

### COURSE STRUCTURE OF Diploma in CSE

Sl. No.	Subject	Subtopics	Case Study	Live Project
1	Fundamentals of IT	<ol style="list-style-type: none"> <li>1. Computer Basics</li> <li>2. Number Systems</li> <li>3. OS Concepts</li> <li>4. Hardware &amp; Software</li> <li>5. Internet Basics</li> </ol>	<b>Case study individual for each subject</b>	<b>Live project individual for each subject</b>
2	Programming in C	<ol style="list-style-type: none"> <li>1. Introduction to C</li> <li>2. Operators and Expressions</li> <li>3. Control Structures</li> <li>4. Functions and Pointers</li> <li>5. Structures and File Handling</li> </ol>		
3	Basic Mathematics	<ol style="list-style-type: none"> <li>1. Sets and Relations</li> <li>2. Matrices</li> <li>3. Boolean Algebra</li> <li>4. Number Systems</li> <li>5. Logic Gates</li> </ol>		
4	Digital Electronics	<ol style="list-style-type: none"> <li>1. Logic Gates</li> <li>2. Flip-Flops</li> <li>3. Multiplexers &amp; Encoders</li> <li>4. Counters</li> <li>5. Logic Circuits</li> </ol>		



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5	Office Productivity Tools	<ol style="list-style-type: none"> <li>1. MS Word</li> <li>2. MS Excel</li> <li>3. MS PowerPoint</li> <li>4. Google Tools</li> <li>5. Document Formatting</li> </ol>		
6	Communication Skills	<ol style="list-style-type: none"> <li>1. Listening Skills</li> <li>2. Writing Techniques</li> <li>3. Email Etiquette</li> <li>4. Group Discussion</li> <li>5. Presentation Skills</li> </ol>		
<b>SEMESTER 2</b>				
Sl. No.	Subject	Subtopics	Case Study	Live Project
1	Object-Oriented Programming	<ol style="list-style-type: none"> <li>1. Object-Oriented Principles</li> <li>2. Classes and Objects</li> <li>3. Inheritance</li> <li>4. Polymorphism</li> <li>5. Exception Handling</li> </ol>	<b>Case study individual for each subject</b>	<b>Live project individual for each subject</b>
2	Data Structures	<ol style="list-style-type: none"> <li>1. Arrays</li> <li>2. Linked Lists</li> <li>3. Stacks and Queues</li> <li>4. Trees</li> <li>5. Searching &amp; Sorting</li> </ol>		
3	Operating Systems	<ol style="list-style-type: none"> <li>1. Process Management</li> <li>2. Memory Management</li> <li>3. File Systems</li> <li>4. Scheduling</li> <li>5. Deadlocks</li> </ol>		
4	Software Engineering	<ol style="list-style-type: none"> <li>1. ER Modeling</li> <li>2. SQL Queries</li> <li>3. Normalization</li> <li>4. Transactions</li> <li>5. Joins &amp; Subqueries</li> </ol>		



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5	Web Technologies (HTML/CSS)	- 1. HTML5 Structure 2. CSS Styling 3. Form Handling 4. Page Layout 5. Responsive Design		
6	Software Engineering	- 1. SDLC Phases 2. Requirement Gathering 3. UML Diagrams 4. Testing Methods 5. Agile Overview		
<b>SEMESTER 3</b>				
Sl. No.	Subject	Subtopics	Case Study	Live Project
1	Computer Networks	- 1. OSI and TCP/IP Models 2. IP Addressing 3. Routing Protocols 4. Network Devices 5. Network Security		
2	Web Programming (JavaScript)	- 1. JS Syntax 2. Functions 3. DOM Manipulation 4. Events 5. Form Validation	<b>Case study individual for each subject</b>	<b>Live project individual for each subject</b>
3	Advanced SQL & PL/SQL	- <b>1. Triggers</b> <b>2. Stored Procedures</b> <b>3. Cursors</b> <b>4. Views</b> <b>5. Exception Handling</b>		
4	UI/UX Design	- 1. Design Principles 2. Color Theory 3. Wireframing 4. Prototyping Tools 5. Navigation Design		



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5	Linux & Shell Scripting	- 1. Linux Basics 2. File System Commands 3. Permissions 4. Bash Scripting 5. File Redirection		
6	Mini Project	- 1. Topic Selection 2. Planning 3. Development 4. Testing 5. Final Presentation		

## SEMESTER 4

Sl. No.	Subject	Subtopics	Case Study	Live Project
1	Python Programming	- 1. Data Types 2. Conditional Logic 3. Functions 4. File Handling 5. Pandas & NumPy	<b>Case study individual for each subject</b>	<b>Live project individual for each subject</b>
2	Mobile App Development (Android)	- 1. Android Studio 2. UI Components 3. Activities & Intents 4. SQLite 5. Firebase Integration		
3	Cloud Computing Fundamentals	- 1. Cloud Models - 2. Virtualization - 3. AWS Basics - 4. Cloud Storage - 5. Cloud Security		
4	Data Analytics with Python	- 1. Data Cleaning 2. Visualization Tools 3. Summary Stats 4. Graph Plotting 5. Correlation & Analysis Control		



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5	Cybersecurity Fundamentals	- 1. Threat Types 2. Authentication 3. Encryption 4. Firewalls 5. Social Engineering		
6	Project Planning & Documentation	- 1. Project Charter 2. Timeline Management 3. Risk Assessment 4. Technical Reports 5. Documentation Tools		

## SEMESTER 5

Sl. No.	Subject	Subtopics	Case Study	Live Project
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1	Advanced Web Technologies	- 1. React Basics - 2. Node.js Introduction - 3. RESTful APIs - 4. SPA Development - 5. Web Security	Case study individual for each subject	Live project individual for each subject
2	Machine Learning Basics	- 1. ML Overview 2. Supervised Learning 3. Unsupervised Learning 4. Regression 5. Classification		
3	Cryptography & Network Security	- 1. Symmetric & Asymmetric Encryption 2. Hash Functions 3. SSL/TLS 4. Digital Signatures 5. Secure Coding		
4	IT Project Management	- 1. Planning 2. Execution 3. Monitoring 4. Cost Estimation 5. Closure		
5	IT Laws & Ethics	- 1. Cyber Laws 2. IPR in IT 3. GDPR Overview 4. Ethical Hacking 5. IT Act 2000		



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6	Internship / Minor Project	- 1. Industry Assignment 2. Task Execution 3. Progress Review 4. Reporting 5. Reflection		
<b>SEMESTER 6</b>				
Sl. No.	Subject	Subtopics	Case Study	Live Project
1	Final Year Project	- 1. Problem Definition 2. Design & Implementation 3. Testing 4. Deployment 5. Viva Presentation	<b>Case study individual for each subject</b>	<b>Live project individual for each subject</b>
2	Seminar & Research	- 1. Topic Selection 2. Data Collection 3. Report Writing 4. Plagiarism Check 5. Seminar Delivery		
3	Advanced Java Programming	1. Java 8+ Features 2. Streams API 3. Multithreading 4. JDBC 5. JavaFX or Spring		
4	Freelancing & Entrepreneurship	- 1. Client Acquisition 2. Proposal Writing 3. Invoicing & Tools 4. Branding 5. Managing Projects		
5	Career Development	1. Resume Building 2. LinkedIn Optimization 3. Interview Skills 4. Job Portals 5. Personality Development		
6	Mock Interviews & Viva	- 1. Aptitude Round 2. Technical Round 3. HR Interview 4. Project Defense 5. Feedback & Grading		



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**Key Features:**

**Each subject includes 2 real-world case studies and 2 live projects per semester.**

**Industry-oriented approach combining theory + hands-on learning.**

**Each semester will end with a live panel presentation to assess student understanding and practical application.**

**Designed to prepare diploma students for entry-level roles in software development, web and mobile application development, computer networks, database management, cybersecurity, and IT support. This program combines core computing fundamentals with hands-on training, real-world case studies, and project-based learning, enabling students to develop practical skills and problem-solving abilities aligned with current industry needs.**



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