

# **Course – computer fundamental & office automation (CFOA)**

## **Unit-i**

Introduction to Computers

Introduction, Characteristics of Computers, Block diagram of computer.

Types of computers and features, Mini Computers, Micro Computers,

Mainframe Computers,

Super Computers. Types of Programming Languages (Machine Languages,

Assembly Languages,

High Level Languages). Data Organization, Drives, Files, Directories.

Types of Memory (Primary And Secondary) RAM, ROM, PROM,

EPROM,.Secondary Storage Devices (FD,

CD, HD, Pen drive) I/O Devices (Scanners, Plotters, LCD, Plasma Display),

Number Systems: Introduction to Binary, Octal, Hexadecimal system -

Conversion, Simple Addition,

Subtraction, Multiplication.

## **Unit-ii**

Algorithm and Flowcharts

Algorithm: Definition, Characteristics, Advantages and disadvantages,

Examples

Flowchart: Definition, Define symbols of flowchart, Advantages and

disadvantages, Examples.

Operating System and Services in O.S.

Dos – History, Files and Directories, Internal and External Commands, Batch Files, Types of O.S.

## **Unit-iii**

operating System and Services in O.S.

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#### **Unit-iv**

Windows Operating Environment

Features of MS – Windows, Control Panel, Taskbar, Desktop, Windows Application, Icons, Windows Accessories, Notepad, Paintbrush.

#### **Unit-v**

Editors and Word Processors

Basic Concepts, Examples: MS-Word, Introduction to desktop publishing.

#### **Unit-vi**

Spreadsheets and Database packages

Purpose, usage, command, MS-Excel, Creation of files in MS-Access, Switching between applications,  
MS- Power Point.

## **Course – programming principles & algorithm(PPA)**

#### **Unit-i**

Introduction to ‘C’ Language

History, Structures of ‘C’ Programming, Function as building blocks.

Language Fundamentals

Character set, C Tokens, Keywords, Identifiers, Variables, Constant, Data Types, Comments.

## **Unit-ii**

Operators

Types of operators, Precedence and Associativity, Expression, Statement and types of statements

Built in Operators and functions

Console based I/O and related built in I/O function: printf(), scanf(), getch(), getchar(), putchar();

Concept of header files, Preprocessor directives: #include, #define.

## **Unit-iii**

Control structures

Decision making structures: If, If-else, Nested If-else, Switch; Loop Control structures: While, Do-while, for,

Nested for loop; Other statements: break, continue, goto, exit.

## **Unit-iv**

Introduction to problem solving

Concept: problem solving, Problem solving techniques (Trial & Error, Brain Storming, Divide & Conquer)

Steps in problem solving (Define Problem, Analyze Problem, Explore Solution) Algorithms and Flowcharts

(Definitions, Symbols), Characteristics of an algorithm ,Conditionals in pseudo-code, Loops in pseudo code

Time complexity: Big-Oh notation, efficiency Simple Examples: Algorithms and flowcharts (Real Life

Examples)

## **Unit-v**

Simple Arithmetic Problems

Addition / Multiplication of integers, Determining if a number is +ve / -ve / even / odd, Maximum of 2

numbers, 3 numbers, Sum of first n numbers, given n numbers, Integer division, Digit reversing, Table

generation for n, a b

, Factorial, sine series, cosine series,

n,C,r ,

Pascal Triangle, Prime number, Factors of a number, Other problems such as Perfect number, GCD numbers etc (Write algorithms and draw flowchart),

Swapping

### **Unit-vi**

Functions

Basic types of function, Declaration and definition, Function call, Types of function, Parameter passing, Call by value, Call by reference, Scope of variable, Storage classes, Recursion.

# **Course – principle of management**

## **UNIT-I**

Nature of Management:

Meaning, Definition, nature & purpose, importance & Functions,

Management as Art, Science & Profession-

Management as social System Concepts of management-Administration-Organization, Management Skills,

Levels of Management.

## **UNIT-II**

**Evolution of Management Thought:**

Contribution of F.W.Taylor, Henri Fayol, Elton Mayo, Chester Barhard & Peter Drucker to the management thought. Business Ethics & Social Responsibility: Concept, Shift to Ethics, Tools of Ethics.

## **UNIT-III**

**Functions of Management: Part-I**

Planning – Meaning- Need & Importance, types, Process of Planning, Barriers to Effective Planning, levels – advantages & limitations. Forecasting- Need & Techniques Decision making- Types – Process of rational decision making & techniques of decision making, Organizing – Elements of organizing & processes: Types of organizations, Delegation of authority – Need, difficulties , Delegation – Decentralization Staffing – Meaning & Importance Direction – Nature – Principles Communication – Types & Importance

## **UNIT-IV**

**Functions of Management: Part-II**

Motivation – Importance – theories

Leadership – Meaning –styles, qualities & function of leader

Controlling – Need, Nature, importance, Process & Techniques, Total Quality Management

Coordination – Need – Importance

## **UNIT – V**

Management of Change: Models for Change, Force for Change, Need for Change, Alternative Change

Techniques, New Trends in Organization Change, Stress Management.

# **Course – Business communication**

## **UNIT-I**

Means of Communication:

Meaning and Definition – Process – Functions – Objectives – Importance – Essentials of good communication –

Communication barriers, 7C's of Communication

## **UNIT-II**

Types of Communication:

Oral Communication:

Meaning, nature and scope – Principle of effective oral communication –

Techniques of effective speech –

Media of oral communication (Face-to-face conversation – Teleconferences – Press Conference –

Demonstration – Radio Recording – Dictaphone – Meetings – Rumour –

Demonstration and Dramatisation –

Public address system – Grapevine – Group Discussion – Oral report – Closed circuit TV). The art of listening –

Principles of good listening.

## **UNIT-III**

Written Communication

Purpose of writing, Clarity in Writing, Principle of Effective writing, Writing

Techniques, Electronic Writing  
Process.

#### UNIT-IV

**Business Letters & Reports:**

Need and functions of business letters – Planning & layout of business letter  
– Kinds of business letters –  
Essentials of effective correspondence, Purpose, Kind and Objective of  
Reports, Writing Reports.

#### UNIT-V

**Drafting of business letters:**

Enquiries and replies – Placing and fulfilling orders – Complaints and follow-up  
Sales letters – Circular letters  
Application for employment and resume

#### UNIT-VI

**Information Technology for Communication:**

Word Processor – Telex – Facsimile(Fax) – E-mail – Voice mail –Internet –  
Multimedia – Teleconferencing –  
Mobile Phone Conversation – Video Conferencing –SMS – Telephone  
Answering Machine – Advantages and  
limitations of these types of communication.  
Topics Prescribed for workshop/skill lab  
Group Discussion, Mock Interview, Decision Making in a Group

# **Course – mathematics-i**

## **UNIT-I**

### **DETERMINANTS:**

Definition, Minors, Cofactors, Properties of Determinants, MATRICES:

Definition, Types of Matrices,

Addition, Subtraction, Scalar Multiplication and Multiplication of Matrices,

Adjoint, Inverse, Cramers Rule,

Rank of Matrix Dependence of Vectors, Eigen Vectors of a Matrix, Caley-Hamilton Theorem (without proof).

## **UNIT-II**

### **LIMITS & CONTINUITY:**

Limit at a Point, Properties of Limit, Computation of Limits of Various Types of Functions, Continuity at a

Point, Continuity Over an Interval, Intermediate Value Theorem, Type of Discontinuities

## **UNIT-III**

### **DIFFERENTIATION:**

Derivative, Derivatives of Sum, Differences, Product & Quotients, Chain Rule,

Derivatives of Composite

Functions, Logarithmic Differentiation, Rolle's Theorem, Mean Value Theorem, Expansion of Functions

(Maclaurin's & Taylor's), Indeterminate Forms, L' Hospitals Rule, Maxima & Minima, Curve Tracing,

Successive Differentiation & Liebnitz Theorem.

## **UNIT-IV**

### **INTEGRATION:**

Integral as Limit of Sum, Fundamental Theorem of Calculus( without proof.),

Indefinite Integrals, Methods of  
Integration: Substitution, By Parts, Partial Fractions, Reduction Formulae for  
Trigonometric Functions, Gamma  
and Beta Functions(definition).

## UNIT-V

### VECTOR ALGEBRA:

Definition of a vector in 2 and 3 Dimensions; Double and Triple Scalar and  
Vector Product and physical  
interpretation of area and volume.