

Syllabus**Unit 1: Introduction to C++**

A First look at a C++ Program, variables and constants, Arithmetic Expressions and if-else Statements, Iterative Statements, The Switch statement, Pointer, References, Dynamic Memory Allocation, Strings, Structures.

Unit 2: Linked List

Data Structures and Abstract Data Types, Linked List Data Structure, Linked List Traversal, The Insert Function, Remove Function, Linked Lists vs. Arrays, Linked Lists with a Tail and Doubly Linked Lists.

Unit 3: Stacks

Introduction, Array Implementation of Stack, The Hardware Stack.

Unit 4: Class

Introduction, Public and Private Members, Encapsulation, Implementation of a class, Syntax for Accessing Class Members, Constructors and Destructors, Arrays of Class Objects, Operator Overloading for Classes, Classes and Efficiency.

Unit 5: Queues

Introduction, Ring Buffer and Linked List Queue Implementations.

Unit 6: Trees

Introduction, Binary Search Trees, Tree, The Destroy, Find, and Insert Functions for Binary Search Trees, The Remove Function for the Binary Search Tree, Binary Tree Traversals, Implementing Tree as a Class.

Unit 7: Searching & Sorting

Introduction, Sequential and Binary Search, Selection Sort, Insertion Sort, Bubble Sort, Merge sort, Quick sort, Tree sort and Heap sort, Radix Sort.

Text Book

1. M. Litvin & G. Litvin- *Programs with C++ and Data Structures*- Vikas Publishing Home, New Delhi, 2005.

Reference Book

1. S. Sahni - *Data Structures, Algorithms and Applications in C++*, 2nd Edn. Universities Press, India 2005.

Syllabus**Unit 1: Probability**

Introduction, Events & Different Types of Events, Addition & Multiplication Law, Conditional Probability, Bay's Theorem.

Unit 2: Probability Distribution

Random Variables, Probability Function, Binomial Poisson & Normal Distribution.

Unit 3: Statistics

Definition, Function & Scope of Statistics.

Unit 4: Measures of Central Tendency

Arithmetic Mean, Weighted A.M., Median, Mode, Geometric & Harmonic Mean and Their Merits & Demerits.

Unit 5: Measures of Variation

Rang, The Interquartile Range or Quartile Deviation, Average (Mean), Deviation Standard Deviation, Coefficient of Variation, Skew-ness, Moments & Kurtosis.

Unit 6: Correlation Analysis

Introduction, Karl Pearson's Coefficient of Correlation, Rank Correlation Coefficient.

Unit 7: Regression Analysis

Difference between correlation & Regression, Regression Lines, Regression Equations, Regressions Coefficient.

Unit 8: Sampling Distribution

Chi Square (χ^2) Distribution and its Properties, Chi-Square Test, Application of Chi-Square Distribution: Chi-Square Test for Population Variance, Chi-Square Test of Goodness of Fit.

Text Book

1. S.P Gupta & M.P Gupta, Business Statics, Sultan Chand & Sons.

Reference Book

1. S.C Gupta & V.K Kapoor, Fundamental of Mathematical Statistics, Sultan Chand & Sons.

Syllabus**Unit 1: Binary System**

Digital Systems, Binary Numbers, Number Base Conversions, octal and Hexadecimal Numbers, complements, signed Binary Numbers, Binary Codes, Binary Storage and Registers, Binary Logic.

Unit 2: Boolean Algebra and Logic Gates

Basic Definitions, Axiomatic Definition of Boolean Algebra, Basic Theorems and Properties of Boolean Algebra, Boolean Functions, Canonical and Standard Forms, Other Logic Operating, Digital Logic Operations, Digital Logic Gates, Integrated Circuits.

Unit 3: Gate – Level Minimization

The Map Method, Four - Variable Map, Five – Variable Map, product of Sums Simplification, Don't - Care Conditions, NAND and NOR implementations, Other Two-Level Implements, Exclusive - OR Function.

Unit 4: Combinational Logic

Combinational Circuits Analysis procedure, Design procedure, Binary Adder - Subtractor, Decimal Adder, Binary Multiplier, Magnitude Comparator, Decoders, Encoders, Multiplexers.

Unit 5: Synchronous Sequential Logic

Sequential Circuits, Latches, Flip-Flaps, Analysis of Clocked Sequential Circuits, State Reduction and Assignment, Design Procedure.

Unit 6: Registers & Circuits

Registers, Shift Registers, Ripple Counters, Synchronous Counters, Other Counters.

Unit 7: Memory & Programmable logic

Introduction, Random-Access Memory, Memory Decoding, Error Detection and Correction, Read-Only Memory, Programmable Logic Array, Programmable Array Logic, Sequential Programmable Devices.

Text Book

1. M.Morris Mano- Digital Design, 3rd Edn, Pearson Education, New Delhi – 2005.

Reference Book

1. AB Marcovitz- Introduction to Logic Design, TMH, New Delhi – 2002.

**BCA204
Managerial
Economics**

Syllabus

Unit 1: Meaning – Managerial Economics

Meaning, nature, scope and significance of economics Consumer Behaviour. , Utility Approach, Law of diminishing marginal utility, Law of equip marginal utility. Indifference curve approach, Consumer equilibrium income, prices & substitution effects.

Unit 2: Revealed Preference Theory

Revealed Preference theory of law of Demand, Elasticity OF demand and its Measurements, methods of Demand forecasting, Concepts of cost and revenue, Short run and long run cost curves, Concept of total, average and marginal revenues.

Unit 3: Relationship

Relationship between average revenue marginal revenue and elasticity of demand, Price determination under perfect, oligopoly, duopoly, monopoly, rnonopolistic Competition price discrimination. Investment decision - capital building, public Investment decision, risk and uncertainty.

Text Book

1. Elements of Economics – Dewett & Dewett

Reference Book

1. Managerial Economics Vartshney & Maheswarl
2. Managerial Economics - J.G, Verrna
3. Economical Analysis for Management Decisions - T.W. Elliot.
4. Business Economics – V.G. Mankar
5. Managerial Economics - N.F. Dufty