

**Semester - 1**

Course No.	Subject	Credit	Exam
EC-101	Communication English	2	Theory
FC-101	Principles of Electronics & Digital Circuits	2	Theory
CC-101	Introduction to Internet & ICT Technologies	3	Theory
CC-102	Problem Solving through 'C' Language	3	Theory
CC-103	Mathematical Foundations	3	Theory
CC-104	Computer Fundamentals	3	Theory
CC-105	PC Software	3	Practical
CC-106	CC-101 Practical	3	Practical
CC-107	CC-102 Practical	3	Practical
	TOTAL	25	

Semester	Course	Instruction Hours/Week	Credit	Exam Hours	Internal	External		Total
						Theory	Practical	
1	EC-101	2	2	3	100	---	---	100
1	FC-101	2	2	3	100	---	---	100
1	CC-101	3	3	3	30	70	---	100
1	CC-102	3	3	3	30	70	---	100
1	CC-103	3	3	3	30	70	---	100
1	CC-104	3	3	3	30	70	---	100
1	CC-105	3	3	3	30	---	70	100
1	CC-106	3	3	3	30	---	70	100
1	CC-107	3	3	3	30	---	70	100
TOTAL		25	25					

## **EC – 101 Communication English**

### **Unit 1: Introduction to Communication**

Meaning and Definition - Process - Functions - Objectives - Importance - Essentials of good communication - Communication barriers - Overcoming communication barriers

### **Unit 2: Types of Communication & Introduction to Letter writing**

Written - Oral - Face-to-face - Silence - Merits and limitations of each type, Need and functions of business letters - Planning & layout of business letter - Kinds of business letters - Essentials of effective correspondence

### **Unit 3: 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 4: Oral Communication**

Meaning, nature and scope - Principles 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.

### ***Reference Books:***

- Media and Communication Management - C. S. Rayudu - Himalaya Publishing House, Bombay.
- Essentials of Business Communication - Rajendra Pal and J. S. Korlhalli - Sultan Chand & Sons, New Delhi.
- Business Communication (Principles, Methods and Techniques) Nirmal Singh - Deep & Deep Publications Pvt. Ltd., New Delhi.
- Business Communication - Dr. S.V. Kadvekar, Prin. Dr. C. N. Rawal and Prof. Ravindra Kothavade - Diamond Publications, Pune.

## **FC-101 Principles of Electronics & Digital Circuits**

### **Unit – 1**

Number code: 8421, Other BCD codes, Grey, ASCII, EBCDIC, Unicode

### **Unit – 2**

Boolean Algebra: Laws and theorems of Boolean algebra. De Morgan's theorem, XOR and XNOR gates, Half and Full Adder

### **Unit – 3**

Products, Sum of products and Product of sums, Form of Boolean expressions  
Truth Tables and Karnaugh maps, pair reads octets and Karnaugh simplification.

### **Unit – 4**

Memories for Digital System: Semiconductor Memories, Memory organization and expansion, classification of memories on the basis of principles of operation, physical characteristics and fabrication technology, ROM, RAM, EROM, EEROM, UVEROM and basic memory cells.

### ***Reference Books:***

- Computer System Architecture By Mano, Pearson Prentice Hall Publications
- Digital Logic Circuits By A.P.Godse, D.A.Godse, Technical Publications, Pune

## **CC-101      Introduction to Internet & ICT Technologies**

### **Unit - 1**

Concept of Internet, Understanding of Communication over Internet Infrastructure, Services of Internet

### **Unit - 2**

Internet as Global Network, Internet URL (Uniform Resource Locator), Internet Service Provider, Intranet, Extranet, Virtual Private Network.

### **Unit - 3**

Introduction to World Wide Web, Web Browser, Website, Web Portal, Internet Protocols: HTTP, HTTPS, FTP, SMTP, Search Engines & its utilities,

### **Unit - 4**

Application of Internet: Electronic Mail, Chat, Video Conferencing, FTP, Remote Login, E-Commerce, E-Learning, E-Governance, E-Banking, Social Networking, Instant Messenger, Mobile Internet & applications, Smart Phone

### ***Reference Books:***

- Internet and Web Design Based on DOEACC III Revised syllabus 'O' Level, Mac Millan India Ltd.
- Introduction to Internet and HTML Scripting By Bhaumik Shroff, Books

## CC-102      Problem Solving thr 'C' Language

### Unit - 1

**Elements of C:** C character set, identifiers and keywords, Data types: declaration and definition, storage classes in C, Type conversion, Types of error, 'C' macro, macro v/s function.

**Operators:** Arithmetic, relational, logical, bitwise, unary, assignment and conditional operators and their hierarchy, Data input/output.

### Unit - 2

**Control statements:** Sequencing, Selection: if and switch statement; alternation, Repetition: for, while, and do-while loop; break, continue, goto statement.

**Functions:** Definition, prototypes, passing parameters, recursion.

### Unit - 3

**Data Structures:** arrays, structure, union

**Pointers:** Declaration, operations on pointers, array of pointers, pointers to arrays.

### Unit - 4

**String operations and related functions usage**

**File Operations,** Formatted I/O, Character I/ O, Line I/O

### *Reference Books:*

- Let us C, Yashwant Kanetker, BPB Publications.
- Programming in C, E Balaguruswamy, TMH
- Fundamental of Computers and Programming in C, R. B. Patel, Khanna Book Publishing
- Programming with C, Gottfried, Tata McGraw Hill.
- The C Programming Language, 2nd Ed., Brian W. Kernighan, Dennis M. Ritchie, Prentice Hall of India.

## **CC-103      Mathematical Foundations**

### **Unit – 1**

DETERMINANTS: Definition, Minors, Cofactors

MATRICES: Definition, Types of Matrices, Addition, Subtraction, Scalar Multiplication and Multiplication of Matrices, Adjoint, Inverse, Rank of Matrix

### **Unit - 2**

DIFFERENTIATION: Derivative, Derivatives of Sum, Differences, Product & Quotients, Chain Rule, Derivatives of Composite Functions, simple integration

### **Unit - 3**

Central values computation – arithmetic mean, median, mode, dispersion, standard deviation, co-relation, regression,

### **Unit - 4**

FUNCTIONS & GRAPHS: Graphs terminology, Representing Graphs, Directed and undirected graphs and their matrix representations, definition of Boolean algebra as algebraic structures with two operations basic results truth values and truth tables

### ***Reference Books:***

- Gupta S.P. and Kapoor, V.K., Fundamentals of Mathematical statistics, Sultan Chand and Sons,
- B.S. Grewal, “Elementary Engineering Mathematics”, 34th Ed., 1998..
- H.K. Dass, “Advanced Engineering Mathematics”, S. Chand & Company, 9th Revised Edition, 2001.
- Shanti Narayan, “Integral Calculus”, S. Chand & Company, 1999
- Shanti Narayan, “Differential Calculus”, S.Chand & Company, 1998.
- Babu Ram: “Discrete Mathematics and Its Applications”, Vinayaka Publications.

## **CC-104      Computer Fundamentals**

### **Unit - 1**

The evolution of computers, Classification of computers. The control unit, computer organization & Block diagram representation, storage devices, instruction set, Input-Output devices, interconnection architectures.

### **Unit - 2**

Computer Languages, Low level and high level languages, assemblers, compilers, interpreters, linkers, algorithms, flow charting : symbols and flow chart development of problem solution

### **Unit - 3**

Types of computer processor, Microprocessor, Microcontroller, Software, application software, System Software,

### **Unit - 4**

Operating system concepts, Different types of operating systems, structure of operating system, Basic elements of a Communication System, Network Types (LAN, WAN and MAN), Communication protocols,

### ***Reference Books:***

Computer Fundamentals, Pradeep Sinha & Priti Sinha, BPB Publications

Fundamentals of Computers By V. Rajaraman, Neeharika Adabala, PHI Press

## CC-105      PC Software

### Unit - 1

**MS Windows:** Introduction to M.S. Windows; Features of Windows; Various versions of Windows & its use; Working with Windows; My Computer & Recycle bin ; Desktop, Icons and Windows Explorer; Screen description & working styles of Windows; Dialog Boxes & Toolbars; Working with Files & Folders; simple operations like copy, delete, moving of files and folders from one drive to another, Shortcuts & Autostarts; Accessories and Windows Settings using Control Panel- setting common devices using control panel, modem, printers, audio, network, fonts, creating users, internet settings, Start button & Program lists; Installing and Uninstalling new Hardware & Software program on your computer.

### Unit - 2

**MS Word:** Introduction to MS Office; Introduction to MSWord; Features & area of use. Working with MS Word.; Menus & Commands; Toolbars & Buttons; Shortcut Menus, Wizards & Templates; Creating a New Document; Different Page Views and layouts; Applying various Text Enhancements; Working with – Styles, Text Attributes; Paragraph and Page Formatting; Text Editing using various features ; Bullets, Numbering, Auto formatting, Printing & various print options, Spell Check, Thesaurus, Find & Replace; Headers & Footers ; Inserting – Page Numbers, Pictures, Files, Autotexts, Symbols etc.; Working with Columns, Tabs & Indents; Creation & Working with Tables including conversion to and from text; Margins & Space management in Document; Adding References and Graphics; Mail Merge, Envelops & Mailing Labels. Importing and exporting to and from various formats.

### Unit - 3

**MS Excel:** Introduction and area of use; Working with MS Excel.; concepts of Workbook & Worksheets; Using Wizards; Various Data Types; Using different features with Data, Cell and Texts; Inserting, Removing & Resizing of Columns & Rows; Working with Data & Ranges; Different Views of Worksheets; Column Freezing, Labels, Hiding, Splitting etc.; Using different features with Data and Text; Use of Formulas, Calculations & Functions; Cell Formatting including Borders & Shading; Working with Different Chart Types; Printing of Workbook & Worksheets with various options.

### Unit - 4

**MS PowerPoint:** Introduction & area of use; Working with MS PowerPoint; Creating a New Presentation; Working with Presentation; Using Wizards; Slides & its different views; Inserting, Deleting and Copying of Slides; Working with Notes, Handouts, Columns & Lists; Adding Graphics, Sounds and Movies to a Slide; Working with PowerPoint Objects; Designing & Presentation of a Slide Show; Printing Presentations, Notes, Handouts with print options.

### *Reference Books:*

- Windows XP Complete Reference. BPB Publications
- Joe Habraken, Microsoft Office 2000, 8 in 1 by, Prentice Hall of India
- I.T. Tools and Applications by A. Mansoor, Pragya Publications, Matura