**Department of Computer Science**

**Class: BCA III**

**Subject: Advanced Programming using Visual Basic**

**April(Unit 1)**

Collections: Adding, Removing, Counting, Returning Items in a Collection, processing a Collection; Working with Forms: Form Properties, Creating, Adding, Removing Forms in Project, Adding Multiple Forms, Managing Forms at Run Time, Hiding & Showing Forms, Load & Unload Statements, Drag and Drop Operation, Activate & Deactivate events, Form-load event, Example using Forms, Programs in VB using Forms

**May(Unit II)**

Working with Menu: Menu Designing in VB, adding a Menu to a Form, Modifying and Deleting Menu Items, Adding Access Characters, Adding Shortcut Keys, Manipulating Menus using Common Dialog Box, Attaching Code to Events, Creating Submenus, Dynamic Menu Appearance Advanced Controls in VB: Scroll Bar, Slider Control, Tree View, List View, Rich Text Box Control, Toolbar, Status Bar, Progress Bar, Cool bar, Image List Program Development in VB using Menus and Advance Controls

**June(Unit III)**

File Handling & File Controls: Sequential & Random files, Opening and Closing Data Files, Viewing the Data in a File, Performing Operations on a File, Creating a Sequential Data File, Writing Data to a Sequential File, Reading the Data in a Sequential File, Finding the End of a Data File, Locating a File, Reading and Writing a Random File (get, put, LOF, seek). Working with Graphics: Using Paint, Line, Circle, Manipulating Graphics Program Development in VB using Files and Graphics

**July(Unit IV)**

Accessing Databases: Data Controls, Data-Bound Controls, DAO, RDO, ADO, Creating the Database, Setting Properties, Applying Operations on Database, Viewing the Database, Updating the Database (adding, deleting records) Program Development in VB using Database and Advance Controls

**Department of Computer Science**

**Class: BCA II**

**Subject: Advanced Programming using C++**

**April(Unit 1)**

Dynamic Polymorphism: Function Overriding, Virtual Function and its Need, Pure Virtual Function, Abstract Class, Virtual Derivation, Virtual Destructor.

**May(Unit II)**

Type Conversion: Basic Type Conversion, Conversion between objects and basic types, Conversion between objects of different classes, Inheritance: Rules of Derivations – Private, Protected and Public Derivations.

**June(Unit III)**

Different Forms of Inheritance – Single, Multiple, Multilevel, Hierarchical and Multipath Inheritance Roles of Constructors and Destructors in Inheritance, Genericity in C++: Templates in C++, Function templates.

**July(Unit IV)**

Class templates in C++, Exception Handling in C++: try, throw and catch, Files I/O in C++: Class Hierarchy for Files I/O, Text versus Binary Files, Opening and Closing Files, File Pointers, Operation on files.

**Department of Computer Science**

**Class: BCA III**

**Subject: Programming in Java**

**April(Unit 1)**

Basic Principles of Object Oriented Programming, Introduction to Java, History and Features of Java, Java Virtual Machine (JVM), Java’s Magic Bytecode; The Java Runtime Environment; Basic Language Elements: Lexical Tokens, Identifiers, Keywords, Literals, Comments, Primitive Data types, Operators, Assignments; Input/output in Java: Basics, I/O Classes, Reading Console Input, Control Structures in Java: Decision and Loop Control Statements

**May(Unit II)**

Class and Object in Java: Defining Class in Java, Creating Objects of a Class, Defining Methods, Argument Passing Mechanism, Using Class and Objects, Constructors, Nested Class, Inner Class, Abstract Class, Dealing with Static Members; Array & String in Java: Defining an Array, Initializing & Accessing Array, Multi –Dimensional Array, Defining String, Operation on Array and String, Creating Strings using String Class, Creating Strings using StringBuffer Class,; Polymorphism in Java: Basic Concept, Types, Overriding vs. Overloading, Implementation

**June(Unit III)**

Extending Classes and Inheritance in Java: Benefits of Inheritance, Types of Inheritance in Java, Access Attributes, Inheriting Data Members and Methods, Role of Constructors in Inheritance, Use of “super”; Packages & Interfaces: Basic Concepts of Package and Interface, Organizing Classes and Interfaces in Packages, Defining Package, Adding Classes from a Package to Your Program, CLASSPATH Setting for Packages, Import Package, Naming Convention For Packages , Access Protection in Packages, Standard Packages

**July(Unit IV)**

Exception Handling in Java: The Idea behind Exception, Types of Exception, Use of try, catch, finally, throw, throws in Exception Handling, In-built and User Defined Exceptions, Checked and Un-Checked Exceptions, Catching more than one Exception; Applet in Java: Applet Basics, Applet Architecture, Applet Life Cycle, Applet Tag, Parameters to Applet, Embedding Applets in Web page, Creating Simple Applets; GUI Programming: Designing Graphical User Interfaces in Java, Components and Containers, Using Containers, Layout Managers, AWT Components, AWT Classes, AWT Controls,

**Department of Computer Science**

**Class: B.COM(Hons)**

**Subject: E-commerce**

**April(Unit 1)**

Introduction to internet: concept, application and uses of Internet, Internet services.

**May(Unit II)**

Information Technology and Business: concepts of data, information and information system, effects of IT on business; Types of information system: Transaction Processing System (TPS), Management Information System (MIS).

**June(Unit III)**

Introduction to E-commerce; e-commerce and world wide web; e-commerce application services; ecommerce models: B2B, B2C, C2C; electronic data interchange: benefits, components of EDI, EDI implementation, security issues in e-commerce.

**July(Unit IV)**

M-commerce and e-governance: an overview