St. Paul Institute of Professional Studies, Indore
An Autonomous Institute Affiliated to Devi Ahilya Vishwavidhyalaya, Indore
Accredited by NAAC with 'A' Grade
Phone No. 0731-2499911, 49661355, 4961356
E-mail: info@spipsindore.ac.in, Website: www.spipsindore.com

Detailed Syllabus of

PGDCA

One Year PG Programme

Effective From July – 2025

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1 – Year PG Diploma in Computer Application

Year/Semester		Core Course / Dissertation	Credit	Practical Courses	Credit	Internship / Apprenticeship/Seminar OR VAC (CHEM / EESC)	Credit
First Year	Sem - I	**DCA - 101T** Fundamentals of Computers & Object Oriented Programming in C++ Marks: 100 **DCA - 102T** Software Engineering & MIS Marks: 100	6 6	**DCA – 103P** Programming in C++ language Marks: 100 **DCA – 104P** PC Packages Marks: 100	4 4	**DCA-105R** Internship/ Project work/ Phase – I Marks : 50	2
	Sem - II	**DCA – 201T** Database Management System Marks : 100 **DCA – 202T** Computer Networking, Internet & E – Commerce Marks : 100	6 6	**DCA – 203P** My SQL Marks : 100 **DCA – 204P** Internet & Web Designing Marks : 100	4 4	**DCA-205R** Internship/ Project work/ Final Phase Marks : 50	2

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PART A: Introduction

Program: One Year PG Diploma	**Class:** PGDCA	**Semester:** I	**Session:**2025-26

	Subject: **Computer Application**	
1	Course Code	DCA-101T
2	Course Title	Fundamentals of Computers & Object oriented programming in C++
3	Course Type(Core Course/Elective)	Core Course
4	Pre-Requisite(if any)	Basic Knowledge of Computers
5	Course Learning Outcomes(CLO)	**On completion of this course, learners will be able to:** 1. Understand history, generations, components, input-output devices, memory types, and architecture of computer systems with conceptual understanding. 2. Differentiate software types, programming language generations, and demonstrate roles of language processors like assembler, compiler, and interpreter effectively. 3. Write, debug, and execute C++ programs using OOP concepts, data types, operators, control structures, functions, arrays, and strings. 4. Recognize contributions of modern Indian scientists and integrate ethical, indigenous perspectives in computing aligned with the Indian Knowledge System.
6	Credit Value	**Theory**—6 Credits
7	Total Marks	Max. Marks: 60+40 / Min. Passing : 24+16

PART B: Content of the Course

No. of Lectures (in hours per week):6Hrs.per week

Total No.of Lectures:90Hrs.

Module	Topics	No. of Lectures
I	**History & Development** of Computer, Generations of Computers. **Input Devices**: Keyboard, Mouse, Trackball, Joystick, Scanner, Digital Camera, MICR, OMR, Bar-Code Reader, Voice Recognizer, Light pen, Touch screen. **Output Device**: Monitors- Characteristics & Types, Digital, Analog, Size, Resolution, Pixel, Video Standard- VGA, SVGA, XGA. **Printers**- Character Impact & Character Nonimpact, Line Impact & Line Non Impact, Plotters, Speakers. **Activity: Quiz on Input Output Devices**	18
II	**Block Diagram & Components of Computer System**: CU, ALU. **Memory**: Primary Memory: RAM-SRAM & DRAM, ROM-PROM, EPROM, EEPROM, Cache Memory Unified & Split. Secondary Memory: Magnetic- Floppy, Hard Disk, Magnetic Tape, Optical-CD, Flash Drive,SSD. **Softwares**: System & Application Software & Their Types. Languages: Machine, Assembly & High Level languages, Generations of Languages. Language Processor: Assembler, Interpreter, Compiler, Linker, Loader & Their Types. **Activity: PPT Presentation on Memory**	18

III	**Languages:** Machine, Assembly & High Level languages, Generations of Languages. Language Processor: Assembler, Interpreter, Compiler, Linker, Loader & Their Types. **Introduction to C++:** History, features, setting up the development environment, basic program structure. Overview of OOPS Concepts: Class, Object, Abstraction, Encapsulation, Inheritance, Data Binding , Message Passing. **Activity:** You tube video presentation on Generation of Languages and translators.	18
IV	**Data Types and Variables:** Fundamental data types, variables, constants, literals, scope. **Operators:** Arithmetic, relational, logical, bitwise, assignment, and other operators. Input /Output: Console I/O using cin and cout, manipulators. **Control Structures:** Conditional statements (if, if-else, switch), loops (for, while, do-while). **Activity:** Expert Session on OOPs Concepts	18
V	**Functions:** Function definition, declaration, parameters, return types, call by value and call by reference, function overloading, recursion. **Arrays and Strings:** One-dimensional and multi-dimensional arrays, string manipulation. **Activity:** PPT Presentation on Indian Knowledge System	18

Keywords: Computer Generations, Input/Output Devices, Memory (Primary & Secondary), System and Application Software, Programming Languages, Object-Oriented Programming (C++), Control Structures and Functions.

PART C: Learning Resources

Textbooks, Reference Books, Other Resources

Textbooks

1. **Computer Fundamentals** – P.K. Sinha & P. Sinha, BPB Publications, **2004 (6th Edition)**
2. **Fundamentals of Computers** – V. Rajaraman, PHI Learning, **2018 (6th Edition)**
3. **Programming in C++** – E. Balagurusamy, McGraw Hill, **2017 (7th Edition)**
4. **Object-Oriented Programming with C++** – Robert Lafore, Pearson Education, **2012 (4th Edition)**
5. **Fundamentals of Computer Programming and IT** byAshok Namdev Kamthane & Rohit Khurana, Pearson India, **May 2024**

Reference Books

1. **Computer Organization** – Carl Hamacher, Zvonko Vranesic, Safwat Zaky, McGraw Hill, **2011 (5th Edition)**
2. **Structured Computer Organization** – Andrew S. Tanenbaum, Pearson, **2016 (6th Edition)**
3. **Programming with C++** – D. Ravichandran, Tata McGraw Hill, 2011 **(2nd Edition)**
4. **The C++ Programming Language** – Bjarne Stroustrup, Addison-Wesley, **2013 (4th Edition)**
5. **Principles of Computer Science** – J.P. Mishra, PHI Learning, 2010 **(2nd Edition)**

Suggested Links

NPTEL/SWAYAM (IIT/IISc Online Courses) – Free video lectures & PDFs
https://nptel.ac.in/courses/106/106/10610616/
(Computer Organization and Architecture course)

GeeksforGeeks – Computer Fundamentals
https://www.geeksforgeeks.org/computer-fundamentals/
(Comprehensive notes on input/output devices, memory, software, processors, etc.)

W3Schools – C++ Tutorial
https://www.w3schools.com/cpp/

TutorialsPoint – C++ Tutorial
https://www.tutorialspoint.com/cplusplus/index.htm

Programiz – Learn C++ Programming
https://www.programiz.com/cpp-programming

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PART D: Assessment and Evaluation

Internal Assessment : Continuous Comprehensive Evaluation(**CCE**): --		End Term Examination(s) :-- **3:00 Hours**		
Class Test	15 Marks			
Presentation/Assignment/Quiz/ Group Discussion	15 Marks	Section A (Short Answer)	20 Marks (4 X 5)	With internal choice in every question
Total weightage of attendance in the class	10 Marks	Section B (Long Answer)	40 Marks (8 X 5)	With internal choice in every question
Total	40 Marks		60 Marks	Total 100 Marks

Any Remarks/ Suggestions: Internal (CCE): 40% weightage, End Term Exam: 60% weightage
Individual passing marks separately required in Internal & End Term Exam.

** For Project Work/ Internship, the student shall be awarded marks out of maximum 50 marks.

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PART A: Introduction

Program: One Year PG Diploma	**Class**: PGDCA	**Semester**: I	**Session**:2025-26

	Subject: **Computer Application**	
1	Course Code	DCA-103P
2	Course Title	**Practicals on C++ Programming**
3	Course Type(Core Course/Elective)	Practical Course
4	Pre-Requisite(if any)	• Basic knowledge of operating a computer (power on/off, using mouse and keyboard). • Awareness of general terms like software, hardware, and operating system.
5	Course Learning Outcomes(CLO)	**On completion of this course, learners will be able to:** After completing the practical course, students will be able to: 1. Understand and apply the basic syntax and structure of C++ programs. 2. Demonstrate problem-solving skills using simple conditional statements, loops, and functions. 3. Implement basic concepts of object-oriented programming such as classes and objects. 4. Develop and execute simple C++ programs for everyday computational problems.
6	Credit Value	**Practical**—4 Credits
7	Total Marks	Max. Marks: 100 / Min. Passing: 40

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PART B: Content of the Course		
Total No. of Labs: 30 Hrs.		
Remark: Practicum course required strong theoretical foundation therefore teachers may conduct Theory during Lab sessions to supplement the Practicum Courses. The following theory is suggested for practical implementation of practical. The classes for the theory can be conducted during the practical sessions.		
Total No. of Labs: 30	**List of Practical**	No. of Labs
	1. Write a simple program to display "Hello World" on the screen. 2. Write a program to add, subtract, multiply and divide two numbers. 3. Write a program to find the largest and smallest number among three numbers. 4. Write a program to check whether a given number is odd or even. 5. Write a program to calculate the factorial of a number using a loop. 6. Write a program to calculate the sum of the first 10 natural numbers. 7. Write a program to display the multiplication table of a number. 8. Write a program to calculate the area of a circle, rectangle and square using functions. 9. Write a program to check whether a string is a palindrome or not. 10.Write a program to demonstrate the use of classes and objects with simple student data (name, rollno). 11. Write a program to implement a simple calculator using switch case. 12. Write a program to find the Fibonacci series up to a given number of terms. 13. Write a program to check whether a number is prime or not. 14. Write a program to sort an array in ascending and descending order. 15. Write a program to find the sum and average of elements in an array. 16. Write a program to count the number of vowels and consonants in a string. 17. Write a program to reverse a given string. 18. Write a program to demonstrate function overloading. 19. Write a program to demonstrate the use of constructors and destructors in a class. 20. Write a program to read and write data to a file.	30
Keywords: C++ Programs, function, Recursion, loop Etc.		

PART C: Learning Resources

Textbooks, Reference Books, Other Resources

Suggested Readings:

"Programming in C++" by Reema Thareja, Oxford University Press, 2023 Edition.
"C++ Programming: A Practical Approach" by Smita Raj, Dreamtech Press, 2022.
"C++ Made Easy" by E. Balagurusamy, McGraw Hill Education, 2021.
"Object-Oriented Programming with C++" by Anirudh Prasad, Wiley India, 2022.
"C++ Simplified" by Sushil Goel, BPB Publications, 2023.

Suggestive Digital Platform Web Links

NPTEL (Swayam – Govt. of India MOOCs)
Spoken Tutorial – IIT Bombay
GeeksforGeeks – C++ Basics
TutorialsPoint – C++ Programming
W3Schools – C++ Tutorial
Programiz – Learn C++

Suggestive Equivalent Online Courses

- NPTEL (SWAYAM India) – – Introduction to Programming in C++
- Udemy – C++ For Absolute Beginners

PART D:Assessment and Evaluation

Internal Assessment : Continuous Comprehensive Evaluation(CCE):40Marks		End Term Examination(s):--60Marles Time:03:00 Hours		
Lab Assignments submission Marks	30			
Appropriate weightage of attendance in the Lab	10			
Total	40 Marks	Total	60 Marks	Total 100 Marks

Any Remarks/ Suggestions: Final practical exam will be of 3 hours including Viva-Voce
Individual passing marks separately required in Internal & End Term Exam.

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** For Pro•ect Work/ Internshi , the student shall be awarded marks out of maximum 50 marks.

Part A: Introduction			
Program: One Year PG Diploma	**Class: PGDCA**	**Semester: I**	**Session: 2025-26**
Subject: Computer Application			

1	**Course Code**	DCA-102T	
2	**Course Title**	Software Engineering & MIS	
3	**Course type**	Core Course	
4	**Pre-requisite (if any)**	Basic Knowledge of Computers	
5	**Course Learning Outcomes (CLO)**	**On completion of this course, learners will be able to:** 1. Understand basic concepts of Software engineering. 2. Analyze problems, identify requirement and develop software solutions. 3. Explore testing techniques and quality assurance processes. 4. Understand MIS concepts and its applications in business decision making. 5. Design MIS solutions to meet business requirement.	
6	**Credit Value**	Theory--6 Credits	
7	**Total marks**	Max. Marks: 60+40	Min. Passing: 24+16

Part B: Contents of the Course		
No. of Lectures (in hours per week):6 Hrs. per week		
Total No. of Lectures: 90 Hrs.		
Unit	**Topics**	**No. of Lectures (hrs.)**
I	**Introduction to Software Engineering and SDLC** Introduction to Software Engineering, Overview of SDLC (Software Development Life Cycle), Importance of SDLC in software projects Key phases of SDLC: Requirement gathering and analysis **Activity:** Peer Group Study on Types of software engineering models	12
II	**SDLC Phases – Design and Implementation** System design principles, Architectural and detailed design, Coding and implementation best practices, Introduction to version control and documentation **Activity**: Case study on SDLC implementation.	18
III	**SDLC Phases – Testing, Deployment, and Maintenance** Testing types (unit, integration, system, acceptance), Deployment strategies, Maintenance and software evolution, Importance of user feedback and continuous improvement **Activity:** Quiz on testing types and deployment.	20
IV	**Introduction to Management Information Systems (MIS)** What is MIS and its role in organizations, Types of information systems (TPS, DSS, EIS), MIS components: hardware, software, data, people, and processes, Benefits and challenges of MIS implementation **Activity:** Presentation on TPS/DSS/EIS	20
V	**MIS Design and Integration with Software Engineering** Analyzing business processes for MIS, Designing MIS applications aligned with SDLC principles, Case study: Developing MIS software using SDLC, Role of MIS in decision making and business strategy **Activity:** Case study: Designing MIS software using SDLC.	20
Keywords/Tags: Software Engineering, MIS, DSS, EIS		

Part C: Learning Resources

Text books, Reference Books, Other Resources

Textbooks

1. Software Engineering: A Practitioner's Approach by Roger S. Pressman & Bruce R. Maxim McGraw-Hill 2. Software Engineering (10th Edition) Ian Sommerville, Pearson Education
3. Management Information Systems: Managing the Digital Firm, Kenneth C. Laudon & Jane P. Laudon, Pearson
4. Fundamentals of Database Systems, Elmasri & Navathe, Pearson Education

Reference books

1. An Integrated Approach to Software Engineering, Pankaj Jalote, Narosa Publishing
2. Software Testing Techniques, Boris Beizer, Dreamtech Press
3. Management Information Systems, Waman S. Jawadekar, McGraw-Hill.
4. An Introduction to Database Systems, C.J. Date, Pearso Education

Suggested Digital Platforms, weblinks:

S.No.	Description
1	https://nptel.ac.in/courses/106105087 NPTEL – Software Engineering by Prof. Rajib Mall (IIT Kharagpur)
2	https://www.geeksforgeeks.org/software-engineering/software-engineering/ Geeks for Geeks – Software Engineering Tutorial Series
3	https://www.tutorialspoint.com/software_engineering/index.htm Tutorials Point – Software Engineering & MIS Modules
4	https://www.coursera.org/learn/softwarev-processes Coursera – Software Processes and Agile Practices

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Part D: Assessment and Evaluation				
Internal Assessment: Continuous Comprehensive Evaluation **(CCE): -**		End Term Examination(s): **- 3:00 Hours**		
Class Test	15			
Presentation/Assignment/ Quiz/ Group Discussion	15	Section A (Short Answer)	20 Marks (4 X 5)	With internal choice in every question
Total weightage of attendance in the class	10	Section B (Long Answer)	40 Marks (8 X 5)	With internal choice in every question
Total	40 Marks	Total	60 Marks	Total 100 Marks
Any Remarks/ Suggestions : Internal (CCE): 40% weightage, End Term Exam : 60% weightage Individual passing marks separately required in Internal & End Term Exam. ** For Pro•ect Work/ Internship, the student shall be awarded marks ut of maximum 50 marks.				

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PART A: Introduction

Program: One Year PG Diploma	**Class:** PGDCA	**Semester:** I	**Session:**2025-26

	Subject: **Computer Application**	
1	Course Code	DCA-104P
2	Course Title	**PC Packages**
3	Course Type(Core Course/Elective)	Practical Course
4	Pre-Requisite(if any)	• Basic knowledge of operating a computer (power on/off, using mouse and keyboard). • Awareness of general terms like software, hardware, and operating system.
5	Course Learning Outcomes(CLO)	**On completion of this course, learners will be able to:** 1. Demonstrate proficiency in using Windows operating system features, file management, and built-in accessories for basic computing tasks. 2. Combine and deliver information effectively using multimedia presentation, reports, and handouts with Microsoft Office applications. 3. Create, edit, format, and print professional documents, spreadsheets, and presentations using MS Word, MS Excel, and MS PowerPoint. 4. Apply formulas, functions, and charts in MS Excel for data analysis, visualization, and decision-making.
6	Credit Value	**Practical**—4 Credits
7	Total Marks	Max. Marks: 100 / Min. Passing: 40

PART B: Content of the Course

Total No. of Labs: 30Hrs.

Remark: Practicum course required strong theoretical foundation therefore teachers may conduct Theory during Lab sessions to supplement the Practicum Courses. The following theory is suggested for practical implementation of practical. The classes for the theory can be conducted during the practical sessions.

Total No. of Labs: 30Hrs.	List of Practical	No. of Labs
	1. Perform file and folder operations (Create, Rename, Copy, Move, Delete) in Windows Explorer. 2. Use Windows accessories–Notepad, Paint, Calculator, and WordPad for simple tasks. 3. Create a simple document with text, format it using Bold, Italics, Underline, and different fonts. 4. Use Bullets, Numbering, Borders, Shading, and Tables in a document. 5. Insert Header, Footer, Page Numbers, and Footnotes. 6. Apply Formatting–Auto Format, Alignment, Column width, Borders, and Colors. 7. Manage multiple worksheets–copy, rename, and move worksheets. 8. Use formulas for Addition, Subtraction, Multiplication, and Division etc., What-If Analysis, Pivot Table. 9. Apply Slide Layouts, Themes, and Backgrounds. Insert Pictures, Shapes, WordArt, and Tables in slides. 10. Create a simple presentation with at least 5 slides on a given topic (Digital Awareness, Cyber Security, Cloud Computing, E-Waste Management) using Slide Transitions and Animations for better effects. 11. Create a Power Point presentation on Indian Knowledge System. 12. Practical on: A. Operating System Commands B. Control Panel C. Security Setting D. Device Configuration E. Poster & Banner Design	30

Keywords: Windows accessories, Document, Header, Footer, Worksheets, Slide Presentation

PART C: Learning Resources

Textbooks, Reference Books, Other Resources

Suggested Readings:

- Microsoft Excel 2019 Step by Step, – Microsoft Press, USA.
- Microsoft Office 365 & Office 2019 Introductory– Cengage Learning, USA
- PC Software – Kamal Prakashan.
- Fundamental of Computer & PC Software – Yashraj Books Publication

Suggestive Digital Platform Web Links

- https://www.tutorialspoint.com/windows10/index.htm
- https://www.tutorialspoint.com/operating_system/index.htm
- https://edu.gcfglobal.org/en/subjects/microsoft-office/

Suggestive Equivalent Online Courses

- NPTEL (SWAYAM India) – Introduction to Computers & Office Productivity Software.)
- Udemy – Master Microsoft Office (Word, Excel, PowerPoint).
- Coursera – Microsoft 365 Fundamentals (by Microsoft).

PART D: Assessment and Evaluation

Internal Assessment : Continuous Comprehensive **Evaluation(CCE): 40 Marks**		End Term Examination(s) :- **60 Marks** Time: **03:00 Hours**		
Lab Assignments submission Marks	30			
Appropriate weightage of attendance in the Lab	10			
Total	40 Marks	Total	60 Marks	Total 100 Marks

Any Remarks/ Suggestions: Final practical exam will be of 3 hours including Viva-Voce
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PART A: Introduction			
Program: One Year PG Diploma	**Class:** PGDCA	**Semester:** II	**Session:**2025-26

	Subject: **Computer Application**	
1	Course Code	DCA201T
2	Course Title	**Database Management System**
3	Course Type(Core Course/Elective)	Core Course
4	Pre-Requisite(if any)	Basic Knowledge of Computers
5	Course Learning Outcomes(CLO)	**On completion of this course, learners will be able to:** 1. Explain fundamental database concepts, relational models, and Oracle DBMS architecture. 2. Apply SQL commands for creating, manipulating, and querying database tables in Oracle. 3. Design normalized relational schemas and ER models for real-world applications.
6	Credit Value	**Theory**—6 Credits
7	Total Marks	Max. Marks: 60+40 / Min. Passing : 24+16

PART B: Content of the Course		
No. of Lectures (in hours per week):6Hrs.per week		
Total No.of Lectures:90Hrs.		
Module	**Topics**	**No. of Lectures**
I	**Introduction to Database Systems** Data, Information, and Database concepts, File-based vs. Database approach,DBMS vs. RDBMS, Advantages & Applications of DBMS, Functions of DBA **Database Models**: Hierarchical, Network, Relational Key terms: Entities, Attributes, Tuples, Relations, Schema **Activity: Debate on File based Vs DBMS and RDBMS, Discussion on various Data Models**	18
II	**Relational model concepts**: Keys (Primary, Foreign, Candidate, Composite, Alternate, Super), Integrity constraints: Entity integrity, Referential integrity **Introduction to SQL** Data Definition Language (DDL): CREATE, ALTER, DROP **Data Types in Oracle** **Data Manipulation Language (DML)**: INSERT, UPDATE, DELETE **Data Query Language (DQL)**: SELECT statements with simple conditions **Activity: Hands on tools on SQL Commands**	18
III	**Operators**: Arithmetic, Relational, Logical, Between, In, Like **Functions in Oracle**: **Single-row functions** (string, numeric, date, conversion) **Aggregate functions** (SUM, AVG, MAX, MIN, COUNT) **Grouping and filtering data**: GROUP BY, HAVING **Ordering data**: ORDER BY **Joins in SQL**: Inner Join, Outer Join, Self Join **Activity: Hands on tools on SQL Commands**	18

IV	**Database Design & Normalization** **Database Design Process**: Requirement analysis to schema design. **Entity Relationship (ER) Model**: Entities, relationships, attributes, ER diagrams, Mapping ER model to relational schema **Functional dependencies, Normalization**: 1NF, 2NF, 3NF, BCNF (with examples) **Denormalization** – when and why **Activity: Drawing ER Diagrams and Discussion on Normal Forms**	18
V	**Transactions and Security Control**: Transaction Concept, Properties: Atomicity, Consistency, Isolation, Durability. Concurrency control: Locks, Commit, Rollback, Save point Oracle security features: User creation, privileges, roles **Activity: You Tube Video Based on ACID Rules**	18
Keywords: DBMS, DBA, ER Diagram, SQL, NORMAL FORMS, Transaction Control, DBMS Security		

PART C: Learning Resources

Textbooks, Reference Books, Other Resources

Textbooks

1. **Elmasri, R. & Navathe, S. B.** – *Fundamentals of Database Systems*, 7th Edition, Pearson Education, 2017.
2. **Korth, H. F., Silberschatz, A., & Sudarshan, S.** – *Database System Concepts*, 7th Edition, McGraw-Hill, 2019.
3. **Pranab Kumar Das Gupta** – *Database Management Systems (DBMS)*, PHI Learning, 2017. *(Indian Author)*
4. **Ivan Bayross** – *SQL, PL/SQL: The Programming Language of Oracle*, 5th Edition, BPB Publications, 2020. *(Beginner friendly, widely used in India)*

Reference Books

1. **Ramakrishnan, R. & Gehrke, J.** – *Database Management Systems*, 3rd Edition, McGraw-Hill, 2014.
2. **Scott Urman** – *Oracle PL/SQL Programming*, McGraw-Hill, 2018.
3. **Bipin C. Desai** – *An Introduction to Database Systems*, Revised Edition, Galgotia Publications, 2016. *(Indian Author)*
4. **Maheshwari, P. & Jain, S.** – *Database Management Systems*, Firewall Media, 2017. *(Indian Author)*

Other Resources (Web Links)

W3Schools SQL Tutorial (beginner-friendly):
https://www.w3schools.com/sql/
TutorialsPoint – Oracle Tutorial:
https://www.tutorialspoint.com/oracle/
GeeksforGeeks – DBMS Section:
https://www.geeksforgeeks.org/dbms/
SQLBolt (Interactive SQL Practice):
https://sqlbolt.com/
NPTEL Online Courses (IITs):
https://nptel.ac.in/courses/106105175
(Database Management Systems by IIT Madras

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PART D: Assessment and Evaluation

Internal Assessment : Continuous Comprehensive Evaluation(**CCE**): --		End Term Examination(s) :--**3:00 Hours**		
Class Test	15			
Presentation/Assignment/ Quiz/Group Discussion	15	Section A (Short Answer)	20 Marks (4 X 5)	With internal choice in every question
Total weightage of attendance in the class	10	Section B (Long Answer)	40 Marks (8 X 5)	With internal choice in every question
Total	40 Marks	Total	60 Marks	Total 100 Marks

Any Remarks/ Suggestions : Internal (CCE):40% weightage, End Term Exam: 60% weightage
Individual passing marks separately required in Internal and End Term Exam.
**For project work/Internship, the student shall be awarded marks out of maximum 50 marks.

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PART A: Introduction

Program: One Year PG Diploma	**Class:** PGDCA	**Semester:** I	**Session:**2025-26

	Subject: **Computer Application**	
1	Course Code	DCA-203P
2	Course Title	MySQL
3	Course Type (Core Course/Elective)	Practical Course
4	Pre-Requisite (if any)	• Basic knowledge of operating a computer (power on/off, using mouse and keyboard). • Awareness of general terms like software, hardware, and operating system.
5	Course Learning Outcomes(CLO)	**On completion of this course, learners will be able to:** 1. Understand the basics of SQL syntax and database creation. 2. Demonstrate ability to insert, retrieve, update, and delete records. 3. Apply filtering, sorting, and simple aggregation in queries. 4. Develop confidence in writing basic SQL queries for simple data problems.
6	Credit Value	**Practical**—4 Credits
7	Total Marks	Max. Marks: 100 / Min. Passing: 40

PART B: Content of the Course

Total No. of Labs: 30Hrs.

Remark: Practicum course required strong theoretical foundation therefore teachers may conduct Theory during Lab sessions to supplement the Practicum Courses. The following theory is suggested for implementation of practical. The classes for the theory can be conducted during the practical sessions.

Total No. of Labs: 30Hrs.	List of Practical	No. of Labs
	1. Write SQL commands to create a database and use it. 2. Write SQL commands to create a table with suitable fields (e.g., Student). 3. Insert at least 5 records into a table using INSERT. 4. Display all records using SELECT * FROM command. 5. Display specific columns (e.g., Student Name, Marks) using SELECT. 6. Use WHERE clause to filter records (e.g., students scoring more than50). 7. Use ORDER BY to sort records in ascending and descending order. 8. Use UPDATE to modify records in a table. 9. Use DELETE to remove records. 10. Use simple aggregate functions (COUNT, SUM, AVG, MIN, MAX). 11. Use GROUP BY to group records based on a column (e.g., group students by grade). 12. Use HAVING clause to filter grouped data (e.g., grades with more than 2 students). 13. Use BETWEEN to filter records within a range (e.g., marks between 40 and 80). 14. Use IN to filter records based on multiple values (e.g., names in a list). 15. Add a new column to an existing table using ALTER TABLE. 16. Create another table (e.g., Marks) and define a FOREIGN KEY relationship. 17. Perform INNER JOIN to display combined data from two related tables. 18. Use DISTINCT to display unique values in a column (e.g., distinct grades). 19. Rename a table using RENAME TABLE command. 20. Export and import data using SQL. **Keywords:** Database Tables, Update, Insert, Delete, Create, Order By Etc.	30

PART C: Learning Resources

Textbooks, Reference Books, Other Resources

Suggested Readings:

"SQL: A Beginner's Guide" by Anuradha A. Puntambekar, Technical Publications, 2022.
"Database Management Systems and SQL" by Pranav Chavan, Thakur Publications, 2023.
"Practical SQL for Beginners" by Nilesh Shah, BPB Publications, 2021.
"Fundamentals of Database Systems" by Ramez Elmasri & Shamkant Navathe (adapted Indian edition, Pearson, 2022).
"SQL Simplified" by Rajesh Narang, BPB Publications, 2022.

Suggestive Digital Platform Web Links

NPTEL (Swayam – Govt. of India MOOCs)
W3Schools SQL Tutorial
GeeksforGeeks SQL Basics
TutorialsPoint SQL
Programiz SQL Guide

Suggestive Equivalent Online Courses

Spoken Tutorial – IIT Bombay (Free Government initiative)
NPTEL / SWAYAM – Online government courses on DBMS & SQL
SQL Fiddle (Online SQL Compiler)

PART D: Assessment and Evaluation

Internal Assessment : Continuous Comprehensive **Evaluation(CCE): 40 Marks**		End Term Examination(s) :-- **60 Marks** Time: 03:00 Hours		
Lab Assignments submission Marks	30			
Appropriate weightage of attendance in the Lab	10			
Total	40 Marks	Total	60 Marks	Total 100 Marks

Any Remarks/ Suggestions: Final practical exam will be of 3 hours including Viva- Voce Individual passing marks required in Internal & End term Exam.
**For Project Work/internship, the student shall be awarded marks out of maximum 50 marks.

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PART A: Introduction

Program: One Year PG Di loma		Class: PGDCA	Semester: II
Subject: Computer Application			
1.	Course Code	**DCA-202T**	
	Course Title	Internet & E- Commerce	
3.	Course Type(Core Course/Elective)	Core Course	
	Pre-Requisite(if any)	Basics of Internet, E-Commerce, Digital Marketing, Cyber Crime & Security, HTML Programming	
5.	Course Learning Outcomes(CLO)	On completion of this course, learners will be able to: 1 . Understand the evolution, protocols, and applications of the Internet and E-mail systems to effectively utilize online communication and information services. 2. Develop basic web pages using I-ITML and web publishing tools applying design principles for creating and maintaining Websites. 3. Explain the Digital payments and E-Commerce, Digital Marketing, Identifying cyber risk associates with online activities. 4. Demonstrate awareness of Internet applications and security tools, antivirus utilities, firewalls, and proxy servers for safe and efficient digital practices.	
	Credit Value	Theory 6Credits	
7.	Total Marks	Max. Marks: 60+40	Min.Passing:24+16

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PART B:Content of the Course		
	No. of Lectures (in hours per week): 6 1 Irs. per week	
	Total No. of Lectures: 90 Hrs.	
Module	Topics	No. of Lectures
I	Internet- Evolution, Protocols, Interface Concepts, Internet Vs Intranet, Growth of Internet, ISP, Connectivity-Dial-up, Leased line, V SAT etc. URLs, Domain names, Portals, Application. Word wide web (www) - History, Working, Web Browsers, Its functions, Concept of Search Engines, Searching the Web, IITTP, URLs, Web Servers, WebProtocols.Webpublishing-Concepts,DomainnameRegistration,Space on I lost Server for Web site. E-MAIL-Concepts, POP and WEB Based E-mail, merits, address, Basics of Sending & Receiving, E- mail Protocols, Mailing List, Free Email services, Interne Protocols. Activity: Conduct a quiz on Internet protocols (HTTP, FTP, SMTP, POP,IMAP, DNS, etc. and basic conce ts like ISP, connectivit methods, URLs.	18
II	E-Commerce- Definition, Main components of E-Commerce, Types of ECommerce, Elements of Ecommerce security, E-Commerce threats, E-Commerce security best practices, Online Bill Payment. Digital payments related common frauds and preventive measures. RBI guidelines and provisions of Paymen Settlement Act, 2007. Digital Payments and e-Commerce: Internet Banking: National Electronic Fund Transfer (NEFT), Real Time Gross Settlement (RTGS), Immediate Payment Service (IMPS) Digital Financial Tools: Understanding OTP [One Time Password], QR [Quick Response] Code, UPI [Unified Payment Interface], AEPS [Aadhaar Enabled Payment System]; USSD [Unstructured Supplementary Service Datal, Card [Cred Debit], e Wallet, POS [Point of Sale]. Activity: Prepare Flashcards or a Digital Quiz, Students Form pairs or small teams. Each team matches the model name with its description or real-life exam lessons .	18

III	Introduction to Digital Marketing: Definition and Scope of Digital Marketing, Traditional vs Digital Marketing, Digital Marketing Mix and Buyer Journey, Inbound vs Outbound Marketing. Search Engine Optimization (SEO) and Search Engine Marketing (SEM), Social Media Marketing (Facebook, Instagram, LinkedIn, YouTube), Email Marketing and Content Marketing, Affiliate Marketing and Influencer Strategies. Digital Strategy, Analytics and Trends, Creating Digital Marketing plans and Campaigns, Google Analytics and KPIs, Trends- AI in Marketing, Automation, Voice Search, Ethics and Data Privacy in Digital Marketing. ctivity:Implement a Marketing campaign, Design an online advertisement.	18
	Web Designing: Introduction and Definition. Html-Concepts of Hypertext, Versions of HTML, Elements of HTML syntax, I lead & Body Sections, Building HTML documents, Inserting texts, Images, Hyperlinks, Backgrounds and Color controls, Different tags, Table layout and presentation, Use of font size & Attributes, List types and its tags, Use of Frames and Forms in web pages. Web Desi °nin Software- Note aUNote ad++, Drea weaver, Blue Griff n, Ne	18
	beans, Sea Monkey, Word press, Sublime. Activity: Used different font sizes, colors, and styles. Apply in line styles fo headin s and ara ra hs.	
	Introduction to Cyber security- Regulation of cyberspace, Concept of cyber security, Issues and challenges of cyber security, Definition of cyber crimes and offences, Cyber crime targeting computers and mobiles,Cyber crime against women and children, Cyber bullying. Financial frauds, Social engineering attacks, Malware and Ransomware attacks, zero day and zero click attacks. Cyber criminals modusoperandi, Reporting of cyber crimes, Remedial and mitigation measures, Legal perspective of cyber crime, IT Act 2000 and its amendments, Organizations dealing ith Cyber crime and Cyber security in India. Computer Security- Issues & protection, firewall & antivirus, making secure online ransactions. Internet safety and digital security. Ethical use of digital resources, Measures of Online Self Protection. ctivity: Discuss cyber security aspects, RBI guidelines and preventive measures against digital payment frauds, Describe the concept of Cyber security and issues and challen es associated with it. .	1 8

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PART C: Learning Resources

Textbooks, Reference Books, Other Resources

Suggested Readings:

- Ramesh Bangia, *Internet and Web Technologies*, Firewall Media, Latest Edition.
- Alexis Leon & Mathews Leon, *Internet for Everyone*, Vikas Publishing House, Latest Edition.
- Behrouz A. Forouzan, *Data Communications and Networking*, McGraw Hill, 5th Edition, 2013. Andrew S. Tanenbaum & David Wetherall, *Computer Networks*, Pearson, 5th Edition, 2011.
- Ivan Bayross, *Web Enabled Commercial Applications Development Using HTML, DHTML, JavaScript, Perl CGI*, BPB Publications, Latest Edition. Jon Duckett, *HTML & CSS: Design and Build Websites*, Wiley, 2011.

Suggestive digital platform web links:

- https://www.w3schools.com
- https://www.geeksforgeeks.org
- www.tutorialspoint.com
- https://nptel.ac.in
- https://cisco.com/academy
- https://www.khanacademy.org/

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PART D: Assessment and Evaluation

Internal Assessment: Continuous Comprehensive Evaluation(CCE):--		End Term Examination(s):-- 3:00 Hours		
Class Test	15			
Presentation/Assignment/ Quiz/ Group Discussion	15	Section A (Short Answer)	20 Marks (4 X 5)	With internal choice in every question
Total weightage of attendance in the class	10	Section B (Long nswer)	40 Marks (8 X 5)	With internal choice in every question
Total	40 Marks	Total	60 Marks	Total 100 Marks

Any Remarks/ Suggestions : Internal (CCE): 40% weightage, End Term Exam : 60% weightage Individual passing marks separately required in Internal & End Term Exam.

** For Pro•ect Work/ Internshi , the student shall be awarded marks out of maximum 50 marks.

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PART A: Introduction

Program: One Year PG Diploma	**Class:** PGDCA	**Semester:** I	**Session:**2025-26

	Subject: **Computer Application**	
1	Course Code	DCA-204P
2	Course Title	**Internet & Web Designing Practicals**
3	Course Type(Core Course/Elective)	Practical Course
4	Pre-Requisite(if any)	Basic computer literacy (typing, file handling, using a web browser) &Familiarity with using a text editor (e.g., Notepad++, VS Code).
5	Course Learning Outcomes(CLO)	**On completion of this course, learners will be able to:** 1. Apply basic HTML elements to design structured web pages with headings, paragraphs, lists, images, tables, and forms. 2. Use CSS styling techniques (inline, internal, and external) to format and enhance the visual appearance of web content. 3. Develop simple web layouts and navigation menus using divisions, colors, and positioning for better user experience. 4. Create small functional web projects (e.g., profile cards, forms,quotation 5. Understanding the core principals of JavaScript, including its role in web development.
6	Credit Value	**Practical**—4 Credits
7	Total Marks	Max. Marks: 100 / Min. Passing: 40

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PART B: Content of the Course

Total No. of Labs: 30Hrs.

Remark: Practicum course required strong theoretical foundation therefore teachers may conduct Theory during Lab sessions to supplement the Practicum Courses. The following theory is suggested for implementation of practical. The classes for the theory can be conducted during the practical sessions.

Total No. of Labs: 20Hrs.	**List of Practical**	No. of Labs
	1. Write a program to create a simple webpage with a heading and a paragraph using HTMLand CSS. 2. Write a program to change the background color of a webpage using CSS. 3. Write a program to display an image on a webpage and set its height, width,and border using CSS. 4. Write a program to create a navigation bar using an unordered list and style it with CSS. 5. Write a program to create a student details table and apply CSS for borders and cell padding. 6. Write a program to design a registration form with input fields and style the form using CSS. 7. Write a program to create three colored boxes using and arrange them horizontally with CSS.Write a program to display a quotation on a webpage and apply CSS for border, font style, and shadow. 8. Write a program to create a profile card containing an image, name, and description with CSS styling. 9. Write a program to demonstrate inline, internal, and external CSS on the same webpage. 10. . Create a Web Page Using Basic II'I*ML Tags 11.Design a Web Page Using Text Formatting Tags 12. Create a List Using HTML List Tags 13.Create a Web Page with Hyperlinks and Images 14.Create a Simple HTML Table 15.JavaScript Program to Display "Hello, World!" 16.JavaScript Program to Add Two Numbers	30

	17.JavaScript Program to Check if a Number is Even or Odd 18.JavaScript Program to Find the Largest Among Three Numbers 19.JavaScript Program to Reverse a String	
	Note : Other than the given list, faculty may assign more programs to students.	

Keywords:HTML , CSS, Table, Font style, Shadow etc.

PART C: Learning Resources

Textbooks, Reference Books, Other Resources

Suggested Readings:

- HTML and CSS: Design and Build Websites – Jon Duckett (visual, beginner-friendly).
- Head First HTML and CSS – Elisabeth Robson & Eric Freeman (interactive, hands-on style).
- Murach's HTML and CSS: Training & Reference – Comprehensive guide and reference.

Suggestive Digital Platform Web Links

- W3Schools – Easy tutorials with live code editor.
- freeCodeCamp – Interactive curriculum with projects.
- Learn HTML CSS Online – Step-by-step practice lessons.

Suggestive Equivalent Online Courses

- Codecademy – Learn HTML & CSS Path (beginner to intermediate).
- Coursera – HTML and CSS in depth (Meta).
- Scrimba – Learn HTML and CSS

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PART D: Assessment and Evaluation				
Internal Assessment : Continuous Comprehensive **Evaluation(CCE): 40 Marks**		End Term Examination(s) :-- Time: 02:00 Hours		
Class Test	Marks			
Presentation/Assignment/Quiz/ G roup Discussion	Marks			
Appropriate weightage of attendance in the class	Marks			
Total	40 Marks	Total	60 Marks	100 Marks

Any Remarks/ Suggestions: : Final practical exam will be of 3 hours including Viva-Voce
Individual passing marks separately required in Internal & End Term Exam.

** For Pro•ect Work/ Internshi , the student shall be awarded marks out of maximum 50 marks.