SYLLABUS FOR BACHELOR IN COMPUTER APPLICATION (BCA)

FIRST YEAR

First year courses shall consist of Nine papers each of three hours duration with maximum 100 marks. 20% marks is internal assessment.

Paper	Subject	Marks
Paper – 1	Computer Fundamentals and Operating Systems	80+20
Paper – 2	Office Automation	80+20
Paper – 3	Program Development Concept & Technique And FoxPro	80+20
Paper – 4	'C' with Data Structure	80+20
Paper – 5	Functional English	80+20
Paper – 6	~~Foundation Course in Computer Based Mathematics~~ Mathematics – I	80+20
Paper – 7	LAB-I (Operating System: DOS & Windows), 50 marks (MS-Office : Word, Excel, Powerpoint), 50 marks	100
Paper – 8	LAB-II (C Language), 50 marks (FoxPro), 50 marks	100
Paper – 9	PROJECT	100

TOTAL MARKS : 900

SYLLABUS FOR BACHELOR IN COMPUTER APPLICATION (BCA)

SECOND YEAR

Second year courses shall consist of Nine papers each of three hours duration with maximum 100 marks. 20% marks is internal assessment.

Paper	Subject	Marks
Paper – 1	OOPs with C++	80+20
Paper – 2	DBMS, RDBMS & SQL	80+20
Paper – 3	Data Communication and Networking	80+20
Paper – 4	Internet & Web Technology	80+20
Paper – 5	Visual Basic	80+20
Paper – 6	Computer Organization and SSAD	80+20
Paper – 7	LAB-I (OOPs : C++)	100
Paper – 8	LAB-II (Web Tech.: HTML,DHTML,JavaScript) 50 marks (Visual Basic) 50 marks	100
Paper – 9	PROJECT	100
	TOTAL MARKS :	900

SYLLABUS FOR BACHELOR IN COMPUTER APPLICATION (BCA)

THIRD YEAR

Third year courses shall consist of Nine papers each of three hours duration with maximum 100 marks. 20% marks is internal assessment.

Paper	Subject	Marks
Paper – 1	ORACLE & Developper 2000.	80+20
Paper – 2	Multiuser Operating System (UNIX / LINUX).	80+20
Paper – 3	Mathematics – II ~~Computer Based Numerical & Optimization Technique~~.	80+20
Paper – 4	Advanced Computer Programming Using JAVA	80+20
Paper – 5	Management Information System	80+20
Paper – 6	Computer Oriented Accounting Systems	80+20
Paper – 7	LAB-I (Oracle: SQL & PL/SQL), 50 marks (UNIX / LINUX), 50 marks	100
Paper – 8	LAB-II (JAVA Programming)	100
Paper – 9	PROJECT	100
	TOTAL MARKS :	900

FIRST YEAR

PAPER-1 : COMPUTER FUNDAMENTALS AND OPERATING SYSTEMS

a. **Fundamentals (marks: 50)**
   - i. Introduction to computers
   - ii. Units of computers
   - iii. Memory
   - iv. Software
   - v. Categories of Computers
   - vi. Miscellaneous (internet, virus & multimedia concepts)

b. Operating Systems
   - **i. DOS (marks: 25)**
     1. Introduction to operating system
     2. Internal commands
     3. External commands
     4. Redirection, pipes and filters
     5. Batch processing
   - **ii. WINDOWS (marks: 25)**
     1. Introduction to windows
     2. Components of windows
     3. Customizing the desktop
     4. Working with files and folders
     5. Windows accessories

PAPER-2 : OFFICE AUTOMATION

a. **Ms-Word (marks: 40)**
   - i. Introduction to Office automation
   - ii. Editing document
   - iii. Formatting document
   - iv. Word tools
   - v. Page Formatting
   - vi. Tables
   - vii. File management
   - viii. Miscellaneous(wizard, templates, etc.)

b. Ms-Excel (marks: 40)
   i. Introduction to Ms-Excel
   ii. Editing worksheet
   iii. Formatting & Essential Operations
   iv. Formulas and Functions
   v. Charts
   vi. Database management
   vii. What-if-analysis tools and modeling technique
   viii. Automating Worksheet
c. [illegible] (marks: 25)
   i. Introduction to PowerPoint
   ii. Manipulating & Enhancing Slides
   iii. Slide Masters, Templates & Wizard
   iv. Inserting Objects
   v. Animation & Sounds

PAPET-3: PROGRAM DEVELOPMENT CONCEPT & TECH. AND FoxPro.

a. PROGRAMMING LOGIC AND TECHNIQUE (marks: 50)
   i. introduction to programming
   ii. Flowchart and algorithms
   iii. Programming Technique and Pseudocodes
   iv. Structured programming
   v. Programming Aids.

b. FoxPro (marks: 50)
   a. Introduction to FoxPro
   b. Creating Database files
   c. Viewing and Editing data
   d. Sorting and Indexing
   e. Functions and Math commands
   f. Multiple File handling
   g. Memory variables and dimensions
   h. Programming
   i. Screen Manipulation (Controls & Menu)
   j. Procedures & UDF
   k. Report, Label & Screen

PAPER-4 : C with Data Structure (marks: 100)

a. Introduction to C
b. Elements of C language
c. Control Statements and loops in C
d. Array
e. Functions and Storage class
f. Pointers
g. Structure and Union
h. Data Structures
    1. Linked list (single, doubly and circular)
    2. Stack operations.
    3. Queues Operations
    4. Concept of Tree
i. Enum, typedef and C preprocessor
j. Files
k. Introduction to Graphics

PAPER-5 : FUNCTIONAL ENGLISH (marks: 100)

a. Written communication skill
    i. Integral elements of writing: features and sub skills
    ii. Paragraph writing
    iii. Trans coding information
    iv. Latter writing
    v. Report writing
b. Oral communication skills
    i. Components of speech event
    ii. Types of speech acts

c. Skills of studying information
    i. Note taking
    ii. Consulting reference materials
    iii. Classifying information
    iv. Indexing information
    v. Interpreting information

BCA Annexure-K-I

Detail of revised Syllabus of Paper 6 Mathematics -1 and Paper-3 Mathematics-II of BCA Examination (Two be effective from the academic session 2009-10)

BCA

(1st Year)

Paper-6 Mathematics-I 80+20

a. Number bases.

b. Computer based arithmetic.

c. Floating point representation

d. Set notation / representation

e. Boolean algebra: basic definition, theorems & Properties, Functions, Canonical, and Standard forms, Function simplification, Digital logic gates.

f. Relation: Definition, Domain & range of a relation, Inverse of a relation, Relation in a set, Equivalence relation. Functions, Different types of functions.

g. Linear Algebra: Matrices, vector spaces, linear dependents and independents, Gauss elimination method, rank of a matrix, Consistent and inconsistent System of equation. Determinants up to order three, Minors & Cofactors, Properties of determinants, Cramer's rule.

h. Permutations & combinations: Counting Principle, Permutations and combinations (With and without repetition) Binomial theorem for any rational index, positive integral index and identifies involving binomial coefficients.

SECOND YEAR

PAPER- 1: COPs WITH C++ (marks: 100)

1. Introduction to OOPs
2. Elements of C++
3. Control Structure of C++
4. Array and Function in C++
5. Structure and Enumerated data types
6. Class and Objects
7. Constructor and Destructor
8. Inheritance
9. Operator overloading
10. Pointers
11. Runtime Polymorphism
12. Stream and Files

PAPER- 2: DBMS, RDBMS & SQL (marks: 100)

1. Overview of database management system
2. Traditional models
3. Functional dependencies and Normalization, multivalued dependencies
4. Introduction to SQL
5. Database design
6. Issue of Physical design

PAPER- 3: DATA COMMUNICATION AND NETWORKING (marks: 100)

a) *DATA COMMUNICATION AND NETWORKING*
   i) Computer and Communication
   ii) Communication media
   iii) Modem and Modulation
   iv) Networking of Computers

b) *NETWORKING OPERATING SYSTEM*
   i) Introduction to Networking Operating System
   ii) Characteristic features of Windows NT server
   iii) Anatomy & Components of NT server
   iv) Networking & Security

PAPER- 4: WEB TECHNOLOGY (marks: 100)

a) Internet Basics
b) HTML: Introduction, Adding images, Forms & Tables, Hyperlinks, Frames
c) DHTML: Introduction. Style Sheets and Scripts
d) JavaScript Basics

PAPER- 5: VISUAL BASIC (marks: 100)

a) Introduction to VB
b) Windows, tools and common windows control
c) Element of user interface
d) A few common properties & Methods
e) Using VB as language
f) Events
g) Procedures and Functions
h) Menus and dialog boxes
i) MDI forms, File I/O
j) Managing Database
k) Introduction to COM (Component Object Models)

PAPER- 6: COMPUTER ORGANIZATION AND SSAD (marks: 100)

a) *Computer Organization & Architecture*
   i) Combinational and Sequential Circuits
   ii) Memory organization
   iii) Instruction Format, Addressing Methods
   iv) I/O system interrupts
b) *Structured system analysis and design (SSAD)*
   i) Introduction to SSAD
   ii) System Development Life Cycle
   iii) Principles of successful system development
   iv) DFA/data dictionary decision table / pseudocode
   v) Normalization
   vi) Elements of Design
   vii) Design of files, design of input
   viii) System implementation & maintenance

PAPER- 7: LAB- I (marks: 100)

a) OOPs: C++

PAPER- 8: LAB –II (marks: 100)

a) Web Tech.: HTML, DHTML, Java Script (marks: 50)
b) Visual Basic (marks: 50)

PAPER- 9: PROJECT (marks: 100)

- Second Year Total Marks: 900

THIRD YEAR

PAPER- 1: ORACLE & DEVELOPPER 2000 (marks: 100)

a) SQL
- i) Introduction to managing data
- ii) SQL interactive commands
- iii) Database objects
- iv) SQL* Plus report

b) PL/SQL
- i) Introduction to PL/SQL
- ii) Stored procedures
- iii) Stored function
- iv) Database triggers

c) Forms (developer 2000)
- i) Working with forms
- ii) Writing triggers, procedures
- iii) Working with menus

b) Reports (developer 2000)
- i) Working with reports
- ii) Types of reports
- iii) Formatting of reports

PAPER- 2: MULTIUSER OPERATING SYSTEM (UNIX/LINUX) (marks: 100)

a) Introduction
b) Structure of unix/linux
c) General commands & redirections
d) Shell scripts

PAPER- 3: COMPUTER BASED NUMERICAL & OPTIMIZATION TECH. (marks: 100)

a) Errors and Accuracy
b) Calculus of Finite Differences
c) Iterative Methods of solution & Interpolations
d) Linear Programming
e) Simplex Method
f) Convex Set and their properties

PAPER-4: Computer Programming Using JAVA (marks: 100)

a) Introduction to JAVA
b) JAVA applications and Applets
c) Java AWT package
d) JAVA threads
e) Java Swing and JFC
f) JDBS
g) Socket / networking

PAPER- 5: MANAGEMENT INFORMATION SYSTEM (MIS) (marks: 100)

a) ORGANIZATION & MANAGEMENT
   i) Introduction
   ii) Management
   iii) Planning and decision making
   iv) Organization and staffing
   v) Directing and leading
   vi) Control and co-ordination

b) MANAGEMENT INFORMATION SYSTEM (MIS)
   i) Introduction
   ii) Information
   iii) Development of MIS
   iv) Choice of information technology
   v) Application of MIS in Business

PAPER-6: Computer Graphics

BCA

(3rs Year)

Paper-3 Mathematics-II 80+20

a. Errors & Accuracy

b. Calculus of finite differences.

c. Iterative methods of Solution & Interpolations.

d. Basic concepts of probability, Addition theorem, Multiplication theorem conditional probability and independence.

e. Measure of central tendency, Dispersion, Skew ness, Kurtosis.

f. Differentiation: Derivatives, Algebra of derivatives, Chain Rule, Derivatives of algebraic, trigonometric, exponential, logarithm functions. Derivatives of composite and implicit functions, parametric functions.

g. Integration: Algebra of integrals, indefinite integral, Standard integration formula, integration by method of substitution, integration by parts, Definite integral, elementary properties of definite integrals.

PAPER- 7: LAB –I (marks: 100)

Oracle: SQL & PL/SQL (marks: 50)

Linux / UNIX (marks: 50)

PAPER- 8: LAB-II (marks: 100)

JAVA Programming

PAPER- 9: (marks: 100)

PROJECT & VIVA

- **Third Year Total Marks: 900**