.
3. Deitel, H.M., Operating Systems, Addison-Wesley Publishing Company, New York.
4. Tanenbaum, A.S., Operating System-Design and Implementation, Prentice Hall of India, New Delhi.

Evaluation Scheme:

Internal Assessment: 25 Marks **Final Assessment: 50**

Contact Hours: 3 Hrs/Week

Month	Topic to be covered
Aug 2025	Introductory Concepts: Operating System Functions and Characteristics, Historical Evolution of Operating Systems
	Operating System Structure and Operations; Types of Operating System: Real time,

	Multiprogramming, Multiprocessing, Batch processing
	Operating System Services, Operating System Interface, Methodologies for Implementation of Operating System
	Service System Calls, System Programs.
	Process Management: Process Concepts, Operations on Processes,
	Process States and Process Control Block.
Sep 2025	Inter Process Communication
	Multithreaded Programming: Multithreading Models, Threading Issues;
	CPU Scheduling: Scheduling Criteria, Levels of Scheduling, Scheduling Algorithms, Multiple Processor Scheduling; Algorithm Evaluation.
	Synchronization: Critical Section Problem, Peterson's Solution
	Synchronization Hardware, Semaphores, Classical Problem of Synchronization,
	Monitors, Atomic Transactions;
Oct 2025	Deadlocks: Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection and Recovery.
	Memory Management Strategies: Memory Management of Single-User and Multiuser Operating System,
	Partitioning, Swapping,
	Contiguous Memory Allocation, Paging and Segmentation;
	Virtual Memory Management: Demand Paging, Page Replacement Algorithms,
Nov 2025	Thrashing, Memory Mapped Files.
	Distributed Operating Systems: Types of Network based Operating Systems,
	Network Structure, Design Issues;
	Revision and Test

Name: Sangeeta Bhatia

Class: BCA 3rd Sem

Course code: CC-ID9

Course title: Web Designing

Aug 2025	Introduction to Internet and World Wide Web (WWW); Evolution and History of World Wide Web, Web Pages and Contents, Web Clients, Web Servers, Web Browsers; Hypertext Transfer Protocol, URLs; Searching and WebCasting Techniques, Search Engines and Search Tools, Scripting Language Web Publishing: Hosting website; Internet Service Provider; Planning and designing website;
Sep 2025	Web Content Authoring, Web Graphics Design, Web Programming, Steps For Developing website, Choosing the Contents, Home Page, Domain Names, Creating a Website and Introduction to Mark up Languages (HTML and DHTML). Web Development: HTML Document Features, Fundamentals HTML Elements, Creating Links; Headers; Text styles; Text Structuring; Text colour and Background; Formatting text; Page layouts,
Oct 2025	Images; Ordered and Unordered lists; Inserting Graphics; Table Creation and Layouts; Frame Creation and Layouts; Working with Forms and Menus; Working with Radio Buttons; Check Boxes; Text Boxes.
Nov 2025	Introduction to CSS (Cascading Style Sheets): Features, Core Syntax, Types, Style Sheets and HTML, Style Rule Cascading and Inheritance, Text Properties, CSS Box Model, Normal Flow Box Layout, Positioning and other useful Style Properties; Features of CSS3. Revision & Tests

Name: Sangeeta Bhatia

Class: BCA 3rd Sem

Course code: CC-ID8

Course title: Object oriented Programming using C++

Aug 2025	Elements of Programming and Function Introduction: Basic Elements of Programming, Console I/O Operations, Function: Function Prototyping, Call and Return By Reference, Inline Function, Default and Const Arguments, Function Overloading, Arrays, Manipulators and Enumeration. Classes and Object Oriented Methodology: Basic Concepts/Characteristics of OOP. Advantages and Application of Oops, Procedural Programming Vs OOP. Classes and Objects: Specifying a Class, Creating Objects, Private & Public Data Members and Member Functions, Defining Inline Member Functions
Sep 2025	Static Data Members and Member Functions. Arrays within Class, Arrays of Objects, Objects as Function Arguments, Returning Objects Constructors, Destructors, Operators Overloading and Inheritance. Constructors and Destructors: Introduction, Parameterized Constructors, Multiple Constructors in A Class, Constructors With Default Arguments, Dynamic Initialization of Objects, Copy Constructors, Dynamic Constructors, Const Objects, Destructors Operators Overloading: Definition, Unary and Binary Overloading, Rules for Operator Overloading.
Oct 2025	Inheritance: Defining Derived Classes, Types of Inheritance, Constructors and Destructors in Derived Classes. Pointers Virtual & Friend functions and file handling Pointers: Pointer to Objects, This Pointer, “New” and “Delete”Operators, Virtual Function, Friend Functions.
Nov 2025	Opening, Closing A File, File Modes, File Pointers and Their Manipulation, Sequential Input and Output Operations: Updating A File, Random Access, and Error Handling During File Operations, Command Line Arguments. Revision & Tests