**Lesson Plan (April-July,2022)**

**Name of the Assistant Professor**- **Shama Subject- Computer Science**

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| **Month** | **B.Com(CAV) (II sem)**  **Programming in C** | **BCA (II Sem)**  **System Analysis and Design** | **BCA (VI Sem)**  **Computer Graphics** |
| April | History of C, Importance of C, Structure of a C Program.  Elements of C: C character set, identifiers and keywords, Data types, Constants and  Variables, Assignment statement, Symbolic constant.  Unformatted & formatted I/O function in C  Arithmetic, relational, logical, bitwise, unary, assignment, conditional operators and special operators. | System Concept: Definition, Characteristics, Elements of system  Types of System:  Physical and abstract system  Open and closed system  Man-made information systems.  System Development Life Cycle: Phases of system development  Feasibility study: Technical, Operational & Economic Feasibilities.  Role of system analyst | Introduction to Computer Graphics  Interactive and Passive Graphics; Applications of Computer Graphics  Display Devices: CRT  Random Scan ,Raster Scan,  Refresh Rate and Interlacing  Color CRT Monitor, DVST,  Flat-Panel Displays: Plasma Panel, LED, LCD; Lookup Table, Interactive Input Devices, Display Processor, General Purpose Graphics Software, Coordinate Representations |
| May | Arithmetic expressions, evaluation of arithmetic expression, type casting and conversion, operator hierarchy & associativity.  Decision making & branching: Decision making with IF statement, IF-ELSE statement,  Nested IF statement, ELSE-IF ladder, switch statement, goto statement. | System Planning: Bases for planning in system analysis.  Initial Investigation: Determining user’s requirements and analysis, fact finding process and techniques.  Tools of structured Analysis: Data Flow diagram, data dictionary, IPO and HIPO charts,  Gantt charts, pseudo codes, Flow charts, decision tree, decision tables. | Point-Plotting Techniques: Scan Conversion, Scan-Converting a Straight Line: The Symmetrical DDA, The Simple DDA, Bresenham’s Line Algorithm; Scan-Converting a Circle: Circle drawing using Polar Coordinates, Bresenham’s Circle Algorithm, Scan-Converting an Ellipse: Polynomial Method, Trigonometric Method; Polygon Area Filling: Scan-line Fill and Flood Fill Algorithms |
| June | Decision making & looping: For, while, and do-while loop, jumps in loops, break, continue statement. Functions: Definition, prototype, passing parameters, recursion.  Storage classes in C: auto, extern, register and static storage class, their scope, storage, &lifetime | Cost/Benefit Analysis: Data analysis cost and benefit analysis of a system.  Input/ Output and Form Design, File Organization and database design:  Introduction to files and database, File structures and organization, objectives of database design, logical and physical view of data. | Two-Dimensional Graphics Transformation: Basic Transformations: Translation, Rotation, Scaling; Matrix Representations  Homogeneous Coordinates; Other Transformations: Reflection, Shearing, Coordinate , Composite Inverse; Affine; Raster  Graphical Input: Pointing and Positioning Devices and Technique |
| July | Arrays: Definition, types, initialization, processing an array  passing arrays to Functions, Strings & arrays.  Structure and unions, data file | System testing: Introduction, objectives of testing, test planning, testing techniques.  Quality assurance: Goal of quality assurance, levels of quality assurance  System implementation and software maintenance: primary activities in maintenance | Two-Dimensional Viewing: Window and Viewport, 2-D Viewing Transformation Clipping: Cohen-Sutherland Line Clipping Algorithm, Mid-Point Subdivision Line Clipping Algorithm; Polygon Clipping: Sutherland- Hodgman Polygon Clipping Algorithm; Three-Dimensional Graphics: Three-Dimensional Display Methods;  3-D Transformations: Translation, Rotation, Scaling |

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| **Subject/Month** | **April** | **May** | **June** | **July** |
| **BCA**  **(IV Sem)**  **RDBMS** | Relational Model Concepts, Codd's Rules for Relational Model, Functional Dependencies and Normalization:-Purpose, Data Redundancy and Update Anomalies  Functional Dependencies:-Full Functional Dependencies and Transitive Decomposition and Normal Forms (1NF, 2NF, 3NF & BCNF). | Relational Algebra:-Selection and Projection, Set Operation, Renaming, Join and Division,  Relational Calculus: Tuple Relational Calculus and Domain Relational Calculus. | SQL: Data Definition and data types, SQL Operators, Specifying Constraints in SQL, Basic DDL, DML and DCL commands in SQL, Simple Queries  Nested Queries, Tables, Views, Indexes, Aggregate Functions, Clauses | PL/SQL architecture, PL/SQL and SQL\*Plus, PL/SQL Basics, Advantages of PL/SQL, The Generic PL/SQL Block: PL/SQL Execution Environment, PL/SQL Character set and Data Types, Control Structure in PL/SQL, Cursors in PL/SQL, Triggers in PL/SQL, Programming using PL/SQL |