

BACHELOR OF COMPUTER APPLICATION (BCA) – SIXTH SEMESTER

Sixth Semester			
S. No.	Name of Subject	Credits	Total Marks
1	Visual Basic	5	100
2	Computer Graphics	5	100
3	Software Engineering	5	100
4	Project	5	100
Total		20	

Subject Name: VISUAL BASIC

- 1. Introduction to Visual Basics:** Object-Oriented Programming (OOP), What Is the Visual Basic ?, Visual Basic Application, Introduction to Visual Basic , Event-Driven Programming, Integrated Development Environment(IDE), Toolbox, Form Layout Window, Properties Window, Menu Bar, Immediate Window, Creating the interface, Resizing, Moving , and Locking Controls, To Lock all Control Positions, To Adjust the Position of Locked Controls, Setting Properties, Designing a form, Saving the Project, Working with Multiple Projects, Merging Text, Using Wizard and Add-Ins, Using Wizards, Making and Running an Executable File Adding Controls, OLE, Command Button.
- 2. Data Types in Visual Basics:** Data Type, Operator, Precedence of Operators, Arrays.
- 3. Controls Statements in Visual Basic:** Introduction to Control Statements, Decision Structures or Selection Statements, More Worked Out Programming Examples.
- 4. Standards Library Functions in Visual Basics:** Introduction, Characters and Strings, String Data Types, Concatenation of Strings, Concatenation Operator (& Operator), Arithmetic Operators, String Functions, Numeric Functions, Date, Time and Now Functions, Date Arithmetic Functions (Date Add,, Data Diff), Data Type Functions, Arithmetic Functions, Remainder.
- 5. Visual Basic Forms, Procedures and Functions:** Introduction, to Forms, Single Documents Interface (SDI), Multiple Document Interface (MDI), Managing Projects, Using Procedures and Functions, Procedures, Calling Sub Procedures, Calling Function Procedures, Passing Arguments to Procedures, Using Optional Arguments.

Subject Name: COMPUTER GRAPHICS

- 1.** Keyboard, Touch Panel, Light pens, Graphic tablets, Joysticks, Touch balls, Image scanner, Mouse, Handy copy device:-Zero impact and Non-Impact printers, Dot matrix, Laser printer, Inkjet printer, Dectrostate, Flatted and drum plotters. Video display devise:-Cathode Rey tube, Resistance, Resolution ,Aspect ratio vertical and horizontal ,Color CRT monitors, Direct view storage tube, Flat panel displays, LCD Virtual reality, Faster scan system, Random scan system. Memory device:-Memory (RAM, ROM), CD, Floppy disk, Magnetic tapes, Magnetic disks.

2. Scan conversion algorithm for line (DDA & Bresenham's algorithm) ,Midpoint circle ,Circle & ellipse, Midpoint ellipse, Midpoint ellipse ,Bresenham's algorithm ,Area filling techniques, Scan line polygene fill, Boundary fill character generation.2-dimensional Graphics: Cartesian & Homogeneous coordinate system, Geometric transformations, Affine transformation (Translation, Scaling ,Rotation, Reflection, Shearing),Composite transformation ,Affine Viewing pipeline, Two dimensional viewing transformation and clipping(Line, Polygon and Text).
3. Three Dimensional Graphics:-Geometric transformation (Translation, Scaling, rotation, reflection, shearing), Composite transformations, Mathematics of projections (parallel & perspective), View pipeline, 3D viewing transformations and clipping (normalized view volumes, view port, clipping).
4. Hidden line and surface elimination algorithms, Z-buffer, Scan-line, Sub-division, and Painter's algorithm. Illumination Models: Diffuse reflection, specular reflection, refracted light, Texture surface patterns, half toning, dithering. Surface rendering methods: Constant intensity method, Gourmand shading, Hong shading. Color Model: Introduction to RGB, CMY & HSV color models.

Subject Name: SOFTWARE ENGINEERING

1. The Software Problem
2. Software Process
3. Software Requirements Analysis and Specification
4. Software Architecture
5. Planning a software project
6. Design
7. Coding and Unit Testing
8. Testing

Subject Name: PROJECT

Note: The Normal Rule and Regulation pertaining to the Examination and other issues will be applicable in Faculty of Commerce & Management as per Arunachal University of Studies Act 2012, Subsequent Statute and Rules & Regulations.