Lesson Plan (Odd Semester)

Indira Gandhi National College, Ladwa

Name: RAJBIR	Class: B.A. I / B.Sc. 1st Year (Sem.-I)
Subject: COMPUTER SC.	PAPER I: Computer and Programming Fundamentals
SEMESTER: I	SESSION: 2022-23

Month	Topic / Chapter Covered	Other activities
September	Computer Fundamentals: Definition, Functional components of computer, characteristics & classification of computers, Applications of computers in various fields. Memory: Concept of primary & secondary memory, RAM, ROM, types of ROM, Cache memory, CPU Registers, Flash memory, Secondary storage devices: Sequential & direct access devices. Magnetic tape, Magnetic Disk, CD, DVD. I/O devices, definition of software, relationship between hardware and software.	
October	Types of software, motherboard, ports. Overview of operating system Definition, functions of operating system. Multiprogramming,multitasking, multithreading, multiprocessing, time-sharing, real time Single-user & multi-user operating system, examples of various operating systems. Planning the Computer Program: Concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming	Assignment-I Class Test Problems Discussion
November	Documentation. Techniques of Problem Solving: Flowcharting, algorithms. Pseudo code, Decision table. Structured programming concepts, Programming methodologies viz. top-down and bottom up programming. Searching, Sorting, and Merging: Linear & Binary Searching, Bubble, Selection, and Insertion Sorting,	Assignment-II Problems Discussion
December	Merging. Computer Languages: Analogy with natural language, machine language, assembly language, high-level language. language translators, characteristics of a good programming languages.	Revision & Problems discussion

Lesson Plan (Odd Semester)

Indira Gandhi National College, Ladwa

Name: MS. HARDEEP KAUR   Class: B.A. /B.Sc. I YEAR (Sem.-I)

Subject: COMPUTER SC.   PAPER II: PC-SOFTWARES

SEMESTER: I   SESSION: 2022-23

Month	Topic / Chapter Covered	Other activities
September	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, managing files and folders, Configuring System devices. Control panel. Using windows accessories.	Problems Discussion
October	Documentation Using Word - Introduction to Office Automation, Creating & Editing Document. Formatting Document, Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary. Page Formatting, Bookmatures of ark, Advance Features, MS-Word-Mail Merge, Macros. Tables, File Management, Printing, Styles, linking and embedding object.Presentation using PowerPoint: Presentations, Creating, Manipulating & Enhancing Slides	Assignment-I Class Test Problems Discussion
November	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. Electronic Spread Sheet using Excel - Introduction to MS-Excel, Creating & Editing Worksheet.	Assignment-II Problems Discussion
December	Formatting and Essential Operations, Formulas and Functions Charts, Advance features of MS-Excel-Pivot table & Pivot Chart, Linking and Consolidation. Database Management using Excel-Sorting, Filtering, Table, Validation, Goal Seek, Scenario.	Revision & Problems discussion

Month	Topic / Chapter Covered	Other activities
September	Introduction: Elementary data organization, Data Structure definition, Data type vs. data structure, Categories of data structures, Data structure operations, Applications of data structures, Algorithms complexity and time-space tradeoff, Big-O notation.Strings: Introduction, strings, String operations Pattern matching algorithms. Arrays: Introduction, Linear arrays, Representation of linear array in memory, Traversal, Insertions, Deletion in an array, Multidimensional arrays, Parallel arrays, Sparse matrix.	Problems Discussion
October	Linked List: Introduction, Array vs. linked list, Representation of linked lists in memory, Traversal, Insertion, Deletion. Searching in a linked list, Header linked list, Circular linked list, Two-way linked list, Garbage collection, Applications of linked lists. Algorithm of insertion/ deletion in SLL stack: primitive operation on stack, algorithms for push and pop. Representation of Stack as Linked List and array,	Assignment-I Class Test Problems Discussion
November	Stacks applications : polish notation, recursion. Introduction to queues, Primitive Operations on the Queues Circular queue, Priority queue, Representation of Queues as Linked List and array, Applications of queue. Algorithm on insertion and deletion in simple queue and circular queue. Trees - Basic Terminology, representation, Binary Trees.	Assignment-II Problems Discussion
December	Tree Representations using Array & Linked List, Basic operation on Binary tree, Traversal of binary trees:- In order, Preorder & post order, Applications of Binary tree. Algorithm of tree traversal with and without recursion. Introduction to graphs, Definition, Terminology, Directed, Undirected & Weighted graph, Representation of graphs	Revision & Problems discussion

Name: RAJBIR   Class: B.A. / B.Sc. II YEAR (Sem.-III)

Subject: COMPUTER SC.   PAPER II: SOFTWARE ENGINEERING

SEMESTER: III   SESSION: 2022-23

Month	Topic / Chapter Covered	Other activities
September	Introduction: Program vs. Software, Software Engineering, Programming paradigms, Software Crisis – problem and causes, Phases in Software development: Requirement Analysis, Software Design, Coding, Testing, Maintenance, Software Development Process Models: Waterfall, Prototype. Evolutionary and Spiral models, Role of Metrics	Problems Discussion
October	Feasibility Study, Software Requirement Analysis and Specifications: SRS. Need for SRS, Characteristics of an SRS, Components of an SRS, Problem Analysis. Information gathering tools, Organising and structuring information. Requirement specification, validation and metricsStructured Analysis and Tools: Data Flow Diagram, Data Dictionary	Assignment-I Class Test Problems Discussion
November	Decision table, Decision trees, Structured English. Entity-Relationship diagrams .Software Project Planning: Cost estimation: COCOMO model Project scheduling, Staffing and personnel planning, team structure, Software configuration management, Quality assurance plans, Project monitoring plans, **Risk Management.** Software testing strategies: unit testing, integration testing, V and V	Assignment-II Problems Discussion
December	System testing, Alpha and Beta testing. Black box, white box testing. Cyclomatic Complexity. Software Implementation and Maintenance: Type of maintenance Management of Maintenance, Maintenance Process maintenance characteristics.	Revision & Problems discussion

Name: RAJBIR	**Class:** B.A. / B.Sc III YEAR (Sem.-V)
Subject: COMPUTER SC.	**PAPER I:** FUNDAMENTALS OF DATABASE SYSTEMS
SEMESTER: V	**SESSION: 2022-23**

Month	Topic / Chapter Covered	Other activities
September	Basic Concepts – Data, Information, Records and files. Traditional file Based Approach-Limitations of Traditional File Based Approach. Database Approach-Characteristics of Database Approach, Database Management System (DBMS), Components of DBMS Environment, DBMS Functions and Components, Advantages and Disadvantages of DBMS.	Problems Discussion
October	Actors on the Scene - Data and Database Administrator, Database Designers, End users Applications Developers and Workers behind the Scene. Database System Architecture – Three Levels of Architecture, Schemas – External, Conceptual and Internal Level Database Languages – VDL, DDL, SDL, DML, SQL, Mappings – External/ Conceptual and Conceptual/Internal, Instances, Data Independence – Logical and Physical Data Independence. Data Models: High Level, Low Level and Representational – Records- based Data Models	Assignment-I Class Test Problems Discussion
November	Object-based Data Models, Physical Data Models and Conceptual Models Entity-Relationship Model – Concepts, Entity Types, Entity Sets Attributes, Relationships, Constraints, Keys , Degree, Cardinality etc. ER Diagrams of any Database Organization-Inventory System, Payroll System, Reservation System, Online Book Store etc. Classification of Database Management System, Centralized and Client Server Architecture Relational Data Model:-Brief History,	Assignment-II Problems Discussion
December	Terminology in Relational Data Structure, Relations, Properties of Relations. Keys – Primary, Secondary, Composite, Candidate, Alternate and Foreign Key, Domains, Integrity Constraints over Relations.	Revision & Problems discussion

Lesson Plan (Odd Semester)

Indira Gandhi National College, Ladwa

Name: MS. HARDEEP KAUR   **Class:** B.A. III YEAR (Sem.-V)

Subject: COMPUTER SC.   **PAPER II:** WEB DESIGNING

SEMESTER: V   **SESSION: 2022-23**

Month	Topic / Chapter Covered	Other activities
September	Introduction to Internet and World Wide Web; Evolution and History of World Wide Web. Basic Features; Web Browsers; Web Servers; Hypertext Transfer Protocol; URLs; Searching and Web-Casting Techniques; Search Engines and Search Tools	Problems Discussion
October	Steps for Developing Website; Choosing the Contents; Home Page; Domain Names; Internet Service Provider; Planning and Designing Web Site; Creating a Website; Web Publishing: Hosting Site; Introduction to HTML; Hypertext and HTML; HTML Document Features; HTML Tags; Header, Title, Body	Assignment-I Class Test Problems Discussion
November	Tags: Paragraph, Ordered/Unordered Line, Creating Links; Headers; Text Styles; Text Structuring; Text Colors and Background; Formatting Text; Page layouts. Insertion of Text, Movement of Text Images: Types of Images, Insertion of Image, Movement of Image,	Assignment-II Problems Discussion
December	Ordered and Unordered lists; Inserting Graphics; Table Handling Functions like Columns, Rows, Width, Colours; Frame Creation and Layouts; Working with Forms and Menus; Working with Buttons like Radio, Check Box;	Revision & Problems discussion