Curriculum Framework

Post Graduate Diploma in Computer Application

As per NEP 2020 and Learning Outcomes-based National Curriculum Framework
(Aligned with NCrF and NHEQF)

Effective From Academic Year 2025-2026

Founded by Mahatma Gandhi in 1920

Gujarat Vidyapith

Ahmedabad

Curriculum Framework

Post Graduate Diploma in Computer Application (PGDCA)

(Department of Computer Science)

As per NEP 2020 and Learning Outcomes-based National Curriculum Framework

(Aligned with NCrF and NHEQF)

Effective From Academic Year 2025-2026

GUJARAT VIDYAPITH: AHMEDABAD

Curriculum Framework of Post Graduate Diploma in Computer Application (Department of Computer Science)

From the Desk of Vice Chancellor…

Dear All,

Any curriculum, at any level, must be firmly grounded in the objectives and goals that an educator or an educational institution aspires to achieve for its students. A course that trains students to solve mathematical equations must be very different from one that teaches them how to play a musical instrument, practice yoga, or conduct social research. Each subject requires its own methods, activities, and learning goals, which is why curriculum design is so important.

Therefore, curriculum is of utmost importance, as it determines how teachers and students will spend their time—in laboratories, in clinical practice, in creative endeavors, or in interactive lectures. It also reflects what a class, a department, a school, or an institution values; what it defines as its mission; and what it expects its graduates to accomplish. In this sense, the curriculum is the map that guides the essentials of learning from the classroom level to the institutional level.

The true success of any curriculum must be judged by its ability to achieve its intended objectives. It is a test of how well an institution—or an individual teacher—understands and articulates those objectives, and how effectively a pathway is created for students to attain success as defined by them. Curriculum is, in fact, a continuous chain of activities designed to translate broad educational goals into concrete practices, learning materials, and observable changes in behavior. A lesson plan, for instance, is curriculum at the classroom level, answering the critical questions: *What do I want my students to know? How can I engage them meaningfully? How will I measure what they have learned?*

For a society to achieve its educational aspirations, the curriculum must be both functional and relevant to its needs. Through careful management of curriculum, effective use of resources, and policies that bring systemic improvements, education can move society toward a more promising future. Indeed, curriculum is the very foundation of any academic institution—without it, the institution would lose its purpose and direction.

At Gujarat Vidyapith, established by Mahatma Gandhi in 1920 with its rich cultural and educational heritage, we remain committed to these ideals and we work with well-defined objectives to prepare our students for a brighter academic and social future.

It gives me immense pride and joy to announce the unveiling of the latest curriculum of Gujarat Vidyapith. This curriculum has been carefully designed in alignment with the objectives and guiding principles of the National Education Policy (NEP) 2020. I take this opportunity to place on record my deep appreciation for the efforts of the teaching faculty of Gujarat Vidyapith, the Members of the Board of Studies, and the Members of the Academic Council. Their dedication and vision have given shape to this comprehensive neo-curriculum, which will guide our students and our institution toward continued excellence.

With best wishes,

Dr. Harshad Patel
Vice Chancellor
Gujarat Vidyapith

Curriculum Framework

Post Graduate Diploma in Computer Application

(Department of Computer Science)

Effective From Academic Year 2025-2026

Department of Computer Science

Faculty of Information, Communication and Technology

Gujarat Vidyapith

Board of Studies

Chairperson:

Prof. Ajay Parikh
Professor & Dean, Faculty of Information, Communication and Technology, Gujarat Vidyapith, Ahmedabad.

External Experts:

1) **Prof. Rajiv Wankar**
   Professor, University of Hyderabad

2) **Prof. Nilesh Modi**
   Professor, Babasaheb Ambedkar Open University

Members from the Department:

1) **Prof. Dhiren Patel**
   Professor, Faculty of Information, Communication and Technology, Gujarat Vidyapith, Ahmedabad.

2) **Dr. Neepa Shah**
   Associate Professor, Faculty of Information, Communication and Technology, Gujarat Vidyapith, Ahmedabad.

3) **Mr. Kamaleshkumar Salunke**
   Assistant Professor, Faculty of Information, Communication and Technology, Gujarat Vidyapith, Ahmedabad.

4) **Dr. Ruchita Shah**
   Assistant Professor, Faculty of Information, Communication and Technology, Gujarat Vidyapith, Ahmedabad.

PROGRAMME STRUCTURE

Curriculum Framework- Post Graduate Diploma in Computer Application (Department of Computer Science) - 2025

Course Code	Course Name	Hours			Credit	Evaluations	
		Theory	Practical	Total		CCE	TEE
SEMESTER-1							
256010343001	Fundamentals of Computer and Internet	45	0	45	3	40	60
256010343002	Web Design-I	45	0	45	3	40	60
256010343003	Cloud Based Office Collaborative Tools and Accounting Package (Lab Based)	0	90	90	3	40	60
256010443004	Introduction to 'C' Programming	60	0	60	4	40	60
256010343005	Data Analytical and Visualization Dashboard (Lab Based)	0	90	90	3	40	60
256010243006	Lab based on Web Design-I	0	60	60	2	40	60
256010243007	Lab based on Introduction to 'C' Programming ('C')	0	60	60	2	40	60
Total		**150**	**300**	**450**	**20**	**280**	**420**
SEMESTER-2							
256010343008	Web Programming	45	0	45	3	40	60
256010343009	Web Design-II (Lab based)	0	90	90	3	40	60
256010243010	Open Source Framework –Case Study (Lab based)	0	60	60	2	40	60
256011043011	Internship	0	0	0	10	40	60
256010243012	Lab based on Web Programming	0	60	60	2	40	60
Total		**45**	**210**	**255**	**20**	**200**	**300**
GRAND TOTAL		**195**	**510**	**705**	**40**	**480**	**720**

*CCE- Continuous Comprehensive Evaluation; **TEE- Term End Evaluation

Programme Contents	Credits
Core Courses	**30**
Internship	**10**
Total Credits of Programme	**40**

Programme Outcomes (POs)

After successful completion of the PGDCA program, students will be able to:

PO-1	**Discipline Specific Knowledge**	To provide a strong foundation in the principles and practices of computer applications, including programming, web development and current topics in the vernacular language.
PO-2	**Problem Analysis**	To develop students' ability to identify, define, and analyze computational problems using logical and algorithmic thinking, relevant especially for solving local and rural challenges.
PO-3	**Experimental Skills**	Students will develop the ability to design, implement, and evaluate experiments and projects in the field of computer applications, applying theoretical knowledge to practical scenarios using modern tools and technologies.
PO-4	**Environment And Sustainability**	Develop sustainable IT solutions mindful of environmental impact, aligning with Gandhian principles of simplicity and ecological balance.
PO-5	**Ethics and Values**	Demonstrate ethical decision-making, and commitment to truth, non-violence, simplicity and service in the practice and application of computer science.
PO-6	**Communication**	Effectively communicate technical concepts in both Gujarati and English. Bridge local community needs with digital technologies through clear information exchange.Engage confidently in national and global digital initiatives using bilingual communication skills.
PO-7	**Modern Tool Usage**	To train students in using current technologies, software tools, and computing platforms, along with emerging digital practices like web development and GIS technologies.
PO-8	**Teamwork and Leadership**	Communicate technical concepts effectively through written reports and oral presentations, and demonstrate leadership and teamwork skills in multidisciplinary and multicultural settings.
PO-9	**Lifelong Learning**	Encourages continuous learning and adaptability, ensuring graduates stay updated with scientific advancements and societal changes.
PO-10	**Project Management**	Apply organizational and economic principles to plan and manage software and IT projects. Execute system development tasks efficiently in academic, industrial, and field settings.
PO-11	**Innovation and Entrepreneurship**	Demonstrate an entrepreneurial mindset by identifying real-world problems and proposing IT-based solutions. Apply innovative thinking and computing skills to develop practical and scalable technologies. Explore startup opportunities and contribute to the tech industry through creative digital initiatives.
PO-12	**Societal Contribution**	Apply computing skills to design technology solutions that address societal and community needs. Adopt ethical practices to ensure responsible and inclusive use of digital technologies. Promote digital inclusion and contribute to sustainable community development through IT initiatives.

Programme Specific Outcomes (PSOs)

After successful completion of the PGDCA program with a specialization in Computer Application, students will be able to:

PSO-1	Apply core principles of computer science, including logic and algorithms and programming language, to design and develop efficient software solutions for real-world problems.	Aligns with PO1 (Discipline Specific Knowledge), PO2 (Problem Analysis), and Gujarat Vidyapith's emphasis on strong academic and technical foundations.
PSO-2	Utilize modern programming languages (such as GIS and Web development tools) and digital tools for software development, data handling, and web-based applications, fostering hands-on experience in a rapidly evolving digital landscape.	Supports PO7 (Modern Tool Usage), Digital Fluency, and NEP 2020's focus on technology integration and skill-based education.
PSO-3	Demonstrate the ability to work independently and collaboratively on IT projects using system design principles, ethical practices, and sustainable approaches that serve rural and societal needs.	Fulfills PO5 (Ethics and Values), PO4 (Environment & Sustainability), and Gujarat Vidyapith's mission of value-based, socially relevant education.
PSO-4	Communicate effectively using technical, professional, and culturally rooted language in project documentation, presentations, and digital communication—promoting inclusive growth and respect for Indian knowledge systems.	Connects with PO6 (Communication), PO9 (Individual and Team Work), and PO12 (Societal Contribution), in line with Gandhian values and regional relevance.

CO Attainment Levels (OBE & NEP 2020 Aligned)

COs Attainment Levels	Level	Description	Attainment Criteria			
	Level 3	High	≥ 80% of students score above a set performance benchmark			
	Level 2	Moderate	60%–79% of students meet the performance benchmark			
	Level 1	Low	40%–59% of students meet the performance benchmark			
	Level 0	Not Attained	< 40% of students achieve the desired learning outcome			
Target Attainment (Benchmark)	**Cos**			**CO-1**	**CO-2**	**CO-3**	**CO-4**
	Target Level (%)			60	60	60	60

Program - PGDCA (Faculty of Information, Communication and Technology)

Semester- 1

Course Code 256010343001	Name of Course Fundamentals of Computer and Internet	Compulsory
Credit: 03	Teaching Scheme: Theory (45) - Practical (0)	Teaching Hours: 45

Course Outcomes (COs)

After completing this course, students will be able to

CO-1: Identify and describe the basic components of a computer system and explain their functions, including CPU, memory types, ports, and peripheral devices.

CO-2: Differentiate between system and application software, demonstrate familiarity with major operating system interfaces (Windows and Ubuntu), and recognize the working and purpose of various input devices.

CO-3: Classify different types of output and storage devices, explain their working principles, and compare storage media in terms of functionality and use cases.

CO-4: Explain the basic concepts of the Internet and the World Wide Web, demonstrate understanding of web tools like search engines and email, and describe methods of online communication.

Detailed Syllabus

Unit-1.

1.1 Introduction to Computers: Importance of computer literacy, Definition, Components of a computer, Computer as a powerful tool, Various types of software, Introduction of computer network, Categories of computers and their uses, Types of computer users

1.2 Components of System Unit: Components in system unit, Introduction of CPU, Bit, Byte and data representation, Types of memory, Types of expansion slots and cards, Serial, Parallel and USB Port, Components of notebook computer, Components of smart phone and tablet

Unit-2.

2.1 Operating Systems and Utility Programs: Types of software, Introduction to system and application software, Start up process for a personal computer, User interface, Common features of operating systems, Introduction to stand alone and network operating systems, Introduction of computer operations, Commands of Windows and Ubuntu operating system, Purpose of utilities: file viewer, file compression, diagnostic, uninstaller, disk scanner, disk defragmenter, backup, screen saver

2.2 Input Devices: Types of input, Types of pointing devices, Working of mouse, Types of mouse, Uses of PC video cameras and web cams, Scanners and other reading devices, Input devices for physically challenged users

Unit-3.

3.1 Input, Output and Storage: Categories of output, Types of display devices and Issues, Types of printers, Uses of speakers and headsets, Multimedia projectors and multifunction devices, Identify output options for physically challenged users, Storage and memory, Types of storage media and storage devices, Hard disk and data organization, Internet hard drive, Compact disc storage and data organization, Comparative study between CD-ROM, CD-R/W and DVD-ROM, Blue Ray

Unit-4.

4.1 Internet and World Wide Web: Introduction to Internet, Uses of Internet and World Wide Web, Ways to access Internet, URL formation and parsing, Introduction of search engine, Webcasting, Introduction to E-mail, FTP, newsgroups and message boards, mailing lists, chat rooms and instant messaging work

Mapping Matrix of POs, PSOs, and COs

Cos	POs													PSOs				
	1	2	3	4	5	6	7	8	9	10	11	12	Avg	1	2	3	4	Avg
CO-1	3	2	2	–	–	1	3	–	–	1	1	1	1.75	3	3	1	1	2
CO-2	3	2	2	–	1	1	2	–	–	1	–	–	1.71	3	2	2	1	2
CO-3	3	2	2	–	–	1	3	–	–	–	–	–	2.2	3	3	1	1	2
CO-4	2	1	–	1	1	3	2	1	1	–	1	2	1.5	2	2	2	3	2.25
Avg	2.75	1.75	2	1	1	1.5	2.5	1	1	1	1	1.5		2.75	2.5	1.5	1.5	2.06

3 = Strong Contribution, 2 = Moderate Contribution, 1 = Slight Contribution, --- = No Significant Contribution

Teaching Pedagogy

CO-1 (Unit: 1)	
CO-2 (Unit: 2)	● Lecture, Examples, Demonstration, Problem Solving, Assignments
CO-3 (Unit: 3)	
CO-4 (Unit: 4)	

Assessment Method

Continuous Comprehensive Evaluation 40 Marks	COs	Marks	Exam Component			
			Class Test	Assignment	Presentation	Involvement
	CO-1	10	5			
	CO-2	10	5	7	7	6
	CO-3	10	5			
	CO-4	10	5			
Term-End Evaluation 60 Marks	COs	Marks	Exam Component			
	CO-1	15	Term End Examination			
	CO-2	15				
	CO-3	15				
	CO-4	15				

References

Books:

- Introduction to Information Technology, V. Raja Raman

- Computer Fundamentals, Pradeep Sinha and Priti Sinha

- Computer Concepts and Web Technology By- Dr. Sipi Dubey P

Online Resources & Tools:
- NPTEL, Swayam
- e-PG Pathshala

Program – PGDCA (Faculty of Information, Communication and Technology)

Semester- 1

Course Code 256010343002	Name of Course Web Design – I	Compulsory
Credit: 03	Teaching Scheme: Theory (45) - Practical (0)	Teaching Hours: 45

Course Outcomes (COs)

After completing this course, students will be able to

CO-1: Students will be able to create well-structured web pages using basic HTML tags and implement hyperlinks using absolute and relative URLs, anchors, and document linking for effective navigation.

CO-2: Students will be able to design web page layouts using HTML tables and embed images with appropriate formatting, alignment, alternative text, and use of image maps to enhance visual presentation.

CO-3: Students will be able to develop multi-frame web layouts and build interactive HTML forms for collecting user input using form elements and attributes.

CO-4: Students will be able to apply CSS styling techniques using inline, internal, and external stylesheets to control fonts, colors, layout, and overall web page appearance.

Detailed Syllabus

Unit-1.

1.1 **Introduction to HTML:** Mark-up language, HTML editors & browsers, HTML tags and attributes, <!doctype> , <html>, <head>, <title>,<body>, Heading tags <h1> ….<h6>, Paragraph <p>, Formatting tags, Lists, Text effects, Colours, Horizontal rules, Line breaks

1.2 **Links:** URL Anatomy, Types of URL, Absolute & relative URLs, Creating link and anchors, Link to other document, Link to same document, Linking Specific location in a document, Name anchors

Unit-2.

2.1 **Tables**

2.2 **Working with Images:** Understanding Image Basics, Image height, width, alignment, border, alternative text, Background image, Image as link, Image map

Unit-3.

3.1 **Frames:** Introduction, Creating frames, Formatting frames, Effective navigation using target names, Inline frames

3.2 **Forms**: Introduction, Determining content, Form tags, submit & reset buttons, Form processing

Unit-4.

4.1 **Cascading Style Sheets:** Introduction to CSS, Inline, internal & external CSS, Implementing CSS in HTML, Rules, selectors, declaration, property & value, Setting properties : font, text, box, order, colour & background, classification, Formatting webpage with CSS

Mapping Matrix of POs, PSOs, and COs

Cos	POs													PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Avg**	**1**	**2**	**3**	**4**	**Avg**
CO-1	3	2	2	–	1	2	3	1	2	2	2	2	**2.0**	3	3	2	2	**2.5**
CO-2	3	1	2	–	1	2	3	–	2	2	2	2	**1.91**	3	3	2	2	**2.5**
CO-3	3	2	3	–	1	3	3	2	2	3	3	3	**2.55**	3	3	3	3	**3**
CO-4	3	2	2	–	1	2	3	1	2	2	3	2	**2.09**	3	3	2	3	**2.75**
Avg	3	1.75	2.25	–	1.0	2.25	3.0	1.33	2.0	2.25	2.5	2.25		3	3	2.25	2.5	**2.69**

3 = Strong Contribution, 2 = Moderate Contribution, 1 = Slight Contribution, --- = No Significant Contribution

Teaching Pedagogy

CO-1 (Unit: 1)	• Examples, Questioning, Assignment
CO-2 (Unit: 2)	• Examples, Questioning, Assignment
CO-3 (Unit: 3)	• Examples, Questioning, Assignment
CO-4 (Unit: 4)	• Problem Solving, Experimental, Project

Assessment Method

Continuous Comprehensive Evaluation 40 Marks	**COs**	**Marks**	**Exam Component**		
			Class Test	**Assignment**	**Presentation**
	CO-1	10	5	7	13
	CO-2	10	5		
	CO-3	10	5		
	CO-4	10	5		
Term-End Evaluation 60 Marks	**COs**	**Marks**	**Exam Component**		
	CO-1	15	Term End Examination		
	CO-2	15			
	CO-3	15			
	CO-4	15			

References

Books:

- Web enabled commercial application development using HTML, Javascript, DHTML and PHP by Evan Bayross, BPB publication

- Introducing HTML5 (Voices That Matter) by Bruce Lawson, Remy Sharp

- HTML5 and CSS3 Made Simple by Ivan Bayross BPB Publication

Online Resources & Tools:

- https://www.w3schools.com/HTML/

Program - PGDCA (Faculty of Information, Communication and Technology)

Semester- 1

Course Code 256010343003	Name of Course Cloud Based Office Collaborative Tools and Accounting Package (Lab Based)	Compulsory
Credit: 03	Teaching Scheme: Theory (0) - Practical (90)	Lab Hours: 90

Course Outcomes (COs)

After completing this course, students will be able to

CO-1:   Effectively use cloud-based office automation tools, particularly Google Workspace applications like Docs and Drive, to create, format, and collaborate on documents, applying advanced features such as mail merge and version control.

CO-2:   Students will demonstrate proficiency in spreadsheet management using Google Sheets, including formula application, data analysis, and visualization, as well as the ability to design and deliver engaging presentations using Google Slides with multimedia and collaborative editing.

CO-3:   Students will be able to design and deploy interactive Google Forms tailored for educational purposes, incorporating diverse question types and logic branching, and analyze responses to generate actionable insights.

CO-4:   Students will integrate multiple Google Workspace applications to complete collaborative projects, while also gaining foundational accounting skills through hands-on practice with Tally, including company setup, voucher recording, inventory management, taxation, and reporting.

Detailed Syllabus

Unit-1.

1.1 **Introduction:** Introduction to cloud, Different cloud application, advantages and disadvantages of cloud based collaborative tools, Introduction to office automation tool like word, excel, and PowerPoint, limitation of office automation tool, Introduction to Google Workspace, Overview of Google Workspace and its applications, Setting up Google account and navigating the Google Drive interface, Understanding cloud storage and file organization, Google Docs, Creating and formatting documents: text, paragraphs, headings, fonts, styles, Inserting and formatting images, tables, links, and other media, Collaboration tools: sharing documents, real-time editing, comments and suggestions, Document templates and customization options, Advanced features: mail merge, document version history, add-ons.

Unit-2.

2.1 **Google Sheets:** Spreadsheet basics: cells, rows, columns, sheets, Data entry and formatting: numbers, dates, text, formulas, Functions and formulas: SUM, AVERAGE, IF, VLOOKUP etc., Data analysis tools: sorting, filtering, conditional formatting, Charts and graphs: creating and customizing visual representations of data, Collaboration in Sheets: sharing spreadsheets, simultaneous editing, comments.

2.2 **Google Slides:** Creating and organizing presentations: slides, layouts, themes, Adding and formatting text, images, shapes and multimedia, Slide transitions and animations, Collaboration features: sharing presentations, real-time editing, comments, Presenting effectively: tips for delivery, speaker notes, audience engagement.

Unit-3.

3.1 **Introduction to Google Forms:** Introduction to Google Forms, Importance and applications in educational settings, Examples of Google Forms in academic use.

3.2 **Getting Started with Google Forms:** Creating and managing a Google Account, Basic form creation: title, description, and layout.

3.3 **Designing Effective Questions**

3.4 Question Types and Their Uses: Multiple choice, checkboxes, dropdowns, Short answer, paragraph, linear scale, Date, time, and file upload.

3.5 Crafting Questions for Different Purposes: Designing surveys for feedback, Creating quizzes and assessments, Using sections and logic branching.

3.6 Basic Response Analysis: Viewing responses in Google Forms, Generating summary charts and graphs.

3.7 Case Studies of Google Forms in Education: Examples of effective Google Forms used in UG courses, Student feedback forms, Course evaluation forms.

Unit-4.

4.1 Integration and Project Work: Integrating Google Docs, Sheets and Slides for comprehensive projects, Collaborative project: students work in teams to create a document, spreadsheet and presentation on a given topic, Peer review and feedback sessions, Final project submission and presentation.

4.2 Group assignment: Create a comprehensive Google Form for chosen scenario, Peer review and feedback.

4.3 Tally: Introduction to Tally & Company Setup, Accounting Masters: Groups and Ledgers, Voucher Entry & Transaction Recording, Inventory Management Basics, Advanced Transaction Features (Cost Centers, Budgets, Banking), Taxation Setup: GST and TDS, Reporting, Data Analysis & Finalization

Mapping Matrix of POs, PSOs, and COs

COs	POs													PSOs				
	1	2	3	4	5	6	7	8	9	10	11	12	Avg	1	2	3	4	Avg
CO-1	3	2	2	–	–	3	3	2	–	–	1	2	2.3	3	3	1	2	2.25
CO-2	3	2	3	–	–	3	3	3	2	–	1	2	2.5	3	3	1	2	2.25
CO-3	2	3	2	–	–	2	3	3	2	–	1	2	2.2	2	3	1	2	2
CO-4	3	3	3	2	2	3	3	3	3	2	2	3	2.7	3	3	2	3	2.75
Avg	2.75	2.50	2.50	2.00	2.00	2.75	3.00	2.75	2.33	2.00	1.25	2.25		2.75	3	1.25	2.25	2.167

3 = Strong Contribution, 2 = Moderate Contribution, 1 = Slight Contribution, --- = No Significant Contribution

Teaching Pedagogy

CO-1 (Unit: 1)	● Laboratory Teaching, Assignment , Practical, Seminar, Case Study
CO-2 (Unit: 2)	
CO-3 (Unit: 3)	
CO-4 (Unit: 4)	

Assessment Method

Continuous Comprehensive Evaluation 40 Marks	COs	Marks	Exam Component		
			Class Test	Assignment	Participation/ Performance
	CO-1	10	5	13	7
	CO-2	10	5		
	CO-3	10	5		
	CO-4	10	5		
Term-End Evaluation 60 Marks	COs	Marks	Exam Component		
	CO-1	15	Term End Examination		
	CO-2	15			
	CO-3	15			
	CO-4	15			

References

Books:

- Google Workspace Learning Center - Official Google documentation and tutorials.

- "Google Workspace for Dummies" by Steve Schwartz.

- Online tutorials and guides provided by Google and other educational platforms.

- "Google Drive & Docs In 30 Minutes" by Ian Lamont

- The New Google Form Guide: Tips and Tricks for the Classroom" by Andrew Howard

Online Resources & Tools:

- Google Forms Help Centre: Google Support

- YouTube tutorials on Google Forms

Program – PGDCA (Faculty of Information, Communication and Technology)		
Semester- 1		
Course Code **256010443004**	**Name of Course** **Introduction to 'C' Programming**	**Compulsory**
Credit: 04	**Teaching Scheme: Theory (60) - Practical (0)**	**Teaching Hours: 60**
Course Outcomes (COs)		

After completing this course, students will be able to

CO-1:   Design simple algorithms and represent those using flowcharts to solve basic computational problems.

CO-2:   Write and execute basic C programs using appropriate syntax for variables, assignments, arithmetic operations, and input/output functions.

CO-3:   Implement decision-making and iterative control structures in C programs to solve logical problems.

CO-4:   Use arrays, strings, and user-defined functions to develop structured and modular C programs.

Detailed Syllabus

Unit-1.

   1.1 Algorithms and Flowcharts: Writing algorithms & drawing flow charts

Unit-2.

   2.1 **Introduction to C Programming:** An Introduction to declarations, Assignments & variables, Integer Arithmetic expressions, scanf & printf statements

Unit-3.

   3.1 **Conditions & Loops:** If-else statement, Nested if .. else, While and do while loops, for loop, Continue and break Statement, Switch statement

Unit-4.

   4.1 Arrays: Array, Single-dimensional array, Double-dimensional array, Character array, Strings and string functions, User-defined functions

Mapping Matrix of POs, PSOs, and COs

COs	POs													PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Avg**	**1**	**2**	**3**	**4**	**Avg**
CO-1	3	3	2	–	1	2	2	1	2	2	2	2	**2.0**	3	2	1	2	**2**
CO-2	3	2	3	–	1	2	3	1	2	3	2	2	**2.27**	3	2	1	2	**2.25**
CO-3	3	3	3	–	1	2	3	2	2	3	3	2	**2.45**	3	3	1	2	**2.5**
CO-4	3	2	3	–	1	2	3	2	2	3	3	2	**2.36**	3	3	1	3	**2.5**
Avg	3	2.5	2.75	–	1.0	2.0	2.75	1.5	2.0	2.75	2.5	2.0		3	2.5	1	2.75	**2.31**

3 = Strong Contribution, 2 = Moderate Contribution, 1 = Slight Contribution, --- = No Significant Contribution

Teaching Pedagogy

CO-1 (Unit: 1)	• Examples, Questioning, Assignment
CO-2 (Unit: 2)	• Examples, Questioning, Assignment
CO-3 (Unit: 3)	• Examples, Questioning, Assignment
CO-4 (Unit: 4)	• Problem Solving, Experimental, Project

Assessment Method					
Continuous Comprehensive Evaluation 40 Marks	**COs**	**Marks**	**Exam Component**		
			Class Test	**Assignment**	**Presentation**
	CO-1	10	5	7	13
	CO-2	10	5		
	CO-3	10	5		
	CO-4	10	5		
Term-End Evaluation 60 Marks	**COs**	**Marks**	**Exam Component**		
	CO-1	15	Term End Examination		
	CO-2	15			
	CO-3	15			
	CO-4	15			
References					

Books:

● The Let us C, by Yashwant Karnitkar, publisher Infinity Science Press; 8th Revised edition

Online Resources & Tools:

● https://www.w3schools.com/c/

Program - PGDCA (Faculty of Information, Communication and Technology)		
Semester- 1		
Course Code **256010343005**	**Name of Course** **Data Analytics and Visualisation Dashboard (Lab Based)**	**Compulsory**
Credit: 03	**Teaching Scheme: Theory (0) - Practical (90)**	**Lab Hours: 90**
Course Outcomes (COs)		

After completing this course, students will be able to

CO-1:   Import, clean, and prepare data from Google Sheets into Google Data Studio, and apply foundational visualization techniques using charts and tables.

CO-2:   Implement aggregation techniques and apply various visual controls in Data Studio to enhance interactivity and comparison within reports.

CO-3:   Design and interpret advanced chart types such as time series, geo maps, and combo charts, and transform static reports into dynamic dashboards using interactive elements.

CO-4:   Design and build customized dashboards using calculated fields and real-world case studies, demonstrating the ability to solve domain-specific problems through data visualization.

Detailed Syllabus

Unit-1.

1.1 **Introduction:** Introduction to Data analytics and visualization, Introduction to Source Data, Data Cleaning, introduction to Charts, Data Connector, Loading Data in Google Sheets, Loading Data in Data Studio from Google Sheets, Introduction to the Data Studio Interface and Theme.

1.2 **Table Chart:** Introduction to Chart and table, Data Tab, Style Tab, creating a Table -understanding Dimensions & Metrics, Date Ranges & Comparisons, Drill Down & Optional Metrics, Styling & Formatting Options

Unit-2.

2.1 **Aggregation:** Understanding the concept of Aggregation, different way to implement Aggregation on table metric column, Comparison Calculations Running Calculations

2.2 **Pivot Table and Scorecards Visual Controls:** Drop-Down & Fixed Size List Controls, Input Box Control, Advanced Filter Control, Slider Control, Date Range Control, Filter in Visuals

Unit-3.

3.1 **Charts:** Time Series Charts, Sparklines (Charts without Axis), Pie & Donut Charts Using Interactions to make your Dashboard truly Dynamic, Converting One Visual to another, Bar & Column Charts, Bubble Maps, Filled Maps, Filled Maps vs Geo Maps, Combo Charts, Tree Maps, Area Charts, Metric Sliders, Make Report Level Filters

Unit-4.   Design and Build your own Dashboard

4.4 **Custom Fields:** Adding a Custom Field, Finding Profit Margin using Custom Fields, Creating Months field from Date Field

4.5 **Case Studies & Implementation:**

    4.5.1   Admission Dashboard

    4.5.2   HRM Dashboard

    4.5.3   Research & Extension Dashboard

    4.5.4   Any other

Mapping Matrix of POs, PSOs, and COs

COs	POs													PSOs				
	1	2	3	4	5	6	7	8	9	10	11	12	Avg	1	2	3	4	Avg
CO-1	3	2	2	–	1	2	3	–	2	2	1	2	**2**	3	2	1	2	**2**
CO-2	3	3	2	–	1	2	3	1	2	2	2	2	**2.09**	3	2	1	2	**2**
CO-3	3	3	3	–	1	2	3	2	2	2	2	2	**2.27**	3	2	1	2	**2**
CO-4	3	3	3	1	2	3	3	3	2	3	3	3	**2.66**	3	3	2	3	**2.75**
Avg	3	2.75	2.5	1	1.25	2.25	3	2	2	2.25	2	2.25		3	2.25	1.25	2.25	2.19

3 = Strong Contribution, 2 = Moderate Contribution, 1 = Slight Contribution, --- = No Significant Contribution

Teaching Pedagogy

CO-1 (Unit: 1)	
CO-2 (Unit: 2)	● Experimental, Group Discussion, Presentation, Case Study, Seminar
CO-3 (Unit: 3)	
CO-4 (Unit: 4)	

Assessment Method

Continuous Comprehensive Evaluation 40 Marks	COs	Marks	Exam Component		
			Class Test	Assignment	Participation/ Performance
	CO-1	10	5		
	CO-2	10	5	13	7
	CO-3	10	5		
	CO-4	10	5		

Term-End Evaluation 60 Marks	COs	Marks	Exam Component
	CO-1	15	Term End Examination
	CO-2	15	
	CO-3	15	
	CO-4	15	

References

Books:

● 01-ડેટા વિઝ્યુઅલાઇઝેશન ડેશબોર્ડની રચના અને નિર્માણ, Dr. Ajay Parikh, Dr. Vinod Desai, Publication-Gujarat Vidyapith

Online Resources & Tools:

● https://marketingplatform.google.com/about/data-studio/

Program - PGDCA (Faculty of Information, Communication and Technology)

Semester- 1

Course Code 256010243006	Name of Course Lab based on Web Design-I	Compulsory
Credit: 02	Teaching Scheme: Theory (0) - Practical (60)	Lab Hours: 60

Course Outcomes (COs)

After completing this course, students will be able to

CO-1: Understand the structure of HTML documents and create web pages using basic tags and hyperlinks.

CO-2: Design and implement tables and embed images effectively in web pages with appropriate attributes.

CO-3: Develop web pages using frames and design interactive forms with various input controls.

CO-4: Apply CSS techniques to style and format web pages for improved presentation and user experience.

Mapping Matrix of POs, PSOs, and COs

COs	POs													PSOs				
	1	2	3	4	5	6	7	8	9	10	11	12	Avg	1	2	3	4	Avg
CO-1	3	2	2	–	–	2	3	–	–	–	2	2	2.29	3	3	2	2	2.5
CO-2	3	–	2	–	–	–	3	–	–	–	–	2	2.5	3	3	1	2	2.25
CO-3	3	2	3	–	–	2	2	2	–	2	2	2	2.2	3	3	2	2	2.5
CO-4	3	–	2	–	–	2	3	–	–	–	2	2	2.33	3	3	2	2	2.5
Avg	3	2.0	2.25	–	–	2.0	2.75	2.0	–	2.0	2.0	2.0		3	3	1.75	2	2.44

3 = Strong Contribution, 2 = Moderate Contribution, 1 = Slight Contribution, --- = No Significant Contribution

Teaching Pedagogy

CO-1 (Unit: 1)	
CO-2 (Unit: 2)	● Experiential Learning, Demonstration and Guided Practice, Project-Based Learning, Reflective Practice
CO-3 (Unit: 3)	
CO-4 (Unit: 4)	

Assessment Method

Continuous Comprehensive Evaluation 40 Marks	COs	Marks	Exam Component		
			Class Test	Assignment	Participation/ Performance
	CO-1	10	5	13	7
	CO-2	10	5		
	CO-3	10	5		
	CO-4	10	5		
Term-End Evaluation 60 Marks	COs	Marks	Exam Component		
	CO-1	15	Term End Examination		
	CO-2	15			
	CO-3	15			
	CO-4	15			

Program - PGDCA (Faculty of Information, Communication and Technology)		
Semester- 1		
Course Code **256010243007**	**Name of Course** **Lab based on Introduction to 'C' Programming ('C')**	**Compulsory**
Credit: 02	**Teaching Scheme: Theory (0) - Practical (60)**	**Lab Hours: 60**
Course Outcomes (COs)		

After completing this course, students will be able to

CO-1: Develop the ability to design and represent problem-solving techniques using algorithms and flowcharts.

CO-2: Demonstrate fundamental skills in writing C programs using basic syntax, data types, input/output, and arithmetic operations.

CO-3: Apply decision-making and looping constructs to develop programs that solve iterative and conditional problems effectively.

CO-4: Utilize arrays, strings, and user-defined functions to create modular and efficient C programs for data handling and processing.

Mapping Matrix of POs, PSOs, and COs

COs	POs													PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Avg**	**1**	**2**	**3**	**4**	**Avg**
CO-1	3	3	2	–	–	1	2	–	–	–	1	2	+	3	2	1	2	2
CO-2	3	2	3	–	1	2	3	2	1	1	–	–	2.11	3	3	2	1	2.25
CO-3	3	3	3	–	1	2	3	3	2	2	2	1	2.36	3	3	3	2	2.75
CO-4	3	2	3	–	1	2	3	3	2	1	2	2	2.18	3	3	3	2	2.75
Avg	3	2.5	2.75	-	1.0	1.75	2.75	2.67	1.75	1.25	1.75	1.67		3	2.75	2.25	1.75	2.44

3 = Strong Contribution, 2 = Moderate Contribution, 1 = Slight Contribution, --- = No Significant Contribution

Teaching Pedagogy

CO-1 (Unit: 1)	
CO-2 (Unit: 2)	• Experiential Learning, Demonstration and Guided Practice, Project-Based Learning, Reflective Practice
CO-3 (Unit: 3)	
CO-4 (Unit: 4)	

Assessment Method

	COs	**Marks**	**Exam Component**		
Continuous Comprehensive Evaluation 40 Marks			**Class Test**	**Assignment**	**Participation/ Performance**
	CO-1	10	5	13	7
	CO-2	10	5		
	CO-3	10	5		
	CO-4	10	5		
Term-End Evaluation 60 Marks	**COs**	**Marks**	**Exam Component**		
	CO-1	15	Term End Examination		
	CO-2	15			
	CO-3	15			
	CO-4	15			

Program - PGDCA (Faculty of Information, Communication and Technology)

Semester- 2

Course Code 256010343008	Name of Course Web Programming	Compulsory
Credit: 03	Teaching Scheme: Theory (45) - Practical (0)	Teaching Hours: 45

Course Outcomes (COs)

After completing this course, students will be able to

CO-1: Explain the structure and functionality of dynamic web applications, including the role of client-side and server-side scripting, and demonstrate basic configuration of the Apache Web Server.

CO-2: Write and execute basic PHP programs using variables, control structures, arrays, and predefined functions to perform string, mathematical, and file system operations.

CO-3: Design and create relational databases in MySQL using appropriate data types, and apply DDL and DML statements to manage tables and data.

CO-4: Integrate PHP with MySQL to perform database operations such as inserting, updating, deleting, and retrieving data through server-side scripting.

Detailed Syllabus

Unit-1.

1.1 Introduction to Web application concepts, DHML and Programming: Introduction to DHTML and Dynamic Web Pages, Purpose of Web Application, Web concepts, Communication between Web Server and Browser (Request – Response Architecture), HTTP basics and HTTP Request and Response, Client Side Scripting (JavaScript, Jscript, VB Script), Server Side Scripting, Introduction to Web Programming, Introduction to Web server and hosting, Purpose, Installation and configuration of Apache Web Server

Unit-2.

2.1 **Introduction to PHP:** What is PHP, What Can PHP Do, Why PHP, Advantages of PHP, Installation and configuration of PHP, What is PHP File, Writing PHP Program, Basic of PHP Programming, Syntax and semantics, Comments, Variables and Variable Types, Control Structure and Loops, Array

2.2 **PHP functions:** String functions, Array functions, Mathematical function, File system function, Date and time function, Miscellaneous Functions

Unit-3.

3.1 **Introduction to MySQL:** Fundamentals of RDBMS, About Database, Introduction to Table, Row and Column, What is SQL, Use of SQL, DML and DDL in SQL, MySQL, Installation and Configuration of MySQL Database, How to create Database, Create Tables, Fields, Data types

Unit-4.

4.1 PHP - MySQL Programming: Configuration of PHP and MySQL, Operation on MySQL using PHP, PHP-MySQL functions for Connect PHP and MYSQL, Create database, Create table, Insert, update delete and select data

Mapping Matrix of POs, PSOs, and COs

COs	POs													PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Avg**	**1**	**2**	**3**	**4**	**Avg**
CO-1	3	2	2	–	1	2	3	1	–	1	1	1	**1.7**	2.5	3	1	1.5	**2**
CO-2	3	3	2	–	1	2	3	–	–	1	1	–	**2**	3	3	1	2	**2.25**
CO-3	3	2	3	–	–	1	3	–	–	1	–	–	**2.16**	2.5	3	0	1	**1.63**
CO-4	3	2	3	–	–	1	3	–	–	2	1	1	**2**	2.5	3	0	1	**1.63**
Avg	3	2.25	2.5	–	1	1.5	3	1	–	1.25	1	1		2.62	3	0.5	1.38	1.88

3 = Strong Contribution, 2 = Moderate Contribution, 1 = Slight Contribution, --- = No Significant Contribution

Teaching Pedagogy

CO-1 (Unit: 1)	
CO-2 (Unit: 2)	● Lecture, Seminar, Examples, Problem Solving, Experiments
CO-3 (Unit: 3)	
CO-4 (Unit: 4)	

Assessment Method

	COs	Marks	Exam Component			
			Class Test	**Assignment**	**Presentation**	**Involvement**
Continuous Comprehensive Evaluation 40 Marks	**CO-1**	10	5			
	CO-2	10	5	7	7	6
	CO-3	10	5			
	CO-4	10	5			
Term-End Evaluation 60 Marks	**COs**	**Marks**	**Exam Component**			
	CO-1	15	Term End Examination			
	CO-2	15				
	CO-3	15				
	CO-4	15				

References

Books:

- Web Enabled Commercial Application Development using HTML, JavaScript, DHML and PHP, Ivan Bayross

- Beginning PHP, Apache, MySQL Web Development, Michael Glass, Yann Le

- Beginning PHP 4 Databases, Christopher Scollo, Harish Rawat, Dipak Thomas, Sanjay Abraham, Andrew Hill and Jim Hubbard

- PHP MySql Website Programming, Chris Bea, Mike Duzzard, Jessy White

- MySql PHP Database Applications, Jay Greenspan and Brad Bulger

- Sam's Teach Yourself PHP 4 in 24 Hours, Matt Zandstra

- PHP 5.1 For Beginners, Ivan Bayross

Online Resources & Tools:

- www.w3schools.com

- www.tutorialspoint.com

Program - PGDCA (Faculty of Information, Communication and Technology)

Semester- 2

Course Code 256010343009	Name of Course Web Design – II (Lab Base)	Compulsory
Credit: 03	Teaching Scheme: Theory (0) - Practical (90)	Lab Hours: 90

Course Outcomes (COs)

After completing this course, students will be able to

CO-1: Apply fundamental JavaScript concepts including syntax, data types, operators, and control structures to develop basic interactive browser scripts.

CO-2: Demonstrate the ability to manipulate arrays, create and manage objects, and implement modular code using functions in JavaScript.

CO-3: Design and structure responsive web pages using HTML and CSS, and manipulate webpage content dynamically using the DOM API.

CO-4: Use jQuery to efficiently select, modify, and animate HTML elements, and handle events for interactive web applications.

Detailed Syllabus

Unit-1.

1.1 **JavaScript:** What is JavaScript? Brief history of JavaScript, Common use-cases, Runtime environments, Overview of language features, Running JavaScript in the browser Links

1.2 **Basic Syntax**: Values and literals, Primitive types: Numbers. Integer and floating point as a single type, Special floating point numbers, Rounding errors, the Math library, Strings: Immutability of strings. + and [] operators, toString, Common string utilities, Booleans, Ternary operator, null and undefined, Regular expressions, The typeof operator, The === and !== operators. Control statements

Unit-2.

2.1 **Arrays and Objects:** Array insertion and deletion, Array length, Multidimensional arrays, Object creation, modification and lookup syntax, Nested objects. Object methods. The delete keyword. The for... in statement

2.2 **Functions:** Function declaration and invocation syntax, Anonymous functions, Functions as data, the arguments object, and Optional parameters. Named parameters, Function overloading

Unit-3.

3.1 **HTML, CSS & DOM:** Tags, Document structure: Elements, Text, forms, images, blocks and frames, Selectors, Cascading and inheritance, Text and colour styles: The box model, Layout, The DOM as an document API, Browser information, The setTimer and setTimeout, Element lookup, Attribute getting and setting, Creating and deleting nodes, EventsForms

Unit-4.

4.1 **jQuery:** Overview of jQuery, Cross-browser compatibility, The $ function object, Element selectors, Tree traversal, Node creation, insertion, modification and deletion, Getting and setting attributes, styles and class, Wrapping and unwrapping DOM raw objects, The chaining pattern, Event handling, bind and unbind, Keyboard and mouse events, Event delegation and bubbling, Animation

Mapping Matrix of POs, PSOs, and COs

COs	POs													PSOs				
	1	2	3	4	5	6	7	8	9	10	11	12	Avg	1	2	3	4	Avg
CO-1	3	2	2	–	–	1	3	–	2	–	–	1	2.0	2.5	3	0	1.33	1.96
CO-2	3	3	2	–	–	–	3	1	2	1	2	1	2.0	3	3	0	1.5	1.88
CO-3	3	2	3	1	1	2	3	1	2	1	2	3	2.1	2.5	3	1	2.33	2.21
CO-4	3	2	3	1	–	2	3	2	2	2	3	2	2.3	2.5	3	1	2	2.13
Avg	3	2.25	2.5	1.0	1.0	1.75	3.0	1.33	2.0	1.33	2.33	1.75		2.63	3	0.5	1.79	1.98

3 = Strong Contribution, 2 = Moderate Contribution, 1 = Slight Contribution, --- = No Significant Contribution

Teaching Pedagogy

CO-1 (Unit: 1)	
CO-2 (Unit: 2)	● Lecture, Seminar, Activity, Demonstration, Experiments, Project
CO-3 (Unit: 3)	
CO-4 (Unit: 4)	

Assessment Method

	COs	Marks	Exam Component			
			Quiz	Practical Test	Assignment	Participation/ Performance
Continuous Comprehensive Evaluation 40 Marks	CO-1	10	10	10	13	7
	CO-2	10				
	CO-3	10				
	CO-4	10				
Term-End Evaluation 60 Marks	COs	Marks	Exam Component			
	CO-1	15	Term End Examination			
	CO-2	15				
	CO-3	15				
	CO-4	15				

References

Books:

- Web enabled commercial application development using HTML, Javascript, DHTML and PHP by Evan Bayross, BPB publication

- JavaScript Bible by Danny Goodman, Michael Morrison, Paul Novitski, Tia Gustaff Rayl, WILEY Publication

- Introducing HTML5 (Voices That Matter) by Bruce Lawson, Remy Sharp

- HTML5 and CSS3 Made Simple by Ivan Bayross BPB Publication

Online Resources & Tools:

- https://www.w3schools.com/javascript/
- https://www.w3schools.com/jQuery/

Program - PGDCA (Faculty of Information, Communication and Technology)

Semester- 2

Course Code 256010243010	Name of Course Open Source Framework Case Study (Lab Based)	Compulsory
Credit: 02	Teaching Scheme: Theory (0) - Practical (60)	Lab Hours: 60

Course Outcomes (COs)

After completing this course, students will be able to

CO-1: Explain the principles of open-source software and describe the key components and use cases of WordPress in real-world applications.

CO-2: Analyze the architecture of WordPress, including its file structure, themes, and plugins, and apply customization techniques using child themes and hooks.

CO-3: Implement security measures and performance optimization techniques for WordPress websites, including caching, SEO, and accessibility standards.

CO-4: Design, develop, and deploy a functional WordPress-based website tailored to a specific case study, incorporating best practices in structure, usability, and scalability.

Detailed Syllabus

Unit-1. Introduction to WordPress and Open Source

   1.1 **Overview of Open Source Software:**

      1.1.1 Definition, principles, and benefits of open-source software.

      1.1.2 Licensing models: GPL and their application in WordPress**.**

   1.2 **Introduction to WordPress**:

      1.2.1 Evolution and history of WordPress.

      1.2.2 **Key components:** Core, Themes, Plugins, and Widgets.

      1.2.3 **Community-driven development:** WordPress ecosystem and contributions.

   1.3 **Use Cases of WordPress:**

      1.3.1 Blogs, business websites, e-commerce, portfolios, and large-scale solutions.

Unit-2. WordPress Framework Architecture

   2.1 **Core Architecture of WordPress:**

      2.1.1 WordPress file structure and roles.

      2.1.2 Database schema and its interaction with core functionalities.

      2.1.3 REST API overview.

   2.2 **Themes in WordPress:**

      2.2.1 Anatomy of a WordPress theme.

      2.2.2 Theme hierarchy and template tags.

      2.2.3 Customization using child themes.

   2.3 **Plugins in WordPress**

      2.3.1 Plugin structure and development basics.

      2.3.2 Hooks and filters for extending WordPress functionality.

      2.3.3 Integrating third-party plugins.

Unit-3. Security, Performance, and Optimization

   3.1 **WordPress Security Best Practices:**

      3.1.1 Securing WordPress core, themes, and plugins.

      3.1.2 User roles, permissions, and authentication.

      3.1.3 Common vulnerabilities: XSS, SQL injection, and mitigation techniques.

   3.2 **Performance Optimization**

      3.2.1 Caching mechanisms: Browser, server, and object caching.

      3.2.2 Image and asset optimization.

      3.2.3 Content Delivery Network (CDN) integration.

3.3 **SEO and Accessibility**

    3.3.1   SEO best practices for WordPress sites.

    3.3.2   Accessibility standards and tools for compliance.

Unit-4.   Real-World Applications and Case Studies

    4.1 Case Study 1: E-commerce Website Using Woo Commerce

        4.1.1   Requirements gathering and architecture design.

        4.1.2   Building and customizing an online store.

        4.1.3   Challenges: Scalability, payment integration, and customer management.

    4.2 Case Study 2: Blog or News Portal

        4.2.1   Designing a content-heavy site.

        4.2.2   Managing categories, tags, and custom post types.

        4.2.3   Monetization strategies: Ads, subscriptions, and more.

    4.3 Practical Project

        4.3.1   Students design, build, and deploy a WordPress application tailored to a given scenario.

        4.3.2   Peer review and presentation of projects.

Mapping Matrix of POs, PSOs, and COs

COs	POs													PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Avg**	**1**	**2**	**3**	**4**	**Avg**
CO-1	3	2	1	–	1	2	3	1	1	–	2	2	**1.8**	2.5	3	1	1.67	**2.04**
CO-2	3	3	2	–	–	1	3	2	1	2	2	1	**2**	3	3	-	1	**1.75**
CO-3	3	2	3	2	2	2	3	2	2	1	2	2	**2.16**	2.5	3	2	2	**2.38**
CO-4	3	3	3	2	2	2	3	3	2	3	3	3	**2.66**	3	3	2	2.33	**2.58**
Avg	**3**	**2.5**	**2.25**	**2**	**1.66**	**1.75**	**3**	**2**	**1.5**	**2**	**2.25**	**2**		**2.75**	**3**	**1.67**	**1.75**	**2.29**

3 = Strong Contribution, 2 = Moderate Contribution, 1 = Slight Contribution, --- = No Significant Contribution

Teaching Pedagogy

CO-1 (Unit: 1)	
CO-2 (Unit: 2)	● Problem Solving, Seminar, Activity, Demonstration, Experiments
CO-3 (Unit: 3)	
CO-4 (Unit: 4)	

Assessment Method

	COs	Marks	Exam Component			
			Quiz	**Practical Test**	**Assignment**	**Participation/ Performance**
Continuous Comprehensive Evaluation 40 Marks	**CO-1**	10	10	10	13	7
	CO-2	10				
	CO-3	10				
	CO-4	10				
Term-End Evaluation 60 Marks	**COs**	**Marks**	**Exam Component**			
	CO-1	15	Term End Examination			
	CO-2	15				
	CO-3	15				
	CO-4	15				

References

Online Resources & Tools:

●   https://wordpress.org/download/

●   https://www.tutorialspoint.com/wordpress/index.htm

●   https://www.geeksforgeeks.org/wordpress-tutorial/

Program - PGDCA (Faculty of Information, Communication and Technology)

Semester- 2

Course Code 256011043011	Name of Course Internship	Compulsory
Credit: 10	**Teaching Scheme: Theory (0) - Practical (0)**	**Teaching Hours: 0**

Course Outcomes (COs)

After completing this course, students will be able to

CO-1: Apply the knowledge and skills acquired during the PGDCA program to real-world industry problems and projects.

CO-2: Demonstrate professional ethics, workplace discipline, teamwork, and effective communication in a practical environment.

CO-3: Analyze the workflow, tools, and technologies used in the organization and contribute to problem-solving or project development.

CO-4: Prepare and present a structured internship report that documents experiences, learning outcomes, and contributions made during the internship period.

Mapping Matrix of POs, PSOs, and COs

COs	POs													PSOs				
	1	2	3	4	5	6	7	8	9	10	11	12	Avg	1	2	3	4	Avg
CO-1	3	3	3	2	–	2	3	2	2	3	3	2	**2.55**	3	3	2	2	**2.5**
CO-2	--	2	2	2	3	3	–	3	2	2	–	2	**2.33**	2	-	2.5	2.33	**2.28**
CO-3	2	3	3	–	2	–	3	2	2	2	2	2	**2.27**	2.5	3	2	2	**2.38**
CO-4	--	–	2	–	–	3	–	2	2	3	–	2	**2.29**	-	-	-	2.33	**2.33**
Avg	2.5	2.67	2.5	2.0	2.5	2.67	3.0	2.25	2.0	2.5	2.5	2.0		2.5	3	2.17	2.17	2.46

3 = Strong Contribution, 2 = Moderate Contribution, 1 = Slight Contribution, --- = No Significant Contribution

Teaching Pedagogy

CO-1 (Unit: 1)	
CO-2 (Unit: 2)	● Project, Activity, Discussion, Self-learning
CO-3 (Unit: 3)	
CO-4 (Unit: 4)	

Assessment Method

	COs	Marks	Exam Component		
Continuous Comprehensive Evaluation 40 Marks			**Class Test**	**Assignment**	**Presentation**
	CO-1	10	5	5	-
	CO-2	10	5	5	-
	CO-3	10	5	2.5	2.5
	CO-4	10	5	2.5	2.5
Term-End Evaluation 60 Marks	**COs**	**Marks**	**Exam Component**		
	CO-1	15	Term End Examination		
	CO-2	15			
	CO-3	15			
	CO-4	15			

Program - PGDCA (Faculty of Information, Communication and Technology)

Semester- 2

Course Code 256010243012	Name of Course Lab based on Web Programming	Compulsory
Credit: 02	Teaching Scheme: Theory (0) - Practical (60)	Lab Hours: 60

Course Outcomes (COs)

After completing this course, students will be able to

CO-1: Understand the architecture of web applications, client-server communication, and implement dynamic webpages using DHTML and client-side scripting.

CO-2: Demonstrate the ability to write structured PHP scripts using control structures, arrays, and built-in functions for various programming needs.

CO-3: Apply the concepts of relational databases and SQL to create and manage databases and perform queries using MySQL.

CO-4: Integrate PHP and MySQL to develop dynamic, database-driven web applications with create, read, update, and delete (CRUD) operations.

Mapping Matrix of POs, PSOs, and COs

COs	POs													PSOs				
	1	2	3	4	5	6	7	8	9	10	11	12	Avg	1	2	3	4	Avg
CO-1	3	2	2	–	1	2	3	1	2	2	2	2	2	2.5	3	1	2	2.13
CO-2	3	2	2	–	1	1	3	1	2	2	2	2	1.90	2.5	3	1	1.67	1.79
CO-3	3	2	3	–	–	1	2	–	2	2	1	2	2	2.5	2	-	1.67	2.06
CO-4	3	3	3	–	–	2	3	2	2	3	3	3	2.7	3	3	-	2.33	2.78
Avg	3	2.25	2.5	–	1	1.5	2.75	1.33	2	2.25	2	2.25		2.63	2.75	1	1.92	2.08

3 = Strong Contribution, 2 = Moderate Contribution, 1 = Slight Contribution, --- = No Significant Contribution

Teaching Pedagogy

CO-1 (Unit: 1)	• Experiential Learning
CO-2 (Unit: 2)	• Demonstration and Guided Practice
CO-3 (Unit: 3)	• Project-Based Learning
CO-4 (Unit: 4)	• Reflective Practice

Assessment Method

	COs	Marks	Exam Component		
Continuous Comprehensive Evaluation 40 Marks			Class Test	Assignment	Participation/ Performance
	CO-1	10	5		
	CO-2	10	5	13	7
	CO-3	10	5		
	CO-4	10	5		
Term-End Evaluation 60 Marks	COs	Marks	Exam Component		
	CO-1	15	Term End Examination		
	CO-2	15			
	CO-3	15			
	CO-4	15			

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