Lesson Plan (2025-26)
Course: Artificial Intelligence & Applications (MCA-1st Semester)

Teacher: Dr. Sandeep Maan, Professor of Computer Science

Sno	Week	Unit	Topics to be Covered
1	Week-1 [01-Aug-2025-02-Aug-2025]		Introduction
2	Week-2 [04-Aug-2025-09-Aug-2025]	1	Introduction: History, Definition of AI, Emulation of human cognitive process, knowledge search trade off
3	Week-3 [11-Aug-2025-16-Aug-2025]	1	stored knowledge, semantic nets.
4	Week-4 [18-Aug-2025-23-Aug-2025]	1	An abstract view of modelling, elementary knowledge. Computational logic, analysis of compound statements using simple logic connectives
5	Week-5 [25-Aug-2025-30-Aug-2025]	1	predicate logic knowledge organization and manipulation, knowledge acquisition.
6	Week-6 [01-Sep-2025-06-Sep-2025]	2	PROGRMMING AND LOGICS IN ARTIFICIAL INTELLIGENCE LISP and other programming languages- introduction to LISP syntax and numerical function LISP and PROLOG distinction
7	Week-7 [08-Sep-2025-13-Sep-2025]	2	input output and local variables, Interaction and recursion, property list and arrays alternative languages
8	Week-8 [15-Sep-2025-20-Sep-2025]	2	formalized symbolic logics prope1ties of WFFS non-deductive inference methods.
9	Week-9 [22-Sep-2025-27-Sep-2025]	2	Inconsistencies and uncertainties Truth maintenance systems, default reasoning and closed world assumption, Model and tempora1y logic.
10	Week-10 [29-Sep-2025-04-Oct-2025]	3	SEARCH METHODS AND KNOWLEDGE REPRESENTATION Fuzzy logic - concepts, introduction to Fuzzy logic with examples, probabilistic reasoning, Bayesian probabilistic inference Dempster Shafer theory, possible world representation
11	Week-11 [06-Oct-2025-11-Oct-2025]	3	AdHoc methods. Structure knowledge: Graph, frames and related structures,
12	Week-12 [13-Oct-2025-18-Oct-2025]	3	Object oriented representation- object classes, message and methods, simulation examples using OOPS programs, OOP languages
13	Week-13 [20-Oct-2025-25-Oct-2025]		**Diwali Vacations**
14	Week-14 [27-Oct-2025-01-Nov-2025]	3	Search and control strategies - Concepts, search problems, unifo1med or Blind search, searching AND - OR graphs.
15	Week-15 [03-Nov-2025-08-Nov-2025]	4	KNOWLEDGE ORGANISATION AND COMMUNICATION IN EXPERT SYSTEMS Matching techniques- Need for matching, matching problem,
16	Week-16 [10-Nov-2025-15-Nov-2025]	4	partial matching, Fuzzy matching, RETE matching algorithm.
17	Week-17 [17-Nov-2025-22-Nov-2025]	4	Knowledge organization- Indexing and retrieval techniques, integration of knowledge in memory organization systems, Perception, communication and Expert systems.
18	Week-18 [24-Nov-2025-29-Nov-2025]	4	Overview of Linguistics, Basic passim techniques, semantic analysis and representation structures, natural language generation and system

Lesson Plan (2025-26)
Course: Data Communication & Computer Networks (MCA-3rd Semester)

Teacher: Dr. Sandeep Maan, Professor of Computer Science

Sno	Week	Unit	Topics to be Covered
1	Week-1 [01-Aug-2025-02-Aug-2025]		Introduction
2	Week-2 [04-Aug-2025-09-Aug-2025]	1	Introduction to Computer Communications and Networking Technologies, Uses of Computer Networks, Network Devices, Nodes, and Hosts, Types of Computer Networks and their Topologies.
3	Week-3 [11-Aug-2025-16-Aug-2025]	1	Network Software: Network Design Issues and Protocols, Connection-Oriented and Connectionless Services, Network Applications and Application Protocols, Computer Communications and Networking Models: Decentralized and Centralized Systems, Distributed Systems, Client/Server Model, Peer-to-Peer Model, Web-Based Model,
4	Week-4 [18-Aug-2025-23-Aug-2025]	1	Network Architecture and the OSI Reference Model, TCP/IP Reference Model,
5	Week-5 [25-Aug-2025-30-Aug-2025]	1	Example Networks: The Internet, X.25, Frame Relay, ATM.
6	Week-6 [01-Sep-2025-06-Sep-2025]	2	Analog and Digital Communications Concepts, Concept of Data, Signal, Channel, Bit Rate, Maximum Data Rate of Channel
7	Week-7 [08-Sep-2025-13-Sep-2025]	2	Representing Data as Analog Signals, Representing Data as Digital Signals, Data Rate and Bandwidth Capacity, Baud Rate, Asynchronous and Synchronous Transmission,
8	Week-8 [15-Sep-2025-20-Sep-2025]	2	Data Encoding Techniques, Modulation Techniques, Guided and Wireless Transmission Media, Communication Satellites,
9	Week-9 [22-Sep-2025-27-Sep-2025]	2	Switching and Multiplexing, Dial-up Networking, Analog Modem Concepts, DSL Service.
10	Week-10 [29-Sep-2025-04-Oct-2025]	3	Data Link Layer: Framing, Flow Control, Error Control; Error Detection and Correction,
11	Week-11 [06-Oct-2025-11-Oct-2025]	3	Sliding Window Protocols, Media Access Control: Random Access Protocols Token Passing Protocols,
12	Week-12 [13-Oct-2025-18-Oct-2025]	3	Introduction to LAN Technologies: Ethernet, Switched Ethernet, VLAN, Fast Ethernet, Gigabit Ethernet, Token Ring, FDDI, Wireless LANs, Bluetooth
13	Week-13 [20-Oct-2025-25-Oct-2025]		**Diwali Vacations**
14	Week-14 [27-Oct-2025-01-Nov-2025]	3	Network Hardware Components: Connectors, Transceivers, Repeaters, Hubs, Network Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways.
15	Week-15 [03-Nov-2025-08-Nov-2025]	4	Network Layer and Routing Concepts: Virtual Circuits and Datagrams Routing Algorithms,
16	Week-16 [10-Nov-2025-15-Nov-2025]	4	Routing Algorithms, Flooding, Shortest Path Routing, Distance Vector Routing, Link State Routing, Hierarchical Routing,
17	Week-17 [17-Nov-2025-22-Nov-2025]	4	Congestion Control Algo1ithms, Internetworking,
18	Week-18 [24-Nov-2025-29-Nov-2025]	4	Network Security Issues: Security Threats, Encryption Methods, Authentication, Symmetric-Key Algo1ithms, Public-Key Algorithms.

Lesson Plan Session July 2025

Name: Ankita

Class: BCA 2ND Year

Course code: CC-ID9

Course title: Web Designing

July 2025	UNIT – I 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 Web Casting Techniques, Search Engines and Search Tools, Scripting Languages.
Aug 2025	UNIT – II Web Publishing: Hosting website; Internet Service Provider; Planning and designing website; 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).
Sep 2025	UNIT – III Web Development: HTML Document Features, Fundamentals HTML Elements, Creating Links; Headers; Text styles; Text Structuring; Text colour and Background; Formatting text; Page layouts, 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.
Oct 2025	UNIT – IV Introduction to CSS (Cascading Style Sheets): Features, Core Syntax, Types, Style Sheets and HTML, Style Rule Cascading and Inheritance,
Nov 2025	Text Properties, CSS Box Model, Normal Flow Box Layout, Positioning and other useful Style Properties; Features of CSS3.

Lesson Plan Session July 2025

Name: Arti

Class: BCA 1st Year

Course code: CC-ID2

Course title: PC Software

Aug 2025	UNIT – I Windows: Basics of Windows. Windows History, Basic components of windows, icons, types of icons, taskbar, activating windows, using desktop, title bar, running applications, Windows explorer, computer, managing files and folders, Configuring System devices. Control panel, using windows accessories.
Sep 2025	UNIT – II Documentation Using Word-Processing package: Introduction to Word-Processing, Creating & Editing Document, Formatting Document, Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary, Page Formatting, Bookmark, Advance Features of Word-Processing: Mail Merge, Macros, Tables, Printing, Styles, linking and embedding object.
Oct 2025	UNIT – III Electronic Spread Sheet - Introduction & area of use, Creating & Editing Worksheet, Formatting and Essential Operations, Formulas and Functions, Charts, Database Management : Sorting, Querying, Filtering, Table, Validation, Goal Seek, Scenario.
Nov 2025	UNIT – IV Presentation using PowerPoint: Presentations, Creating, Manipulating & Enhancing Slides, Organizational Charts, Excel Charts, Word Art, Layering art Objects, Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In- Built Sound Effect.

Lesson Plan Session July2025

Name: Bhanu Pratap Saini

Class: BCA-1st Sem

Course code: CC-ID3

Course title: Logical Organization of Computers

July2025	**Unit-1.** Information Representation: Number Systems, Binary Arithmetic, Fixed-point and Floating point representation of numbers,
Aug 2025	BCD Codes, Error detecting and correcting codes, Character Representation – ASCII, EBCDIC, Unicode Binary Logic: Boolean Algebra, Boolean Theorems, Boolean Functions and Truth Tables, Canonical and Standard forms of Boolean functions, Simplification of Boolean Functions –Venn Diagram, Karnaugh Maps.
Sep 2025	**Unit-2.** Digital Logic: Basic Gates – AND, OR, NOT, Universal Gates – NAND, NOR, Other Gates – XOR, XNOR etc. Implementations of digital circuits using gates, Combinational Logic – Characteristics, Design Procedures, analysis procedures. Combinational Circuits: Half-Adder, Full-Adder, Half-Subtractor, Full-Subtractor, Encoders, Decoders, Multiplexers, Demultiplexers, Comparators, Code Converters. **Unit-3** Sequential Logic: Characteristics, Flip-Flops, Clocked RS, D type, JK Flip-Flop
Oct 2025	T type and Master Slave flip-flops. State table, state diagram and state equations. Flip-flop excitation tables Designing registers – Serial Input Serial Output (SISO), Serial Input Parallel Output (SIPO), Parallel Input Serial Output (PISO), Parallel Input Parallel Output (PIPO) and shift registers. Designing counters – Asynchronous and Synchronous Binary Counters, Modulo-N Counters and Up-Down Counters
Nov 2025	**Unit-4.** Memory & I/O Devices: Memory Parameters, Semiconductor RAM, ROM, Magnetic and Optical Storage devices, Flash memory, I/O Devices and their controllers. Instruction Design & I/O Organization: Machine instruction, Instruction set selection, Instruction cycle, Instruction Format and Addressing Modes. I/O Interface, Interrupt structure, Program controlled, Interrupt- controlled & DMA transfer, IOP.

Lesson Plan Session July2025

Name: Bhanu Pratap Saini

Class: Bachelor of Arts with Major in English & Bachelor of Arts with Major in Geography

Course code: MDC-3

Course title: Programming With Python, **Course Code:** 240/CS/MD301

July2025	Unit-1. Introduction to Python: Python Interpreter, Python as calculator, Python shell, Indentation, identifier and keywords
Aug 2025	literals, strings, Operators: Arithmetic, Relational, Logical, comparison, Bitwise, Assignment, Identity operator and Membership operator; Input output statement; Control statements: Branching, looping, Conditional statement, Exit function Unit-2. String manipulations: Subscript operator, indexing, slicing a string, other functions on strings, string module. Strings and number system: Format functions, converting strings to numbers & Vice Versa. List, Tuples, Sets.
Sep 2025	Dictionaries: Basic list operators, replacing, inserting, removing an element, searching, Sorting lists, dictionary literals, adding & removing keys, accessing& replacing values, traversing dictionaries Unit-3 Array in Python, Design with Functions: hiding redundancy, complexity, arguments & return values; Formal/Actual arguments, named arguments.
Oct 2025	program structure and design, Recursive functions, scope & Global statements, Importing modules, Math modules & Random modules. Exception Handling: Exceptions, except clause, try and finally clause, user defined exceptions. File Handling
Nov 2025	: Manipulating files & directories, OS & SYS modules, Reading, Writing text & numbers from/to file. Graphics: Turtle module, drawing colors, shapes, digital images, image file formats.

Lesson Plan Session July 2025

Name: Gagnesh Arora

Class: MCA 3rd Sem.

Course code: DSE-03

Course title: Full Stack Programming-1

July 2025	Why Full Stack Development? Web development vs FullStack Development, Client-Server architecture, Rules of three-tier architecture, Anatomy of a Website, Web hosting steps, HTML, HTML Document, Object Model, W3C standards for HTML, Structural markup, Semantic markup, HTML Lists, Links, Absolute versus relative path names, URL: Anatomy, Types, HTML Formatting, HTML Tables, Meta tags, Structural tags, Character entities, Forms Input Types.
Aug 2025	CSS: W3C CSS Validator, Types, CSS Selectors, Cascading, Inheritance, Specificity, Units of -Measure, Width and Height of element, Box Model Layout, Border Box Versus Content Box, Responsive website Design Bootstrap Grid System, CSS pre-processor: Less, Sass and features.
Sep 2025	JavaScript: Java Script Language Basics, Objects, Strings, Numbers, Math, Arrays, Boolean, JavaScript Scope, JavaScript Events, Comparisons, Conditions, Switch, Loops in JavaScript, JavaScript RegExp, JavaScript Errors, JavaScript Debugging, JavaScript Hoisting, JavaScript Strict Mode, JavaScript Functions, JavaScript Objects, JavaScript Forms, JavaScript HTML DOM, JavaScript BOM, DOM vs BOM.
Oct 2025	Introduction to AngularJS, AngularJS Expressions, AngularJS Modules, AngularJS Data Binding, AngularJS Scopes, AngularJS Directives & Events, AngularJS Controllers AngularJS Filters, AngularJS Services, AngularJS HTTP, AngularJS Tables, AngularJS Select.
Nov 2025	Fetching and Manipulating Data from MySQL.

Gagnesh.

Lesson Plan Session July2025

Name: Komal Bansal

Class: B.Sc Computer Science(3rd Sem)

Course code: 240/CS /CC301

Course title: Computer Networks

July2025	Introduction to Computer Networks; Goals and applications; Types of Computer Networks; Network Design Issues and Protocols; Computer Communications and Networking Models; Communication Service methods and Data Transmission Modes.
Aug 2025	OSI Reference Model; OSI Service Types; Functions of layers of OSI Model; TCP/IP architecture; Purpose of major Protocols of TCP/IP. Physical layer: Analog and Digital Communication concepts; Copper Media; Fiber-Optic Media; Wireless Communications; Satellite Communication; Speed and Capacity of a communication channel; Network Hardware Components; Multiplexing; Switching; Dialup Networking.
Sep 2025	Analog Modem Concepts; DSL Service; Cable Modems; Leased lines; Home Networking Concepts. Data Link layer: Framing Techniques; Flow Control; Sliding Window Protocols; Error Control: Error Detection and Correction Methods; Medium Access Control: Random Access protocols; Token passing protocols; IEEE LAN Standards; Introduction to Wireless LANs.
Oct 2025	Network layer: Routing Algorithms: Flooding; Shortest path Routing; Distance-Vector Routing; Link-State Routing; Multicast Routing; Techniques for Congestion Control; Network Security Issues: Security Goals; Threat Assessment; Network Attacks; Encryption Methods.
Nov 2025	Symmetric and Asymmetric-Key Ciphers; Firewalls, Digital Signatures, Authentication and Access Control Methods: Digital Certificates, Smart Cards, Kerberos.

Govt College for Girls, Sec-14, Gurugram
Lesson Plan – July-Dec 2025

Class: BCA IIIrd Semester

Course Title: Object Oriented Programming using C++

Instructor: Dr. Pradeep Kumar Sharma

Scope & Objectives:

(i) To enable the student to understand the different programming paradigms and main emphasis will be on Object Oriented Paradigm.
(ii) To practice some real world problems using C++ to understand the Object Oriented Paradigm.

Text Books:

T1. "Object-Oriented Programming with C++" by E.Balagurusamy.

Reference Books:

R1. "Object Oriented Analysis & Design with Applications" by Grady Booch, Pearson Education.

R2. "Object-Oriented Programming in C++" by Robert Lafore, Techmedia.

R3. "The C++ Programming Language" by Bjarne Stroustrup, Pearson Education.

R4. "Mastering C++" by KR Venugopal, Rajkumar, T Ravishankar, Tata Mc Graw Hill.

R5. "C++: The Complete Reference" by Herbert Schildt.

Evaluation Scheme:

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

Internal Assessment:

S. No.	Component	Duration	Max. Marks	Date	Coverage
1.	Assignment-I	1 Week	10	Aug	Based on Unit –A
2.	Class Test-I	50 Min	10	Sept	Based on Section –A, B
3.	Assignment-II	1 Week	10	Oct	Based on Unit –C
4.	Class Test-I	50 Min	10	Nov	Based on Section – D

Contact Hours: 3 Hrs/Week

S.No.	Lectures	Topic to be covered	Text book
1.	1-2	Basic Elements of Programming, Console I/O Operations	T1
2.	3	Function: Function Prototyping, Call and Return By Reference	T1
3	4	Inline Function	T1
4.	5-7	Default and Const Arguments, Function Overloading, Arrays, Manipulators and Enumeration.	T1
5.	8-12	Basic Concepts/Characteristics of OOP. Advantages and Application of Oops, Procedural Programming Vs OOP.	T1
6.	13-15	Classes and Objects: Specifying a Class, Creating Objects, Private & Public Data Members and Member Functions, Defining Inline Member Functions	T1
7.	16-20	Static Data Members and Member Functions. Arrays within Class, Arrays of Objects, Objects as Function Arguments, Returning Objects.	T1
8.	21-22	Parameterized Constructors, Multiple Constructors in A Class, Constructors With Default Arguments	T1
9.	23-28	Dynamic Initialization of Objects, Copy Constructors, Dynamic Constructors, Const Objects	T1
10.	29-36	Operators Overloading: Definition, Unary and Binary Overloading, Rules for Operator Overloading.	T1
11.	37-40	Inheritance: Defining Derived Classes, Types of Inheritance, Constructors and Destructors in Derived Classes.	T1
12.	41-43	Pointer to Objects, This Pointer, “New” and “Delete”Operators, Virtual Function, Friend Functions.	T1
13.	44-48	Opening and 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.	T1

(Pradeep Kumar Sharma)

Govt. College for Girls , Sector-14, Gurugram

Name of the Assistant Professor : Mrs. Manjula Verma

Class : MCA 1st Sem

Subject & Code : OPERATING SYSTEM AND UNIX

Month	Syllabus
August	**Unit-I: Operating systems overview:** Operating systems as an extended machine & resource manager, Operating systems classification;
September	Operating systems and system calls; Operating systems architecture
	Unit-2: Process Management functions: Process model, hierarchies, and implementation
	process states and transit ions; multi-programming, multi-tasking, multi-threading;
	level of schedulers and scheduling algorithms
October	**Unit-3: Memory Management and Virtual Memory** : Logical versus Physical Address Space,
	Swapping, Contiguous Allocation, Paging,Segmentation,. Assignment-1
	Segmentation with Paging, Demand Paging, Performance of Demanding Paging,Page Replacement
	Page Replacement, Page Replacement Algorithm,Allocation of Frames, Thrashing Allocation of Frames, Thrashing. Test based on Unit 1 and Unit 2.
November	**Unit-4: Device Management** functions: I/O devices and controllers, interrupt handlers, ypes of I/O Software: Device independent I/O software, User-space I/O software,
December	**Unit-5 : Concurrent programming:** sequential and concurrent process; precedence graph, Bernstein's condition; time dependency and critical code section, mutual exclusion problem;
	classical process co- ordination problems; deadlock handling, inter-process communication**. Assignment-2**
	Unix Operating System: Overview of UNIX OS in general

Lesson Plan Session July 2025

Name: Sangeeta Bhatia

Class: MSC CS(Ist Sem)

Course code: CCA01

Course title: Data Base Management System

Aug 2025	Unit -1 Database system architecture: Data Abstraction, Data Independence, Data Definition Language (DDL), Data Manipulation Language (DML). Data models
Sep 2025	Entity-relationship model, network model, relational and object-oriented data models, integrity constraints, data manipulation operations. Unit-II Relational query languages: Relational algebra, Tuple and domain relational calculus, SQL3, DDL and DML constructs, Open source and Commercial DBMS - MYSQL, ORACLE, DB2, SQL server.
Oct 2025	Relational database design: Domain and data dependency, Armstrong's axioms, Normal forms, Dependency preservation, Lossless design. Query processing and optimization: Evaluation of relational algebra expressions, Query equivalence, Join strategies, Query optimization algorithms. Unit-III Transaction processing: Concurrency control, ACID property
Nov 2025	Serializability of scheduling, Locking and timestamp-based schedulers, Multi-version and optimistic Concurrency Control schemes, Database recovery. Storage strategies: Indices, B-trees, hashing. Unit-IV Database Security: Authentication, Authorization and access control, DAC, MAC and RBAC models, Intrusion detection, SQL injection. Advanced topics: Object-oriented and object-relational databases
Dec 2025	Logical databases, Web databases, Distributed databases, Data warehousing and data mining

Lesson Plan Session July 2025

Name: Dr. Rajesh Beniwal

Class: MCA-IIIrd sem

Course code: CCA07

Course title: Software Engineering

July 2025	UNIT-I Introduction: Software and its Characteristics, Evolving Role of Software, Software Product. Software Processes. Software Crisis. Software Engineering Evolution. Principles of Software Engineering. Programming-in-the-small vs. Programming-in-the-large
Aug 2025	Software Components. Software Engineering Processes. Software Life Cycle (SLC) Models: Water-Fall Model, Prototype Model. Spiral Model, Evolutionary Development Models, Iterative Enhancement Models, Object Oriented Models. UNIT-II Software Requirements: Functional and Non-Functional. User requirements. System requirements. Software Requirements Document -
Sep 2025	Requirement Engineering Process: Feasibility Studies. Requirement's elicitation and analysis, requirements validation, requirements management. Software Design: Basic Concept of Software Design. Architectural Design. Low Level Design: Modularization. Design Structure Charts. Flow Charts. Coupling and Cohesion Measures. UNIT-III Design Strategies: Function Oriented Design. Object Oriented Design. Top- Down and Bottom-Up Design. User Interface Design. Programming practices and Coding standards.
Oct 2025	Software Measurement and Metrics: Process Metrics. Project metrics. Estimation-LOC, Halstead's Software Science. Function Point (FP). Cyclomatic Complexity Measures: Software Project Estimation Models- Empirical. Putnam. COCOMO I & II. UNIT-IV Software Testing: Introduction. Verification vs. Validation. Software Reliability. Levels of Testing. Structural Testing (White Box Testing). Functional Testing (Black Box Testing). Software Maintenance: Need for Maintenance. Categories of Maintenance: Preventive. Corrective and Perfective Maintenance. Cost of Maintenance
Nov 2025	Software Re-Engineering. Reverse Engineering, Software Documentation.

Lesson Plan Session July 2025 (Ashok Kumar Class: M. Sc 1st Sem.)

Course code: DSE-01 DATA COMMUNICATION AND COMPUTER NETWORKS

July 2025:

Introduction to Computer Network: Types of Networks, Network Topologies, OSI and TCP/IPReference Models; Comparison of Models.

August 2025 :

Data Communications Concepts: Digital Vs. Analog communication; Parallel and Serial Communication; Synchronous, Asynchronous and Isochronous Communication modes: simplex, half duplex, full duplex; Multiplexing; Transmission media: Wired-Twisted pair, Coaxial cable, Optical Fiber, Wireless transmission: Terrestrial, Microwave, Satellite, Infra-red

September 2025:

Communication Switching Techniques: Circuit Switching, Message Switching, Packet Switching. Data Link Layer Fundamentals: Framing, Basics of Error Detection, Forward Error Correction, Cyclic Redundancy Check codes for Error Detection, Flow Control

October 2025:

Media Access Protocols: ALOHA, Carrier Sense Multiple Access (CSMA), CSMA with Collision Detection (CSMA/CD), Token Ring, Token Bus.

High-Speed LAN: Standard Ethernet, Fast Ethernet, Gigabit Ethernet, l0G; Wireless LANs: IEEE802.11, Bluetooth.

November 2025:

Network Layer: IP Addressing and Routing, Network Layer Protocols: 1Pv4 (Header Format andServices), ARP, ICMP (Error Reporting and Query message); 1Pv6 (Header Format and Addressing).

Transport Layer: Process-to-Process Delivery: UDP, TCP; Connection Management by TCP; Basicsof Congestion Control.

Application Layer: Domain Name System (DNS); SMTP; HTTP; WWW.

Network Security: Security Requirements and attacks; Cryptography: Symmetric Key (DES, AES), Public Key Cryptography (RSA); Firewall.

Lesson Plan Session July 2025

Name: Jyoti

Class: MCA II

Course code: CC-A08

Course title: Computer System Architecture

JULY 2025	Number System: Number System: Binary, Octal, Hexadecimal, and Decimal; 1's and 2's Complements; Interconversion of Numbers. Codes: Weighted and Non-weighted Codes, BCD Codes, Gray Codes, Self-complementing Codes, Error-Detecting /Correcting Codes, Alphanumeric Codes, Hamming Codes. Floating Point Numbers: Binary Arithmetic, Binary Addition and Subtraction, 2's Complement Arithmetic, Booth Coding, Binary Multiplication.
AUGUST 2025	Logic Design: Logic Gates, Truth Tables, Boolean Algebra, Boolean Expressions-Variables and Literals, Equivalent and Complement of Boolean Expressions, Theorems of Boolean Algebra, Simplification Techniques, SOPs & POSs of Boolean Expressions. Combinational Circuits: Combinational Logic, Arithmetic Circuits - Adder and Subtracter, BCD Adder, Code Converters, Magnitude Comparator, Parity Generators/Checkers, Multiplexers, Demultiplexers, Decoders, Encoders
SEPTEMBER 2025	.Sequential Circuits: Latches, RS Flip-Flop, Level-Triggered and Edge-Triggered Flip-Flops, JK FlipFlop, Master-Slave Flip-Flops, T Flip-Flop, D Flip-Flops Basic Computer Design: Computer Instructions and Types, Instruction Set, Instruction Cycle, Instruction Formats, Addressing Modes, Computer Registers, Bus System, Register Transfer Language Terminology. Programming in 8086/8088 Assembly Language: Assembly Language Program Structure, Segments, Registers, Instructions, Macros, Assembly Language Directives. CPU Design: CPU Registers, Micro-operations and Types, Design of ALU, Control Unit Design - Microprograms, Control Unit of a Basic Computer, Timing and Control: Hardwired and Microprogrammed Controlled Unit, Architectures - RISC, CISC, Scalar, Superscalar, and Pipelined Architectures.
OCTOBER 2025	Input/Output Organization: Peripheral Devices, Input-Output Interface, Asynchronous Data Transfer, Mode of Transfer, Priority Interrupt, Direct Memory Access, Input-Output Processor, Serial Communication. Advanced Architecture: Introduction to Parallel Processing - Pipelining, Parallel Computer Structures, Architectural Classification, Pipelining & Vector Processing; Instruction and Arithmetic Pipelines, Principles of Designing Pipelined Processors,
NOVEMBER 2025	Structures for Array Processors - SIMD Array Processor, SIMD Interconnection Networks, Parallel Processing Applications. Test & revision

Lesson Plan Session July2025

Name: Monika

Class: B.Sc Computer Science(1st Sem)

Course code: 240/CS /CC101

Course title: Computer Fundamental and Architecture

Aug 2025	Number Systems: Binary, Octal, Decimal and Hexadecimal, Conversions from one number system to another, BCD Codes, Error Detecting and Correcting Codes, Character Representation – ASCII, EBCDIC and Unicode, Binary Arithmetic; Binary Addition, Binary Subtraction, Binary Multiplication, Binary Division, Complementary numbering systems: 1's and 2's Complements representations, Fixed-Point and Floating-Point Representation of Numbers.
Sep 2025	Logic Gates: Basic Logic Gates – AND, OR, NOT, Universal Gates – NAND, NOR, Other Gates – XOR, XNOR etc. NAND, NOR. Their symbols, truth tables and Boolean expressions. Combinational Circuits: Design Procedures, 12 Half Adder, Full Adder, Half Subtractor, Full Subtracor, Multiplexers, Demultiplexers, Decoder, Encoder, Comparators, Code Converters.
Oct 2025	Boolean Algebra: Boolean Algebra Postulates, basic Boolean Theorems, Boolean Expressions, Boolean Functions, Truth Tables, Canonical Representation of Boolean Expressions: SOP and POS, Simplification of Boolean Expressions using Boolean Postulates & Theorems, Kaurnaugh-Maps (upto four variables), Tabular Method, Handling Don't Care conditions.
Nov 2025	Sequential Circuits: Basic Flip- Flops and their working. Synchronous and Asynchronous Flip –Flops, Triggering of Flip-Flops, Clocked RS, D Type, JK, T type and Master-Slave Flip-Flops. State Table, State Diagram and State Equations. Flip-flops characteristics & Excitation Tables. Designing Registers & Counters: Asynchronous and Synchronous Binary Ripple Counter, Binary Synchronous Counter, Modulo-N Counters and Up-Down Counters.

Month-wise Lesson Plan: Artificial Intelligence (Kuldeep Singh MSc Computer Science; Semester 3)

Duration: July – November (Odd Semester 2025)

Course Code: CC-A07 | Credits: 4 (3L + 1P) | Total Marks: 100

July

- Introduction to AI – History, definition, scope.
- Emulation of human cognitive process, knowledge search trade-off.
- Stored knowledge, semantic nets, abstract view of modelling, elementary knowledge.
- Basics of computational logic, compound statements, simple logic connectives.

August

- Predicate logic, knowledge organization and manipulation.
- Knowledge acquisition and representation techniques.
- LISP programming: introduction, syntax, numerical functions.
- Input/output, local variables, recursion in LISP.

September

- Distinction between LISP and PROLOG.
- Symbolic logics, inference methods, truth maintenance systems.
- Default reasoning, closed world assumption, model and temporal logic.
- Internal Assessment I (covering Unit I & II).

October

- Search methods: fuzzy logic, probabilistic reasoning, Bayesian inference, Dempster-Shafer theory.

- Knowledge representation: graphs, frames, OOP structures, object classes and simulation examples.
- Search and control strategies – uninformed/blind search, AND-OR graphs.
- Expert systems – Matching techniques, matching problems, fuzzy matching, RETE algorithm.

November

- Knowledge organization – indexing, retrieval, integration of knowledge in memory.
- Perception, communication in expert systems.
- Overview of linguistics, parsing, semantic analysis, natural language generation.
- Internal Assessment II (covering Unit III & IV), Final revision and Pre-University Test.

Practical / Lab Work (July–November)

Suggested experiments to be distributed across months:

- Writing simple facts & predicates in PROLOG
- Conversion problems & mathematical functions (factorial, Fibonacci)
- Monkey-Banana problem
- 4-Queen / 8-Queen problem
- Travelling Salesman problem
- Medical diagnosis system using Prolog
- Water jug problem
- Tic-tac-toe implementation
- Implementation of search algorithms (uninformed & informed)

Lesson Plan Session July 2025

Name: Dr. Namita

Class: B.Sc. 3rd Year

Course code: 5.2

Course title: Introduction to Internet & Web Technologies

July 2025	UNIT I Introduction to Internet, Benefits of Internet, WWW, Hardware and software requirement for internet, internet protocols, applications of internet, Internet Tools- Telnet, FTP,Gopher, Archie, Veronica, Mosaic, WAIS, IRC, Online Chatting, Messaging, and Conferencing Concepts, resources of internet.
Aug 2025	UNIT-II E-Mail mailing lists, Internet addressing, internet service provider (ISP), internet in India- Shell account, TCP/IP account, Home page and Web Site, internet accessing, internet terminology, internet security problems and solutions. Overview of Intranet and its applications, Web Browsers, Search Engines, Categories of Search Engines, Searching Criterion, Surfing the Net, Hypertext Transfer Protocol (HTTP), URL
Sep 2025	UNIT III HTML: Internet Language, Understanding HTML, Create a Web Page, Linking to other Web Pages, Publishing HTML Pages, Text Alignment and Lists, Text Formatting Fonts Control, E-mail Links and link within a Page, Creating HTML Forms.
Oct 2025	UNIT IV Creating Web Page Graphics, Putting Graphics on a Web Page, Custom Backgrounds and Colors, Creating Animated Graphics., W
Nov 2025	Web Page Design and layout, Advanced Layout with Tables, Using Style Sheets.

Govt College for Girls, Sec-14, Gurugram
Lesson Plan – July-Dec 2025

Class: BCA IIIrd 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 of process 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**

Internal Assessment:

S. No.	Component	Duration	Max. Marks	Date	Coverage
1.	Assignment-I	1 Week	10	Aug	Based on Unit –A
2.	Class Test-I	50 Min	10	Oct	Based on Section –A, B
3.	Assignment-II	1 Week	10	Oct	Based on Unit –C
4.	Class Test-I	50 Min	10	Nov	Based on Section – D

Contact Hours: 3 Hrs/Week

S.No.	Lectures	Topic to be covered	Text book
1.	1-3	Introductory Concepts: Operating System Functions and Characteristics, Historical Evolution of Operating Systems	T1
2.	4-6	Operating System Structure and Operations; Types of Operating System: Real time, Multiprogramming, Multiprocessing, Batch processing	T1
3	7-9	Operating System Services, Operating System Interface, Methodologies for Implementation of Operating System	T1
4.	10	Service System Calls, System Programs.	T1
5.	11-12	Process Management: Process Concepts, Operations on Processes,	T1
6.	13-14	Process States and Process Control Block.	T1
7.	15	Inter Process Communication	T1
8.	16-17	Multithreaded Programming: Multithreading Models, Threading Issues;	T1
9.	18-21	CPU Scheduling: Scheduling Criteria, Levels of Scheduling, Scheduling Algorithms, Multiple Processor Scheduling; Algorithm Evaluation.	T1
10.	22-23	Synchronization: Critical Section Problem, Peterson's Solution	T1
11.	24-25	Synchronization Hardware, Semaphores, Classical Problem of Synchronization,	T1
12.	26	Monitors, Atomic Transactions;	T1
13.	27-30	Deadlocks: Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection and Recovery.	T1
14	31-32	Memory Management Strategies: Memory Management of Single-User and Multiuser Operating System,	T1
15	33	Partitioning, Swapping,	T1
16	34-35	Contiguous Memory Allocation, Paging and Segmentation;	T1
17	36-38	Virtual Memory Management: Demand Paging, Page Replacement Algorithms,	T1
18	39	Thrashing, Memory Mapped Files.	T1
19	40-42	Distributed Operating Systems: Types of Network based Operating Systems, Network Structure, Design Issues;	T1

(Sangeeta Rani)

Lesson Plan Session July 2025

Name: POONAM

Class: BCA 5th Sem

Course code: BCA-302

Course title: **Computer Graphics**

July2025	Introduction to computer graphics, Basics of Graphics systems, Application areas of Computer Graphics, overview of graphics systems, video-display devices, and raster-scan systems, random scan systems
Aug 2025	graphics monitors and workstations and input devices. Output Primitives: Points and lines, line drawing algorithms, mid-point circle and ellipse algorithms. Filled area primitives: Scan line polygon fill algorithm, boundary fill and flood fill algorithms . Translation, scaling, rotation, reflection and shear transformations, matrix representations and homogeneous coordinates and test
Sep 2025	composite transforms, transformations between coordinate systems. 2-D Viewing: The viewing pipeline, viewing coordinate reference frame, window to view port coordinate transformation, viewing functions, Cohen-Sutherland and Cyrus-beck line clipping algorithms, Sutherland –Hodgeman polygon clipping algorithm.3-D Object Representation: Polygon surfaces, quadric surfaces, spline representation, Hermite curve, Bezier curve
Oct 2025	B-Spline curves, Bezier and B-Spline surfaces. Basic illumination models, polygon-rendering methods.3-D Geometric Transformations: Translation, rotation, scaling, reflection and shear transformations, composite transformations.
Nov 2025	3-D Viewing: Viewing pipeline, viewing coordinates, view volume and general projection transforms and clipping and revision

Lesson Plan Session July 2025

Name: Sarita Sheera

Class: MCA 1st Sem.

Course code: CC-A01

Course title: Computer Fundamentals and Programming in C

Aug 2025	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. System and Application Software.
Sep 2025	Overview of Operating System, Programming Languages: Machine. Assembly, High Level Language, 4GL. Language Translator, Linker and Loader. Problem Identification. Analysis, Algorithms, Flowcharts. Pseudo codes. Decision Tables. Program Coding. Program Testing and Execution.
Oct 2025	Keywords, Variables and Constants, Structure of a C program. Arithmetic, Unary, Logical. Bit-wise, Assignment & Conditional Operators. Decision making using if...else. Else If Ladder; Switch, break. Continue and Goto statements.
Nov 2025	Looping using while, do...while, for statements. Nested loops. Defining & Accessing User defined functions. Library Functions, Function Prototype, Passing Arguments, Passing array argument. Recursion, Use of Library Functions. Macro vs. Functions, Pointers in C.

GOVERNMENT COLLEGE FOR GIRLS,SEC-14, GURUGRAM
LESSON PLAN 2025-26 (ODD SEMESTER)

NAME OF THE TEACHER: Kiran Yadav **Department**: Computer Science
Class : MCA 1st Sem
Subject: Web Designing Fundamentals(241/MCA/DS101)

MONTH	DATE	TOPIC
AUGUST	01-02	Introduction to Internet and World Wide Web; Evolution and History of World Wide Web;
	04-09	Basic features; Web Browsers; Web Servers;
	11--16	Hypertext Transfer Protocol, Overview of TCP/IP and its services;
	18-23	URLs; Searching and Web-Casting Techniques;
	25-30	; Search Engines and Search Tools; Assignement-1
SEPTEMBER	01-06	Web Publishing: Hosting your Site; Internet Service Provider; Web terminologies
	8-13	Phases of Planning and designing your Web Site;
	15-20	Steps for developing your Site; Choosing the contents; Home Page;
	22-27	Domain Names, Front page views, Adding pictures, Links, Backgrounds, Relating Front Page to DHTML.
	29-30	Creating a Website and the Markup Languages (HTML, DHTML),Test-1
OCTOBER	01-04	Web Development: Introduction to HTML; Hypertext and HTML; HTML Document Features;
	6-11	HTML command Tags; Creating Links; Headers
	13-17	; Text styles; Text Structuring; Text colors and Background
	27-31	Formatting text; Page layouts,Revision & Assignment
NOVEMBER	01,3-8	Images; Ordered and Unordered lists; Inserting Graphics;
	10-15	Table Creation and Layouts; Frame Creation and Layouts; Working with Forms and Menus; ; Working with Radio Buttons; Check Boxes; Text Boxes; DHTML
	17-22	: Dynamic HTML, Features of DHTML, CSSP (cascading style sheet positioning) and JSSS (JavaScript assisted style sheet),
	24-30	Layers of netscape, The ID attributes, DHTML events,Revsion