

Study Scheme: PGDCA
SEMESTER- I
Academic Session- 2025-26 Onwards

Core Courses:

| Sr. No. | Paper Code | Title of Paper | L+T | P | External Marks | Internal Marks | Total | Credits |
|---------|------------|--|-----|---|----------------|----------------|-------|---------|
| 1. | PDCA1101T | Computer Fundamentals and Office Automation | 4+0 | 0 | 70 | 30 | 100 | 4 |
| 2. | PDCA1102T | Computer Programming using C | 4+0 | 0 | 70 | 30 | 100 | 4 |
| 3. | PDCA1103T | Basics of Web Designing using HTML | 4+0 | 0 | 70 | 30 | 100 | 4 |
| 4. | PDCA1104P | Programming lab-I (Based on paper PDCA1102T) | 0 | 4 | 35 | 15 | 50 | 2 |
| 5. | PDCA1105P | Programming lab-II (Based on paper PDCA1103T) | 0 | 4 | 35 | 15 | 50 | 2 |

SEC and AEC Courses:

| Sr. No. | Paper Code | Title of Paper | L+T | P | External Marks | Internal Marks | Total | Credits |
|--------------|------------|------------------------------------|-----|---|----------------|----------------|------------|-----------|
| 1. | PDCA1106P | Documentation Using Word Processor | 0 | 4 | 35 | 15 | 50 | 2 |
| 2. | PDCA1107T | Introduction to Cyber Security | 2 | 0 | 35 | 15 | 50 | 2 |
| TOTAL | | | | | 350 | 150 | 500 | 20 |

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SEMESTER – I

PDCA1101T: COMPUTER FUNDAMENTALS AND OFFICE AUTOMATION

Total Marks: 100
External Examination: 70
Internal Assessment: 30
Credits: 4

Maximum Time: 3 Hrs.
Minimum Pass Marks: 40%
Lectures to be delivered: 55-60Hrs
L: 4 T: 0 P: 0

Course Outcomes:

- Describe the basic structure and characteristics of computers and classify them by capacity, purpose, and generation.
- Demonstrate the ability to convert between number systems (decimal, binary, octal, hexadecimal) and perform basic binary arithmetic operations.
- Identify and explain the functions of different types of memory (RAM, ROM, cache, etc.) and input/output devices, including storage media and graphical I/O tools.
- Understand and differentiate between computer languages (machine, assembly, high-level, 4GL), and explain the role of compilers, interpreters, and assemblers.
- Analyze the scope and types of E-Commerce, its advantages and limitations, and describe the architecture and features of various e-commerce models and websites.

Instructions for the Paper-Setter

The question paper will consist of three sections A, B & C. Sections A & B will have four questions from the respective sections of the syllabus and will carry 30% marks each. Section C will have 6-12 short answer type questions which will cover the entire syllabus uniformly and will carry 40% marks in all.

Instructions for Candidates

Candidates are required to attempt five questions in all selecting two questions from each sections A and B and compulsory question of section C.

SECTION – A

Computer Fundamentals: Block structure of a computer, characteristics of computers, problem solving with computers, Generations of computers, Classification of computers on the basis of capacity, purpose, and generation.

Memory types: Magnetic core, RAM, ROM, Secondary, Cache, Input and Output Units: functional characteristics: Overview of storage devices: floppy disk, hard disk, compact disk, tape; Printers: Impact, non-impact. Graphical I/O devices: Light pen, joystick. Mouse, Touch screen; OCR, OMR, MICR, **Computer languages:** Machine language, assembly language, high level language, 4GL. Compiler, Interpreter, Assembler. System Software, Application Software. Data Network and Communication: Network types, Transmission Modes, Network topologies, Internet: Evolution

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of Internet, E-mail WWW, FTP, TELNET, IRC, Video Conferencing.

SECTION – B

Introduction to Word Processing : Word Processing concepts, Use of Templates, Working with word document: Editing text, Find the replace text, Formatting, spell check, Auto correct, Auto text; Bullets and numbering, Tabs, Paragraph formatting, Indent, Page formatting, Header and footer. Tables: Inserting, Filling and formatting a table; Inserting Pictures and Video; Mail Merge: Including linking with Database; Printing documents.

Preparing Presentations: Basics of presentations, Slides, Fonts, Drawing, Editing; Inserting: Tables, Images, texts, Symbols Media; Design; Transition; Animation; and Slide show. Applying a Theme, Working with Preset Placeholders, Customizing and Creating Layouts, Managing Slide Masters, Managing Themes, Printing Slides. Building Animation Effects, Transitions, and Support Materials: Understanding Animation and Transitions, Assigning Transitions to Slides.

Preparing Spreadsheets: Creating and Editing Worksheets and Workbooks. Exploring the types of Data. Date and Time, Modifying Cell Contents, Applying Number Formatting, Cell Range Operations, Controlling the Worksheet View, Copying and Moving Ranges, Using Names to Work with Ranges, Adding Comments to Cells. Formula and Functions, sorting and filtering data, graphs and charts.

Text/Reference Books:

- Foundations of Computing by P.K. Sinha and P. Sinha, BPB First Edition.
- Information Technology and Management by Turban Mclean and Wetbrete, John Wiley & Sons.
- Information Technology by Satish Jain, BPB.

PDCA1102T: COMPUTER PROGRAMMING USING C

Total Marks: 100
External Examination: 70
Internal Assessment: 30
Credits: 4

Maximum Time: 3 Hrs.
Minimum Pass Marks: 40%
Lectures to be delivered: 55-60Hrs
L: 4 T: 0 P: 0

Course Outcomes:

- Understand programming using C concepts for writing good programs. On completion of this course, the students will be able to
- Write, compile and debug programs in C language.
- Use different data types, operators and console I/O function in a computer program.
- Design programs involving decision control statements, loop control statements and case control structures.
- Understand the implementation of arrays, pointers and functions and apply the dynamics of memory by the use of pointers.
- Comprehend the concepts of structures and classes: declaration, initialization and implementation.

Instructions for the Paper-Setter

The question paper will consist of three sections A, B & C. Sections A & B will have four questions from the respective sections of the syllabus and will carry 30% marks each. Section C will have 6-12 short answer type questions which will cover the entire syllabus uniformly and will carry 40% marks in all.

Instructions for the Candidates

Candidates are required to attempt five questions in all selecting two questions from each sections A and B and compulsory question of section C.

SECTION – A

Basic Constructs: Identifiers, Keywords, Tokens, Constants, Data Types, Language Translators, Input and Output in C, Type Conversions,

Operators and Expressions: Hierarchy of Operators, Precedence & Associativity, Control Statements: Branching, Looping and Jumping.

Functions: Definition, Prototype, Different types of functions based on arguments and return type, Parameter passing mechanisms, concept of recursive function.

Storage Classes: Different Storage Classes (static, auto, extern, register), Global and Local variables.

SECTION – B

Arrays: Definition, accessing elements, initialization, Passing Arrays to functions, Multi-dimensional arrays, String handling.

Pointers: Address and Dereferencing Operators, Declaration, Assignment, Passing addresses to functions, Using Pointer Arrays to sort strings.

Structures and Unions: Variables, Accessing members, Nested Structures, Pointer to Structures,



Concept of self-referential structures, Difference between a Union and Structure.

Text and Readings:

- E. Balagurusamy, "Programming in C", Tata McGraw Hill.
- Kamthane, "Programming with ANSI and Turbo C", Pearson Education
- Rajaraman, V, "Fundamentals of Compute, PHI
- Kanetkar, "Let Us C", BPB Publications.



PDCA1103T: BASICS OF WEB DESIGNING USING HTML

Total Marks: 100

External Examination: 70

Internal Assessment: 30

Credits: 4

Maximum Time: 3 Hrs.

Minimum Pass Marks: 40%

Lectures to be delivered: 55-60Hrs

L: 4 T:0 P: 0

Course Outcomes:

- Explain the fundamentals of web designing, including the types of websites and the differences between websites and web applications.
- Develop and structure web pages using basic HTML elements like headings, paragraphs, lists, hyperlinks, and media.
- Design accessible web pages by incorporating images, audio, video, and appropriate alternative text.
- Construct structured tables and page layouts using HTML tags and semantic HTML elements.
- Create interactive forms using various input elements and group form controls effectively.
- Apply basic styling to web pages using CSS to enhance the visual appearance and layout.

Instructions for the Paper-Setter

The question paper will consist of three sections A, B & C. Sections A & B will have four questions from the respective sections of the syllabus and will carry 30% marks each. Section C will have 6-12 short answer type questions which will cover the entire syllabus uniformly and will carry 40% marks in all.

Instructions for Candidates

Candidates are required to attempt five questions in all selecting two questions from each sections A and B and compulsory question of section C.

SECTION – A

1. Introduction to Web Designing

- Definition and importance of web designing
- Difference between website and web application
- Types of websites: Static vs. Dynamic
- Structure of a website

2. Understanding HTML

- Introduction to HTML (Hyper Text Markup Language)
- Structure of an HTML document
- HTML tags, elements, and attributes
- Creating and saving an HTML file

3. Basic HTML Elements

- Headings, paragraphs, line breaks, and horizontal rules
- Formatting text: bold, italic, underline
- Lists: ordered and unordered



- Creating hyperlinks (internal and external)
4. **Working with Images and Multimedia**
- Inserting images using `` tag
 - Adding audio and video to web pages
 - Using alternative text for accessibility

SECTION - B

5. Tables and Layout

- Creating tables using `<table>`, `<tr>`, `<td>`, `<th>`
- Merging cells using `rowspan` and `colspan`
- Basic page layout using `<div>` and ``
- Introduction to HTML5 semantic elements: `<header>`, `<footer>`, `<section>`, `<article>`

6. Creating Forms in HTML

- Form tag and its attributes
- Input elements: text, password, radio, checkbox, dropdown
- Submit and reset buttons
- Grouping controls using `<fieldset>` and `<legend>`

7. Introduction to Styling with CSS (Basic)

- What is CSS and why is it used?
- Inline CSS vs. Internal CSS
- Changing text color, background, and alignment
- Basic box model: padding, margin, border

8. Practical Assignments and Mini Project

- Creating a personal webpage
- Designing a simple static website with multiple pages
- Project: Basic layout of a college website (Home, About, Contact pages)

Text/Reference Books:

- Thomas A. Powell, "HTML: The Complete Reference", Osborne/McGraw-Hill
- Deitel, Deitel and Nieto : Internet & WWW. How to program, 2nd Edition, Pearson Education Asia.
- E Stephen Mack, Janan Platt : HTML 4.0 , No Experience Required, 1998, BPB Publications.
- "HTML Complete" by Sybex, BPB Publications, 2001.
- Bayross , "Web Enabled Commercial Applications Development Using HTML,DHTML, Java Script, Perl CGI," Third Edition, BPB Publications.

Usl

PDCA1104P: PROGRAMMING LAB-I

Total Marks: 50
External Examination: 35
Internal Assessment: 15
Credits: 2

Maximum Time: 3 Hrs.
Minimum Pass Marks: 40%
Lectures to be delivered: 55-60Hrs
L: 0 T: 0 P: 4

This laboratory course will mainly comprise of exercise based on subject PDCA1102T (Computer Programming using C)

The breakup of marks for the practical will be as under:

| | | |
|------|---|-----------|
| i. | Internal Assessment | 30% Marks |
| ii. | Viva Voce (External Evaluation) | 30% Marks |
| iii. | Project file, Project Execution (External Evaluation) | 30% Marks |
| iv. | Attendance | 10% Marks |

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PDCA1105P: PROGRAMMING LAB-II

Total Marks: 50
External Examination: 35
Internal Assessment: 15
Credits: 2

Maximum Time: 3 Hrs.
Minimum Pass Marks: 40%
Lectures to be delivered: 55-60Hrs
L: 0 T:0 P: 4

This laboratory course will mainly comprise of exercise based on subject PDCA1103T (Basics of Web Designing using HTML)

The breakup of marks for the practical will be as under:

| | | |
|------|---|-----------|
| i. | Internal Assessment | 30% Marks |
| ii. | Viva Voce (External Evaluation) | 30% Marks |
| iii. | Project file, Project Execution (External Evaluation) | 30% Marks |
| iv. | Attendance | 10% Marks |



PDCA1106P: DOCUMENTATION USING WORD PROCESSOR

Total Marks: 50

External Examination: 35

Internal Assessment: 15

Credits: 2

Maximum Time: 3 Hrs.

Minimum Pass Marks: 40%

Lectures to be delivered: 55-60Hrs

L: 0 T: 0 P: 4

Course Outcomes:

- Use the basic functions of Microsoft Word effectively.
- Apply different text formats to a Word document.
- Insert and format images in a Word document.
- Create and edit tables in Microsoft Word.
- Use spelling and grammar-checking tools in Word.

SECTION –A

Introduction to Word Processor:

- Creating, opening, saving and closing a document.
- Typing, copying, moving and deleting data in word document.
- Perform Save and Save as, Cut and Copy, Paste and Paste Special.

Text Formatting and Paragraph Styling:

- Text formats (font size, font style, font color, subscript, superscript, upper/lower case etc.).
- Text Alignment and character spacing.
- Indention and line spacing
- Find and replace and data sorting in a document, Protect your document

Page Layout and Margins

- Setting page orientation (portrait/landscape)
- Page Border and shading, Bullets and Numbering.
- Set a size, margin, orientation of page, Hyphenation, Columns and Line Numbers in Word Processor.
- Set Page Color, Page Border, Themes, and Watermarks in Word Processor.

SECTION – B

Add chart in word document

- Create different types of Charts in word.



Working with Tables

- Creating, modifying, and formatting tables
- Merging/splitting cells, adding borders and colors

Using Headers, Footers, and Page Numbers

- header/footers, pictures, page numbers and special symbols,
- Text Box in your word document.
- Showing Ruler, Gridlines, Document Map, Thumbnails,
- Inserting Word Art, Drop Cap, Hyperlink, Equation etc. in word document.

Mail Merge and Macros

- Perform Mail-merge in Word Processor
- Create and run Macros in Word Processor.
- Set the print properties of a word document.

The breakup of marks for the practical will be as under:

| | | |
|------|--|------------------|
| i. | Internal Assessment | 30% Marks |
| ii. | Viva Voce (External Evaluation) | 30% Marks |
| iii. | Project file, Project Execution (External Evaluation) | 30% Marks |
| iv. | Attendance | 10% Marks |

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PDCA1107T: INTRODUCTION TO CYBER SECURITY

Total Marks: 50

External Examination: 35

Internal Assessment: 15

Credits: 2

Maximum Time: 1.5 Hours

Minimum Pass Marks: 40%

Lectures to be delivered: 25-30Hrs.

L: 2 T: 0 P: 0

Course Outcomes:

- Understand the fundamentals of cyber security, types of cyber-attacks, risk management processes, and the components of an information security framework.
- Demonstrate knowledge of user access control, authentication mechanisms, and various protection techniques against malicious activities.
- Compare and evaluate authentication methods, protocols, and the difference between authentication and authorization.
- Describe the objectives and types of cryptography, including encryption techniques and the use of public key cryptography in securing data.

Instructions for the Paper-Setter

The question paper will consist of three sections A, B & C. Sections A & B will have four questions from the respective sections of the syllabus and will carry 30% marks each. Section C will have 6-12 short answer type questions which will cover the entire syllabus uniformly and will carry 40% marks in all.

Instructions for Candidates

Candidates are required to attempt five questions in all selecting two questions from each sections A and B and compulsory question of section C.

SECTION - A

Unit 1: Cyber Attacks: Introduction, Types, Assets: Identification, Accountability, Vulnerability and Threats, Risk Management, Qualitative Risk Assessment, Information Security Framework: Introduction, Policies, Standards, Baselines, Guidelines and Procedures.

Unit II: Security: Basics, User Access Controls, Authentication, Access Control: Framework, Techniques and Technologies, Training and Awareness and Its types, Technical Security Controls: Preventive, Detective, Corrective. Protection from malicious attacks

Unit III: Networks and Communication: Data Communication, Characteristics' and components. Data flow, Computer Network, Categories, Protocol, External Services, Cloud Computing: Introduction, Models, Benefits, Challenges, Private, Public Clouds,

Unit IV: Software Engineering Life Cycle: Stages, Models: Waterfall, Iterative, Spiral, V Model, Big Bang, Agile, RAD, Prototype,

SECTION - B

Unit V: Authentication: Authentication Vs Authorization, Methods and Protocols: Kerberos, SSL, Protocol, Password Authentication, Challenge-Handshake Authentication (CHAP), MSCHAP, Extensible Authentication, Remote Authentication.

Unit VI: Service Set Identification (SSID), Encryption Methods: Wire Equivalent Privacy, WPA, WPA2, MAC Filtering, Wireless Routers, Creating Wireless Network, WLAN

Unit VII: Investigation Techniques and Cyber Forensics, Types of Investigation, Evidence and

Analysis, Steps for Forensics Investigation, Forensics Tools, Investigation, Common Types of Email Abuse, Tracking Location of Email Sender, Scam or Hiex Emails and Websites, Fake Social Media Profile,

Unit VIII: Cryptography: Objectives, Type, OS Encryption, Public key Cryptography,

Text and Readings:

- "Cyber Security: Understanding Cyber Crimes, Computer Forensics and Legal Perspectives" *Authors: Nina Godbole, Sunit Belapure – Wiley India*
- "Information Security: Principles and Practices" *Author: Mark Stamp – Wiley*
- "Network Security Essentials: Applications and Standards" *Author: William Stallings, Pearson*
- "Cryptography and Network Security", *Author: William Stallings – Pearson*

V/V