**COMPUTER SCIENCE**

**MID – 1 SYLLABUS**

 **B.SC. COMPUTER SCIENCE**

**SEMESTER – I**

**COMPUTER FUNDAMENTALS AND PHOTOSHOP**

**UNIT-I:**

Introduction to computers: Characteristics and limitations of computer, Block diagram of computer, types of computers, uses of computers, computer generations. Number systems: working with binary, octal, decimal and Hexa decimal numbering system.

 **UNIT-II:**

Input and Output devices: Keyboard and mouse, inputting data in other ways, Pointing Devices, Handheld Devices, Optical Devices, Audio-Visual Input Devices.Output Devices: Monitors, Projectors, Speakers, Printers, Plotters. Types of Software: system software, Application software, commercial, open source, domain and free ware software. Memories: Primary, Secondary and cache memory. Secondary Storage Devices: Magnetic Tapes, Floppy Disks, Hard Disks. Windows basics: Start menu, icons, MSWindows-Desktop, My Computer, My Documents, Pictures, Music, Videos, Recycle Bin, and Task Bar - Control Panel.

 **Unit –III**

**Introduction to Adobe photoshop**: Getting started with photoshop, creating and saving a document in photoshop, page layout and back ground.

**SEMESTER - III**

**OBJECT ORIENTED PROGRAMMING USING JAVA**

**UNIT-I:**

**FUNDAMENTALS OF OBJECT – ORIENTED PROGRAMMING:** Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Application’s of OOP. OVERVIEW OF JAVA LANGUAGE: Introduction, java features Simple Java program structure, difference between C, C++ and java, java and internet, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments. CONSTANTS, VARIABLES & DATA TYPES: Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Symbolic Constants, Type casting, Getting Value of Variables, Standard Default values;

**UNIT-II:**

**OPERATORS AND EXPRESSIONS :** Arithmetic operators Relational operators, logical operators, Assignment operators, Increment and decrement operators, Conditional operators, Bitwise operators, Special operators, Arithmetic operators, Precedence of Arithmetic operators. DECISION MAKING & BRANCHING: Introduction, Decision making with if statement, Simple if statement, if Else statement, Nesting of if else statements, the else if ladder, the switch statement, the conditional operator. DECISION MAKING & LOOPING: Introduction, The While statement, the do-while statement, the for statement, Jumps in loops. CLASSES, OBJECTS & METHODS: Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods, visibility controls.

**UNIT-III**

**INHERITANCE:** inheritance and types of inheritances, Extending a class, Overloading methods, Final variables and methods, Final classes, Abstract methods and classes.

**SEMESTER – V**

**Paper-V: Data Base Management System**

**UNIT I**

**Overview of Database Management System:**

 Introduction, file-based system, Drawbacks of file-Based System ,Data and information, Database, Database management System, Objectives of DBMS, Evaluation of Database management System, Classification of Database Management System, DBMS Approach, advantages of DBMS, data models, Components and Interfaces of Database Management System. Database Architecture, Situations where DBMS is not Necessary.

 **UNIT II**

**Entity-Relationship Model**: Introduction, the building blocks of an entity relationship diagram, classification of entity sets, attribute classification, relationship degree, relationship classification, reducing ER diagram to tables, enhanced entity-relationship model (EER model), generalization and specialization, IS A relationship and attribute inheritance, multiple inheritance, constraints on specialization and generalization, aggregation and composition, entity clusters, connection types, advantages of ER modelling.

**UNIT III**

 **Relational Model:** Introduction, CODD Rules, relational data model, concept of key, relational integrity,

**III YEAR V SEMESTER**

**Paper VI : Software Engineering**

**UNIT I**

INTRODUCTION: Software Engineering Process paradigms - Project management -

Process and Project Metrics – software estimation - Empirical estimation models - Planning -

Risk analysis - Software project scheduling.

**UNIT II**

REQUIREMENTS ANALYSIS : Requirement Engineering Processes – Feasibility Study –

Problem of Requirements – Software Requirement Analysis – Analysis Concepts and

Principles – Analysis Process – Analysis Model

**UNIT III**

**SOFTWARE DESIGN:** Software design - Abstraction - Modularity - Software Architecture