COURSE CONTENT FOR SEMESTER – II

## BCA-201 Mathematics II

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|---|---|---|
| Unit – I | Sets | Sets, Subsets, Equal Sets Universal Sets, Finite and Infinite Sets, Operation on Sets, Union, Intersection and Complements of Sets, Cartesian Product, Cardinality of Set, Simple Applications |
| Unit – II | Relations and functions | Properties of Relations, Equivalence Relation, Partial Order Relation Function: Domain and Range, Onto, Into and One to One Functions, Composite and Inverse Functions, Introduction of Trignometric, Logarithmic and Exponential Functions |
| Unit– III | Partial order relations and lattices | Partial Order Sets, Representation of POSETS using Hasse diagram, Chains, Maximal and Minimal Point, Glb, lub, Lattices & Algebric Systems, Principle of Duality, Basic Properties, Sublattices, Distributed & Complemented Lattics |
| Unit– IV | Functions of several variables | Partial Differentiation, Change of Variables, Chain Rule, Extrema of Functions of 2 Variables, Euler's Theorem |
| Unit – V | 3d coordinate geometry | 3D Coordinate Geometry: Coordinates in Space, Direction Cosines, Angle Between Two Lines, Projection of Join of Two Points on a Plane, Equations of Plane, Straight Lines, Conditions for a line to lie on a plane, Conditions for Two Lines to be Coplanar, Shortest Distance Between Two Lines, Equations of Sphere, Tangent plane at a point on the sphere |
| Unit – VI | Multiple integration | Double Integral in Cartesian and Polar Coordinates to find Area, Change of Order of Integration, Triple Integral to Find Volume of Simple Shapes in Cartesian Coordinates. |

**Referential Books:**

1. Kolman, Busby and Ross, "Discrete Mathematical Structure", PHI, 1996.

2. S.K. Sarkar, "Discrete Maths"; S. Chand & Co., 2000

| Unit – I | Arrays | Definition, declaration and initialization of one dimensional array; Accessing array elements; Displaying array elements; Sorting arrays; Arrays and function; Two-Dimensional array: Declaration and Initialization, Accessing and Displaying, Memory representation of array [Row Major, Column Major]; Multidimensional array |
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| Unit – II | Pointers | Definition and declaration, Initialization; Indirection operator, address of operator; pointer arithmetic; dynamic memory allocation; arrays and pointers; function and pointers |
| Unit– II | Strings | Definition, declaration and initialization of strings; standard library function: strlen(), strcpy(), strcat(), strcmp(); Implementation without using standard library functions |
| Unit– IV | Structures | Definition and declaration; Variables initialization; Accessing fields and structure operations; Nested structures; Union: Definition and declaration; Differentiate between Union and structure |
| Unit – V | Introduction C Preprocessor Bitwise Operators | Definition of Preprocessor; Macro substitution directives; File inclusion directives; Conditional compilation Bitwise operators; Shift operators; Masks; Bit field |
| Unit – VI | File handling | Definition of Files, Opening modes of files; Standard function: fopen(), fclose(), feof(); fseek(), fewind();Using text files: fgetc(), fputc(), fscanf() **Command line arguments** |

**Referential Books:**

1. Let us C-Yashwant Kanetkar.

2. Programming in C-Balguruswamy

3. The C programming Lang., Person Ecl - Dennis Ritchie

4. Structured programming approach using C-Forouzah & Ceilberg Thomson learning publication

## BCA-203    Organization Behavior

| Unit – I | Fundamentals of Organizational Behaviour | Nature, Scope, Definition and Goals of organizational Behaviour; Fundamental Concepts of Organizational Behaviour; Models of Organizational Behaviour; Emerging aspects of Organizational Behaviour: Meaning Cultural Diversity, Managing the Perception Process |
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| Unit – II | Perception, Attitude, Values and Motivation | Concept, Nature, Process, Importance, Management Behavioural aspect of Perception.    Effects of employee attitudes; Personal and Organizational Values; Job Satisfaction; Nature and Importance of Motivation; Achievement Motive; Theories of Work Motivation: Maslow's Need Hierarchy Theory McGregcrs's Theory 'X' and Theory 'Y' |
| Unit– III | Personality | Definition of Personality, Determinants of Personality; Theories of Personality- Trait and Type Theories, The Big Five Traites, Mytes-Briggs Indicator; Locus of Control, SType A and Type B Assessment of Personality |
| Unit– IV | Work Stress | Meaning and definition of Stress, Symptoms of Stress; Sources of Stress: Individual Level, Group Level, Organizational Level; Stressors, Extra Organizational Stressors; Effect of Stress - Burnouts; Stress Management - Individual Strategies, Organizational Strategies; Employee Counselling |
| Unit – V | Group Behaviour and Leadership | Nature of Group, Types of Groups; Nature and Characteristics of team;. Team Building, Effective Teamwork; Nature of Leadership, Leadership Styles; Traits of Effective Leaders |
| Unit – VI | Conflict in Organizations | Nature of Conflict, Process of Conflict; Levels of Conflict - Intrapersonal, Interpersonal; Sources of Conflict; Effect of Conflict; Conflict Resolution, Meaning and types of Grievances & Process of Grievances Handling. |

**Referential Books:**

1. Organizational Behavior Text, Cases and Games- By K.Aswathappa, Himalaya Publishing House, Mumbai, Sixth Edition (2005)

2. Organizational Behavior Human Behavior at Work By J.W. Newstrom, Tata McGraw Hill Publishing Company Limited, New Delhi, 12th Edition (2007)

3 Organizational Behavior - By Fred Luthans

4 Organizational Behavior - By Super Robbins

5. Organizational Behavior - Anjali Ghanekar

6. Organizational Behavior Fundamentals, Realities and Challenges By Detra Nelson, James Campbel Quick Thomson Publications

7. Organizational Behavior through Indian Philosophy, By N.M.Mishra, Hikalaya Publication House

| Unit – I | Logic gates and circuit | Gates (OR, AND, NOR, NAND, XOR & XNOR); Demogran's laws; Boolean laws, Circuit designing techniques (SOP, POS, K-Map). |
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| Unit – II | Combinational Building Blocks | Multiplexes; Decoder; Encoder; Adder and Subtracter. |
| Unit– III | Memories | ROMs, PROMs, EPROMs, RAMs, Hard Disk, Floppy Disk and CD-ROM |
| Unit– IV | Sequential Building Blocks | Flip-Flop (RS, D, JK, Master-slave & & T flip-flops); Registers & Shift registers; Counters; Synchronous and Asynchronous Designing method |
| Unit – V | Memory Organization | Basic cell of static and dynamic RAM; Building large memories using chips; Associative memory; Cache memory organization and Virtual memory organization |

## Referential Books:

1. Digital Logic and Computer design (PHI) 1998            : M.M. Mano

2. Computer Architecture (PHI) 1998                        : M.M. Mano

3. Digital Electronics (TMH) 1998                          : Malvino and Leach

4. Computer Organization and Architecture                  : William Stallings

5. Digital fundamentals (Universal Book Stall) 1998        : Floyd, L.Thomas

6. Computer Organization (MC Graw-Hill, Signapore)         : Hamcher, Vranesic and

Zaky

BCA-205    Financial Accounting & Management

Unit – I   :  Overview - Meaning and Nature of Financial Accounting, Scope of Financial Accounting, Financial Accounting & Management Accounting, Accounting concepts & convention, Accounting standards in India

Unit – II  :  Basics of accounting - Capital & Revenue items, Application of Computer in Accounting Double Entry System, Introduction to Journal, Ledger and Procedure for Recording and Posting, Introduction to Trail Balance, Preparation of Final Account, Profit & Loss Account and related concepts, Balance Sheet and related concept

Unit– III  :  Financial statement analysis: Ratio analysis, Funds flow analysis, concepts, uses, Preparation of funds flow statement, simple problem, Cash flow analysis, Concepts, uses, preparation of cash flow statement, simple problem, Break - even analysis

Unit– IV  :  Definition nature and Objective of Financial Management, Long Term Sources of Finance, Introductory idea about capitalization, Capital Structure, Concept of Cost of Capital, introduction, importance, explicit & implicit cost, Measurement of cost of capital, cost of debt.

Unit – V   :  Concept & Components of working Capital. Factors Influencing the Composition of working Capital, Objectives of working Capital Management - Liquidity Vs. Profitability and working capital policies. Theory of working capital: Nature and concepts

Unit – VI  :  Cash Management, Inventory Management and Receivables Management

## Referential Books:

1. Maheshwari & Maheshwari, "An Introduction to Accountancy", 8<sup>th</sup> Edition, Vikas Publishing House, 2003
2. Gupta R.L., Gupta V.K., "Principles & Practice of Accountancy", Sultan Chand & Sons, 1999.
3. Khan & Jain, "Financial Accounting"
4. Maheshwari S.N., "Principles of Management Accounting", 11<sup>th</sup> Edition, Sultan Chand & Sons, 2001
5. Shukla and Grewal, "Advanced Accounts", 14<sup>th</sup> Edition, Sultan Chand & Sons.

## BCA-206    Computer Laboratory and Practical Work of C Programming

Practical will be based on Paper Programming Principle & Algorithm: Covers UNIT-III, UNIT-IV, UNIT-V, UNIT-VI of Syllabus