**Lesson Plan**

**BCA III (6thSem)**

**Subject: Computer Graphics**

**Month : February**

Introduction to Computer Graphics; Interactive and Passive Graphics; Applications of Computer Graphics; Display Devices: CRT; Random Scan, Raster Scan, Refresh Rate and Interlacing, Bit Planes, Color Depth, Color Palette, Color CRT Monitor, DVST, Flat-Panel Displays: Plasma Panel, LED, LCD; Lookup Table, 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,

**March**

Scan-Converting an Ellipse: Polynomial Method, Trigonometric Method; Polygon Area Filling: Scan-line Fill and Flood Fill Algorithms; Two-Dimensional Graphics Transformation: Basic Transformations: Translation, Rotation, Scaling; Matrix Representations and Homogeneous Coordinates; Other Transformations: Reflection, Shearing; Coordinate Transformations; Composite Transformations; Inverse Transformation; Affine Transformations; Raster Transformation.

**April**

Two-Dimensional Viewing: Window and Viewport, 2-D Viewing Transformation Clipping: Point Clipping; Line Clipping: Cohen-Sutherland Line Clipping Algorithm, Mid-Point Subdivision Line Clipping Algorithm; Polygon Clipping: Sutherland-Hodgman Polygon Clipping Algorithm.

**May**

Three-Dimensional Graphics: Three-Dimensional Display Methods; 3-D Transformations: Translation, Rotation, Scaling; Composite Transformations;Display Processor, General Purpose Graphics Software, Coordinate Representations;Graphical Input: Pointing and Positioning Devices and Techniques

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**Lesson Plan**

**BCA II**

**BCA – 246 MANAGEMENT INFORMATION SYSTEM**

**Month : February**

Introduction to system and Basic System Concepts, Types of Systems, The Systems Approach, Information System: Definition & Characteristics, Types of information, Role of Information in DecisionMaking, Sub-Systems of an Information system: EDP and MIS management levels, EDP/MIS/DSS.

**March**

An overview of Management Information System: Definition & Characteristics, Components of MIS, Frame Work for Understanding MIS: Information requirements & Levels of Management, Simon's Model of decision-Making, Structured Vs Un-structured decisions, Formal vs. Informal systems.

**April**

Developing Information Systems: Analysis & Design of Information Systems: Implementation & Evaluation, Pitfalls in MIS Development.Functional MIS: A Study of Personnel, Financial and production MIS, Introduction to e-business systems.

**May**

ecommerce – technologies, applications, Decision support systems – support systems for planning, control and decision-making.

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**Lesson Plan**

**B.Sc Computer Science (3rd Sem)**

**PAPER I: Object Oriented Programming with C++**

**Month : February**

Object oriented Programming: Object-Oriented programming features and benefits. Object-Oriented features of C++, Class and Objects, Data Hiding & Encapsulation, Structures, Data members and Member functions, Scope resolution operator and its significance, Static Data Members, Static member functions, Nested and Local Class, Accessing Members of Class and Structure.

**March**

Constructor, Initialization using constructor, types of constructor– Default, Parameterized & Copy Constructors, Constructor overloading, Default Values to Parameters, Destructors, Friend Function, Friend Class, Arrays, Array of Objects, Passing and Returning Objects to Functions, Pointers, new and delete Operator, Array of Pointers to Objects, this Pointer, Passing Parameters to Functions by Reference & pointers.

**April**

Static Polymorphism: Operators in C++, Precedence and Associativity Rules, Operator Overloading, Unary & Binary Operators Overloading, Function Overloading, Inline Functions, Merits/Demerits of Static Polymorphism. Manipulators,

**May**

Console I/O: Hierarchy of Console Stream Classes, Unformatted and Formatted I/O Operations.

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**Lesson Plan**

**B.Sc Computer Science (1st Sem)**

**PAPER I: Programming in C**

**Month : February**

Overview of C: History & 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. Input/output: Unformatted & formatted I/O function, Input functions (scanf(), getch(), getche(), getchar(), gets()), output functions (printf(), putch(), putchar(), puts()).

Operators & Expression: Arithmetic, relational, logical, bitwise, unary, assignment, conditional operators and special operators. Arithmetic expressions, evaluation of arithmetic expression, type casting and conversion, operator hierarchy & associativity.

**March**

Decision making & branching: Decision making with IF statement, IF-ELSE statement, Nested IF statement, ELSE-IF ladder, switch statement, goto statement.

Decision making & looping: For, while, and do-while loop, jumps in loops, break, continue statement.

**April**

Functions: Definition, prototype, passing parameters, recursion. Arrays: Definition, types, initialization, processing an array. Structure and Union.

**May**

Storage classes in C: auto, extern, register and static storage class, their scope, storage, & lifetime.

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