

# DEPARTMENT OF LIFELONG LEARNING

## SYLLABUS FOR THE SESSION 2026-2027

### SIX MONTHS CERTIFICATE COURSE IN WEB DEVELOPMENT



## GURU NANAK DEV UNIVERSITY, AMRITSAR

The Six Months **Certificate Course in Web Development** is being run under the Department of Lifelong Learning, Guru Nanak Dev University, Amritsar. The course is of six months duration, and the examination is conducted only once at the end of the academic session. After successful completion of the course and passing the final examination, a candidate shall be awarded the **Certificate in Web Development** by the Department of Lifelong Learning, Guru Nanak Dev University, Amritsar.

### Note:

- Copy rights are reserved.
- Nobody is allowed to print it in any form.
- Defaulters will be prosecuted.

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**Department of Lifelong Learning, Guru Nanak Dev University, Amritsar**

**PROGRAMME OBJECTIVES**

**The objectives of this programme are to:**

- The Certificate Course in Web Development is designed to maximize students potential by providing a skill oriented curriculum that prepares them for employment and entrepreneurship in the IT and web industry.
- This programme offers hands-on training in modern web technologies such as HTML, CSS, PHP using MySQL, enabling students to build dynamic and responsive websites. Students will have opportunities to work on practical projects, live assignments, and industry-oriented training to enhance their technical expertise.
- This programme encourages participation in workshops, seminars, and other co-curricular activities to promote overall development.

**PROGRAMME OUTCOMES**

**At the end of this course the candidate will be:**

- Placed in IT companies, web development firms, digital marketing agencies, software houses and an work as a freelance web designer/developer.
- Capable of working as a web developer, front-end developer, or back-end developer using technologies like HTM and PHP with MySQL.
- Eligible to work as a teaching professional or lab instructor in schools, institutes, and diploma level training centres in the field of web designing and development.

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**ORDINANCES**

- 1. Duration of Course :-**
  - a. Examination will be held once at the end of course after six months as per G.N.D.U schedule.
- 2. Eligibility :-**
  - a. The candidates who have passed 12<sup>th</sup> Class examination with minimum 35% marks.
- 3. Mode of Admission :**
  - a. The admission will be made by a committee constituted by the Worthy Vice-Chancellor strictly on the basis of the merit of the candidates in 12<sup>th</sup> class.
  - b. If any of the admitted student remains absent consecutively for fifteen days without prior information and permission of heading authority from the commencement of the course, the name of such candidate shall be struck off from the rolls of the department and the next candidate on the waiting list in order of merit of the respective course shall be admitted in his/her place with the permission of the Director of the department.
- 4. Attendance Instructions:**
  - a. The students admitted to one year diploma/Six Month certificate course, who remain absent consecutively for 15 working days during the duration of the course without any information to the department their name(s) shall be stuck off from rolls of the department with the permission of Dean Academic Affairs.
  - b. The students admitted in one year Diploma, if they attain less than 25% of the total attendance in six months their name(s) shall be stuck off from rolls of the department with the permission of Dean Academic Affairs.
  - c. The students admitted in six month certificate course, if they attain less than 25% of total attendance in three months, the name(s) of such students shall be stuck off from rolls of the department with the permission of Dean Academic Affairs.
  - d. Attended not less than 75% of the full course of lectures delivered and practical arranged for the class.
  - e. The Director of the department shall have the power to condone shortage of lectures in each paper up to 15% of total taken separately.
- 5. Fees:**
  - a. According to the schedule, every candidate shall pay such fees to the university as per university rules.
- 6. General Instructions:-**
  - a. The candidate shall be eligible to appear in the examination provided :

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- He/ She bears good moral character.
- b. The examination shall be held in accordance with the syllabus prescribed by the Department from time to time.
- c. The examination shall consist of Practical and Exhibit Display.
- d. The Practical paper shall be set by examiner on the spot.
- e. The medium of instruction/examination shall be English/Punjabi/Hindi in general.
- f. The marks of exhibit display shall be based on House Test and performance of the students.
- g. The marks of exhibit display shall be submitted to the Director of the Department fifteen days before the commencement of the examination.
- h. Minimum number of marks required to pass the examination shall be 35% in each Practical/Exhibit Display separately.
- i. If the candidate Absent/Fails in one or more Practical Examination her result shall be declared Fail.
- j. The result shall be declared and published by the Department.
- k. The successful candidates shall be awarded division according to the following criteria: -
  - a. Those who obtain 60% or more marks – First division.
  - b. Those who obtain 50% or more but less than 60% marks – Second Division
  - c. Those who obtain 35% or more marks but less than 50% - Third Division
- l. Each successful candidate shall be awarded a Certificate Signed by the Director of the Department showing the division and the Aggregate Marks obtained.
- m. Fee for issuing of duplicate certificate shall be decided from time to time by the approval of the worthy Vice-Chancellor.

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**CRITERIA FOR ADMISSION**

**The Committee makes the following recommendations after deliberations:-**

<b>1.</b>	<b>Name of the Course</b>	<b>Certificate Course in Web Development</b>		
<b>2.</b>	<b>Duration</b>	Six Months		
<b>3.</b>	<b>Commencement of Course</b>	July & January Every Year		
<b>4.</b>	<b>Eligibility</b>	10+2 pass Boys & Girls Candidates from Punjab School Education Board or its equivalent with minimum 35% marks.		
<b>5.</b>	<b>Venue</b>	Department of Lifelong Learning, Guru Nanak Dev University, Amritsar.		
<b>6.</b>	<b>No. of Seats</b>	40 seats		
<b>7.</b>	<b>Mode of Admission</b>	(i) The admission will be made by a committee duly constituted by the worthy Vice-Chancellor strictly on the basis of the merit of the candidates in 10+2. (ii) If any of the admitted student remains absent consecutively for fifteen days without prior information and permission of the heading authority, his/her name shall be struck off from the rolls of the Department and the next candidate on the waiting list in order of merit of the respective course shall be admitted in his/her place with the permission of the Director of the Department.		
<b>8.</b>	<b>Fee Structure</b>	<b>Rs.13150/-</b>		
	<b>Total Fee (July 2026 – December 2026) (January 2027- June 2027)</b>	Rs.13150/ which includes: - (To be deposited at the time of Admission) Admission Fee = Rs. 2200/- Examination Fee = Rs.1400/- Tuition Fee: Rs. = Rs.9300/- Identity Card Fee = Rs.250/- The admission with late fee of Rs.800/- may be made within a week from the date of interview with the permission of the Director of the Department.		
<b>9.</b>	<b>Late fee at the time of admission</b>	<b>July 2026 to Dec 2026</b>	<b>Jan 2027 to June 2027</b>	<b>Fees</b>
		May 8 <sup>th</sup> 2026 to July 31 <sup>th</sup> 2026	Jan 1 <sup>st</sup> 2027 to Jan 29 <sup>th</sup> 2027	Nil
		Aug 3 <sup>rd</sup> 2026 to Aug 11 <sup>th</sup> 2026	Feb 2 <sup>nd</sup> 2027 to Feb 11 <sup>th</sup> 2027	Nil
		Aug 12 <sup>th</sup> 2026 to Aug 20 <sup>th</sup> 2026	Feb 12 <sup>th</sup> 2027 to Feb 19 <sup>th</sup> 2027	RS. 3000/-
		Aug 21 <sup>st</sup> 2026 to Aug 31 <sup>st</sup> 2026	Feb 23 <sup>rd</sup> 2027 to Feb 26 <sup>th</sup> 2027	RS. 4000/-
		Sep 1 <sup>st</sup> 2026 to Sep 10 <sup>th</sup> 2026	Mar 2 <sup>nd</sup> 2027 to Mar 10 <sup>th</sup> 2027	RS. 6000/-
		Sep 11 <sup>th</sup> 2026 to Sep 18 <sup>th</sup> 2026	Mar 11 <sup>th</sup> 2027 to Mar 19 <sup>th</sup> 2027	RS. 9000/-
		<b>Within 15 Days from the date of closing of admission.</b>		RS. 10000/-
<b>10.</b>	<b>Review of Course of Reading</b>	The syllabus committee constituted by the worthy Vice-Chancellor will review the course of reading for the session.		
<b>11.</b>	<b>Conduct of Examination Evaluation &amp; Award of Certificate.</b>	To be decided with the approval of worthy Vice-Chancellor.		

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**SCHEME OF STUDY AND EXAMINATION**

	<b>SCHEME OF STUDY</b>		<b>SCHEME OF EXAMINATION</b>	
<b>Course Code</b>	<b>Name of Paper</b>	<b>Credits/ Hrs per week</b>	<b>Total Marks</b>	<b>Examination Hrs.</b>
<b>CWD051</b>	<b>Paper- I (Theory) Web Development Concepts</b>	<b>8 Hrs.</b>	<b>75</b>	<b>3 Hrs.</b>
<b>CWD052</b>	<b>Paper II- (Practical) Practical Approach to Front End and Back End</b>	<b>8 Hrs.</b>	<b>100</b>	<b>4 Hrs.</b>
<b>CWD053</b>	<b>Project</b>	<b>2 Hrs.</b>	<b>50</b>	
<b>CWD054</b>	<b>Seminar/Presentation</b>	<b>2 Hrs.</b>	<b>25</b>	
	<b>Total</b>		<b>250</b>	

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**PAPER – I (THEORY)**  
**CWD051:- WEB DEVELOPMENT CONCEPTS**

**Time: 3 Hrs.**

**M.M.: 75**

**Instructions for the Paper Setters:**

The paper setter is required to set 9 Questions in all and the students are required to attempt 05 Questions. First Q is compulsory and consists of 15 short answer type Questions of one mark each which will be from entire syllabus. Section “A”, “B”, “C”, “D” consists of 2 Questions. Each student is required to attempt 1 Q from every section and all Questions carry 15 marks each.

**COURSE OBJECTIVE:**

- The six months course in Web Development aims to equip learners with the fundamental and practical skills needed to build modern, responsive, and dynamic websites.
- The program focuses on developing proficiency in HTML, CSS and PHP structuring and designing visually appealing web pages.
- It also introduces server-side programming using PHP and database management with MySQL, enabling students to develop web applications.
- By the end of the course, learners will be able to design, develop, and deploy functional websites, understand client-server architecture, and apply industry-relevant tools and best practices for real-world web development projects.

**SECTION-A**

**BASICS OF WEB DESIGN**

Introduction to Internet, Brief History of internet, World Wide Web, Introduction to Web Technology, Careers in Web Designing or Job Roles, Introduction to Website and its working, Types of Websites (Static and Dynamic Websites), Fundamental Principles of Website Design Difference Between Web Designer and Web Developer.

**SECTION-B**

**HTML AND HTML 5**

**Introduction to HTML:-** Basic structure of HTML Document, creating and Saving HTML document, HTML tags such as header tags, Body tag and their attributes, Headings, paragraphs,

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line breaks, font tags and attributes, Text formatting (bold, italic, underline), paragraph formatting tag, List (order and unordered list tags), Anchor tag, Internal vs external links, Email links , Bookmark links span, hyperlinks, Inserting images, Image attributes (alt, width, height), Audio and video tags and its attributes, Creating tables, Rows, columns, headers, Table attributes (border, padding, spacing), Merging cells (rowspan, colspan), Form structure, Input types (text, password, email, radio, checkbox), Buttons and labels, frames, tables, form tags and its attributes etc. Introduction to HTML5, Advance features of HTML5. difference between HTML and HTML5, Basic structure of an HTML5 document, header, footer, section, article, nav, aside, Multimedia Elements, audio and video, source and attributes, Forms in HTML5, input types: email, url, number, range, date, color attributes, placeholder, required, autofocus, pattern

### **SECTION-C**

#### **MySQL**

**Basic Concepts of MySQL:-** Features and advantages ,Relational database concepts (tables, rows, columns), Installing MySQL (XAMPP, WAMP, standalone) , Creating and deleting databases, Selecting a database, Data types (INT, VARCHAR, DATE, etc.), Creating tables, Basic commands: Create, Alter, Drop, Select, Insert, Update, Delete, Filtering data (WHERE clause), order by, distinct, Constraints:-primary key, foreign key, unique, not null, default, Integration with PHP Using MySQL with web apps, Basic knowledge of phpMyAdmin

### **SECTION -D**

#### **PHP**

Introduction to PHP Frameworks, Language Fundamentals, Data types, variables, constants, Types of Operators, Conditional statements (if, else, else if, switch) , Loops (for, while, do-while, for each) ,Break and continue, Defining and calling functions, Parameters and return values, Variable scope (local, global, static) , Built-in functions Arrays & Functions, String handling functions, Server-Side Processing, Processing Forms via GET/POST, Form validation, Handling user input securely, file handling, Reading and writing files, File upload handling, File permissions, State and Persistence, Creating and destroying sessions ,Using cookies, Session security, Error and exception handling, Basics Web Application Development.

**Developing Web Applications using PHP & MySQL:** Web Application Basics, Architecture of Web Application. How to create Database Connection using PHP & MySQL, CRUD (Create, Retrieve, Update, and Delete) Operations & implementations.

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**COURSE OUTCOMES:-**

- After completing this course, students will be able to create interactive web interfaces using dynamic, database driven web applications using HTML, CSS, PHP and MySQL.
- They will be able to understand and apply client-server architecture, perform testing and debugging of web applications, and optimize websites for performance and usability.
- Students will also gain the ability to deploy web projects and use modern development tools while applying logical thinking and problem-solving skills in real-world web development scenarios.

**Reference Books:**

1. Sharma, A., & Gupta, A. (2019). Fundamentals of Internet Applications (2nd ed.). Lakhanpal Publishers.
2. Lemay, L. (2018). Mastering HTML, CSS & JavaScript Web Publishing. BPB Publications.
3. Jain, S. (2017). Web Designing and Development Training Guide. BPB Publications.
4. Nixon, R. (2015). Learning PHP, MySQL & JavaScript (4th ed.). Shroff Publishers.

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**PAPER – II (PRACTICAL–I)**

**CWD052:- PRACTICAL APPROACH TO FRONT END AND BACK END**

**Time: 4 Hrs.**

**Max Marks: 100**

**Instructions for the paper Setters:**

<b>COURSE OBJECTIVES:-</b>
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<b>By the end of this course students will be able to:</b>
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| <ul style="list-style-type: none"><li>• Understand the fundamentals of web development; build structured web pages using HTML and CSS.</li><li>• Design responsive and visually appealing layouts with CSS, Develop dynamic web applications using PHP.</li><li>• Work with databases using MySQL, Integrate PHP with MySQL.</li><li>• Implement user authentication systems, Apply basic web security practices Debug and test web applications, Deploy simple web applications</li></ul> |
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## **HTML & HTML5**

How to design webpage, Website using navigation bar, home page layout in a real-time designing. Basic Structure of HTML, Head Section and Elements of Head Section, Meta Tags, External Link Tags, HTML Structure Tags, Table Tag, Div Tag, Frames, Content / Media Tags, Header Tags, Paragraph, Span, Pre Tags, Anchor Links and Named , Anchors, Image Tags / Image Hot Spots, Object Tag/embed tag, frame Tags, Working with Forms, Form Tag, POST and GET Method, Text Input, Text Area, Checkbox, Image Input and Radio, Select Option, Option Group, File Upload and Hidden Fields, Submit Button, Reset Button. Introduction to HTML5, New Structure Tags, Section, Navigation, Article, Aside, Header, Footer, New Form Tags, search, tel, url, email, number and range, New Media Tags, Audio Tag, Video Tag, designing a Layout using HTML5 features.

## **Cascading Style Sheets**

Introduction to Cascading Style Sheets, how we can create different Style Sheets (In line, Internal and External style sheets), implementation of CSS in Website Layout and Print Layout, how we can use different Types of selector in Html document (Universal Selector Type Selector, Class Selector, ID Selector, Child Selector, Descendant Selector, Adjacent Sibling Selector, Attribute Selector, Query Selector, Nesting of Selectors).CSS properties(Background Properties, Block Properties, Box Model Properties, List Properties, Border Properties, Positioning Properties and how these Properties are useful in Real-time Designing.

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**Using CSS for Real-time Practical Works:** Defining the Text Styles, Defining the Background Styles, designing a Menu System (Horizontal, Vertical and Drop Down), Custom Form Designing, DIV+CSS Layout Design, PSD to CSS Conversion.

## **MySQL**

**MySQL:** Create Database Using Workbench and phpMyAdmin, ER Modelling with a Case Study, Create, Update, Delete, Insert Commands, Where Clause, ORDER BY, DESC and ASC, Group By, Wild Cards, Aggregate Functions, Alter, Drop & Rename , Null value, Sub-Queries, Cross join, Left Join, Right Join, Inner Join, Unions.

## **PHP**

**Introduction to PHP,** Data Types, Variables, Constant, Operators in PHP, If else, Switch Case, iterative control statements while, do while for each, PHP String handling Functions Built in functions, User Defined functions, Forms using GET, POST Methods. PHP Session & Cookies, PHP File handling Function Fopen(), Fclose File exists, Fwrite, Fgets, copy, unlink, Exception & Error Handling using try Catch Example, PHP Regular Expression/Regex preg\_match(), preg\_replace(), Email Filters, Connect PHP page with MySQL, Executing SQL Commands using CRUD(Create, Retrieve, Update, Delete)Operations with MySQL.

<b>COURSE OUTCOMES:-</b>
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<b>By the end of the course students will be able to:</b>
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| <ul style="list-style-type: none"><li>• Design and structure web pages using HTML and CSS.</li><li>• Develop dynamic, server-side applications using PHP, and manage databases using MySQL.</li><li>• Implement user authentication (login/registration systems).</li><li>• Design and maintain simple web applications.</li></ul> |
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### **Reference Books:**

1. Sharma, A., & Gupta, A. (2019). Fundamentals of Internet Applications (2nd ed.). Lakhanpal Publishers.
2. Lemay, L. (2018). Mastering HTML, CSS & JavaScript Web Publishing. BPB Publications.
3. Jain, S. (2017). Web Designing and Development Training Guide. BPB Publications.
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**Section A**

**Assignments to be done by students in practical files**

1. **Create an HTML document that displays the following text using appropriate formatting tags:**
  - Welcome to HTML!
  - This is **bold**, this is *italic*, this is underlined
  - This is **important**, and this is *emphasized*
  - Here is a highlighted word.
  - The price dropped from ~~\$100~~ to \$80.
2. **Create a webpage with the following structure using heading (<h1> to <h6>) and paragraph (<p>) tags:**
  - A main title at the top
  - Subheadings for sections (like Introduction, Benefits, Conclusion)
  - A short paragraph under each heading
3. **HTML Structural Tags**
  - Use <header>, <footer>, <section>, <nav>, and <article> to create a simple webpage layout (blog or news page).
  - Nest a <section> inside an <article> and demonstrate its semantic purpose.
4. **Tables**
  - Design a table displaying student marks with headers for Roll No, Name, Father Name Subject, and Score.
  - Add row and column spanning to merge cells.

NAME		

APRIL		

2022		
FIESTA		

5. **Div Tag and Layout**
  - Use <div> to divide a webpage into three sections: a top banner, a content area, and a footer. Apply basic styling.
6. **Frames and Iframes**
  - Create an HTML page with two frames (or iframes): one for navigation and another for displaying content.
  - Load an external website using an <iframe> and set width and height.

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**7. Content / Media Tags**

- Embed an audio file and a video file using <audio> and <video> tags with controls and auto play attributes.

**8. Header, Paragraph, Span, and Preformatted Text**

- Add various levels of heading tags (<h1> to <h6>) to a sample page.
- Create a paragraph using <p> and highlight a word using <span>.
- Use <pre> to display preformatted poetry or code.

**9. Anchor Links and Named Anchors**

- Create internal links using <a href="#section1"> and set up a named anchor using id="section1" on a target element.
- Add external links that open in a new tab.

**10. Image Tags / Image Hotspots**

- Display an image using the <img> tag.
- Use <map> and <area> to create clickable hotspots on an image.

**11. Object and Embed Tags**

- Embed a PDF or YouTube video using <object> and <embed> tags with proper attributes.

**12. Forms and Inputs**

- Create a comprehensive form with the following elements:
  - **Form Tag + POST/GET Method:** Create a form that submits using both GET and POST (two versions).
  - **Text Input and Text Area:** Collect user's name and a comment.
  - **Checkbox and Radio Buttons:** Provide options for selecting gender and interests.
  - **Select, Option Group:** Create a dropdown menu of countries grouped by continent.
  - **File Upload:** Allow the user to upload a resume.
  - **Hidden Field:** Add a hidden input for tracking session ID.
  - **Submit and Reset Buttons:** Include buttons to submit and reset the form.

**13. Grocery List (Unordered List)**

- Create a web page that displays your weekly grocery list using an unordered List. Include at least **5 grocery items**.

**Example Output:**

- Milk
- Eggs
- Bread
- Rice
- Apples

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**14. Steps to Make Tea (Ordered List)**

- Create an HTML page that shows steps to make a cup of tea using an ordered list. Include at least 6 steps.

**Output:**

1. Boil water
2. Add tea leaves
3. Let it brew
4. Add milk
5. Strain the tea
6. Serve hot

**15. Web Technologies (Description List)**

Use a description list to display **at least 4 web technologies** with a short description of each.

**Output:**

- **HTML:** Used to structure web content
- **CSS:** Styles the HTML content
- **JavaScript:** Adds interactivity to web pages
- **PHP:** Server-side scripting language

**16. Nested List of Courses**

- Create a nested list showing **departments** and their **respective courses** using nested unordered or ordered lists.

**Output:**

- Computer Science
  - C Programming
  - Data Structures
  - Web Development
- Commerce
  - Accounting
  - Business Studies
  - Economics

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**17. Travel Bucket List**

- Create a combination of ordered and unordered lists showing a **travel bucket list**. Use ordered list for continents and unordered list for countries in each.

**Example Output:**

1. Asia
  - Japan
  - Thailand
2. Europe
  - Italy
  - France
3. North America
  - Canada
  - USA

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**Section B**

**Practical Assignments Using CSS**

**Assignment 1: Apply Basic Text Styling**

Create an HTML page with a paragraph about yourself. Use CSS to:

- Change the font to Arial
- Set the font size to 18px
- Make the text color blue
- Center-align the text

**Assignment 2: Style a Navigation Menu**

Create a horizontal navigation bar using an unordered list. Use CSS to:

- Remove bullet points
- Set the background color to gray
- Change text color to white
- Add spacing between links

**Assignment 3: Create a Styled Contact Form**

Design a contact form using HTML and style it using CSS to:

- Set a light background color
- Add padding and margin
- Style the input fields (e.g., border, width, font)
- Add hover effect to the submit button

**Assignment 4: Box Model Practice**

Create three div elements with different background colors

- Apply margin and padding
- Set width and height
- Add borders to all boxes

**Assignment 5: Use Classes and IDs**

Create an HTML page with 3 sections:

- Use **classes** to style multiple elements with the same background color
- Use **IDs** to give each section a unique font size or style
- Center the whole content on the page

**Assignment 6: Hover Effects**

Create a list of items (like a product list or links). Use CSS to:

- Change the background color of each item when the mouse hovers over it
- Use transition to make the effect smooth

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**Assignment 7: Responsive Design**

Create a web page with a header, two-column layout, and footer. Use CSS to:

- Make the layout adjust for small screens (e.g., columns stack vertically)
- Use media queries to change background color on smaller screens

**Assignment 8: Google Fonts Integration**

Create a portfolio HTML page and use CSS to:

- Import a font from Google Fonts
- Apply the font to the entire page
- Style headings and paragraphs with different font weights and sizes

**Practical Assignments Using Inline and External Style Sheets**

**Assignment 1: Use Inline CSS to Style Personal Information**

Create an HTML file with a short bio (name, age, hobby, etc.). Use **inline CSS** to:

- Change the color of your name to red
- Make the hobby bold
- Set the background color of one paragraph to sky blue

**Assignment 2: Create a Simple Web Page with External CSS**

Create two files:

- Home.html — the main HTML page
- style.css — an external CSS file

Apply the following styles using the **external stylesheet**:

- Set the body background to light blue
- Use a different font (e.g., Verdana)
- Style all <h1> elements to be red and center-aligned
- Add padding and border to all <p> elements

**Assignment 3: Compare Inline vs External Styling**

Create an HTML file with three paragraphs. Style:

- First paragraph using **inline CSS**
- Second using an **internal style block** inside <style> tags
- Third using an **external stylesheet**

**Write a note in a comment describing the difference between the three methods.**

**Assignment 4: Inline Style for a To-Do List**

Create a to-do list using <ul> and <li>. Use **inline styles** to:

- Set different text colors for each list item
- Highlight one item with a background color
- Make one item italic

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**Assignment 5: Use External CSS for a Portfolio**

Design a basic portfolio page (home.html) and style it using an **external CSS file**:

- Set a background image or color
- Style buttons with padding, border-radius, and hover effects
- Make images responsive
- Add custom fonts using Google Fonts

**Assignments Based on CSS Selectors**

**Assignment 1: Universal and Type Selectors**

Create an HTML page with headings, paragraphs, and a list. Use:

- The **universal selector** to apply a font and margin to all elements
- The **type selector** to give different styles to <h1>, <p>, and <ul>

**Assignment 2: Class and ID Selectors**

Create a product catalog with multiple product cards.

- Use **class selectors** to apply the same style (border, padding, shadow) to each card
- Use **ID selectors** to highlight a featured product with a unique style

**Assignment 3: Child and Descendant Selectors**

Create a navigation bar inside a header.

- Use a **child selector (>)** to style only immediate children of the header
- Use a **descendant selector (space)** to style all links inside nested elements

**Assignment 4: Adjacent Sibling Selector**

Create sections with <h2> followed by <p> tags.

- Use **adjacent sibling selector (h2 + p)** to style only paragraphs that immediately follow a heading

**Assignment 5: Attribute Selector**

Create a form with different input types.

- Use **attribute selectors** to style:
  - [type="text"] with a specific background
  - [type="submit"] with a custom button style

**Assignment 6: Nesting and Query Selectors**

Use the **:nth-child**, **:hover**, **:focus**, and nesting (in SCSS or modern CSS) to style:

- A list with alternate row colors
- Inputs that change style on focus
- Links that change color on hover

## **Assignments Based on CSS Properties**

### **Assignment 7: Background Properties**

Create a landing page with:

- A **background image** covering the whole page
- Use **background-size**, **background-repeat**, and **background-position**

### **Assignment 8: Box Model and Block Properties**

Design a content box with:

- Width, height
- Padding, margin
- Border and background color
- Add comments explaining how the **box model** works

### **Assignment 9: List Properties**

Create a custom list with:

- **List-style-type** set to square, circle, or none
- **Custom bullet image** using list-style-image

### **Assignment 10: Border Properties**

Create three boxes showing:

- Solid border
- Dotted border
- Rounded border using **border-radius**

### **Assignment 11: Positioning Properties**

Create an HTML page with 3 boxes:

- One **fixed** at the top (header)
- One **absolute** inside a relatively positioned container
- One **sticky** element during scroll

### **Assignment 12: Defining Text and Background Styles**

Design a blog article page. Use CSS to:

- Style headings, paragraphs, and blockquotes
- Apply background color or gradient
- Use a Google Font

### **Assignment 13: Designing Menu System**

Create and style three types of menus:

- Horizontal Menu using inline
- Vertical Menu using block elements
- Dropdown Menu using hover and position properties

### **Assignment 14: Custom Form Design**

Design a login or registration form with:

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- Styled input fields and labels
- Rounded corners and box shadow
- Custom styled submit button with hover effect

**Assignment 15: DIV + CSS Layout Design**

Create a responsive webpage layout using only <div> and CSS:

- Header
- Navigation bar
- Content section
- Sidebar
- Footer

**PHP Practical Assignments**

**Assignment 1: Variables and Operators**

- Declares variables for **name**, **age**, and **marks** in 5 Different Subjects.
- Displays the result in the browser using echo

**Programs**

- Uses **arithmetic operators** to calculate total marks and average marks.
- Program to Calculate area of Circle, circumference of circle.
- Program to Calculate area of Rectangle, Perimeter of Rectangle.
- Program to Calculate simple interest.
- Program to swap two numbers without using third variable and by using third variable.

**Assignment 2: Condition Statements (If, If Else, if else if, nested if, Switch statement)**

- Check if a user is eligible to vote (age  $\geq$  18)
- Check given number is even or odd.
- Print result report.
- Calculate salary statement.
- Find the roots of quadratic equation.
- Calculate net bill of a product.
- Use a **switch statement** to print the day of the week based on a number (1–7)

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**Assignment 3: PHP Loops**

- For loop to print numbers 1 to 10
- To print table of given number.
- To find the factorial of given number.
- To print Fibonacci series.
- To check given number is palindrome or not.
- To calculate sum of each digit.
- To print various pattern using nested loop.
- While loop to display even numbers from 2 to 20
- Do while loop to count down from 5 to 1

**Assignment 4: Arrays – Basic Operations**

- Accept and print 5 different numbers using array.
- Calculate sum of 5 different numbers using array.
- Accept and display elements of matrices using two dimensional array.
- Calculate the sum of two matrices.
- Calculate the sum of diagonal of matrices.
- Calculate the sum of each element of matrix.
- Product of two matrices.

**Assignment 5: PHP Functions**

- Write a function in PHP to calculate the **factorial** of a given number.
- Write a PHP function to check whether a number is **prime or not**.
- Create a function in PHP to check whether a given string is a **palindrome**.
- Create a function to **reverse a number** in PHP.
- Write a PHP function to **generate the Fibonacci series** up to a given number of terms.
- Write a function to check whether a given number is an **Armstrong number**.
- Create a PHP function to **swap two numbers** using a third variable.
- Write a function that returns the **maximum of three numbers**.
- Create a function to convert **Celsius temperature to Fahrenheit**.
- Write a PHP function to **sort an array** in ascending order.
- Create a function to check whether a given year is a **leap year or not**.
- Write a function to calculate the **area of a circle**, given the radius.

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**Assignment 6 : PHP String Handling Functions**

- Write a PHP function to **reverse a string** using built-in string functions.
- Write a function to convert a string to uppercase, lowercase, and capitalize the first letter of each word.
- Develop a function to count the number of words in a string.
- Write a PHP function to check whether a string is a palindrome or not.
- Create a function to compare two strings (case-sensitive and case-insensitive).
- Write a function to count the frequency of each character in a string.

**Practical assignments using MySQL**

1. Create a database named School and a table Students with the following fields:  
RollNo INT, Name VARCHAR, Class VARCHAR, DOB DATE, Marks INT.

**Insert at least 5 records.**

- Write a query to display all students who scored more than 75 marks.
- Write a query to display students born after the year 2005.
- Display the names of students in alphabetical order.

**2. Aggregate Functions**

- Calculate the average marks of students.
- Find the maximum and minimum marks in the Students table.
- Count the number of students in each class.

**3. WHERE, AND, OR, NOT Clauses**

- Write a query to select students who are in class '10th' and have marks greater than 60.
- Write a query to find students who are **not** in class '12th'.

**4. Joins**

Create two tables:

- Department (DeptID, DeptName)
- Employee (EmpID, EmpName, DeptID, Salary)

Insert at least 4-5 records in both tables.

- Write a query to join Employee and Department tables and display EmpName, DeptName, and Salary.
- Display the employees working in the "IT" department.

**5. Group by and having**

- Group employees by DeptID and calculate the total salary for each department.
- Display only those departments where the total salary is more than 50,000.

**6. Sub queries**

- Write a query to find the name of employees who earn more than the average salary.

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- Write a query to find departments where no employee earns more than 30,000.

**7. Data Modification**

- Update the salary of employees by 10% who are in the “HR” department.
- Delete all employees whose salary is less than 20,000.

**8. Constraints and Keys**

Create a table LibraryBooks using constraints:

- BookID (Primary Key),
- Title (NOT NULL),
- Author,
- Quantity (must be > 0).

Insert at least 3 records and demonstrate violation of NOT NULL and CHECK constraints.

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**CWD053**  
**Project**

**Max Marks 50**

At the end of the course students have to submit a real life based project. In that project they have to create website with the help of HTML/CSS/PHP/MYSQL. Project marks shall be given based on their project work. Students can work individually or in a group (maximum of two students under the guidance of supervisor.

**CWD054**  
**Seminar/Presentation**

**Max Marks 25**

**Student will share their own thoughts, reflections or learning experiences on the topics assigned to them in the form of seminar and presentation from their entire syllabus.**

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**PANEL OF EXAMINERS**

**The Panel of Examiners recommended by the syllabus committee for the Annual examination of One Year Diploma in Web Designing and Development 2026-27 at University Campus and for the Re-appear exam which is to be held as per Ordinance.**

1. Sh. Tirath Singh Incharge Center for IT Solutions.  
Guru Nanak Dev University, Asr.  
M.NO: 9501666933  
Email: [tsingh\\_97@yahoo.com](mailto:tsingh_97@yahoo.com)
  
2. Dr. Parminder Kaur, Professor,  
Deptt. of Computer Science, GNDU, Asr.  
M.No:9914010452  
Email: [Parminder.dcse@gndu.ac.in](mailto:Parminder.dcse@gndu.ac.in)
  
3. Dr. Munish Saini, Assistant Professor,  
Deptt of Computer Engg. & Technology  
Guru Nanak Dev University, Amritsar  
Email: [cet@gndu.ac.in](mailto:cet@gndu.ac.in)
  
4. Dr. Amit Chhabra, Assistant Professor  
Deptt. of Computer Engg & Tech .  
M.no:9815988882  
Email: [amit.dcse@gndu.ac.in](mailto:amit.dcse@gndu.ac.in)
  
5. Dr. Kiranbir Kaur, Assistant Professor  
Deptt. of Computer Engg & Tech. GNDU, Asr.  
Mno:9872049066  
Email: [kiran.dcse@gndu.ac.in](mailto:kiran.dcse@gndu.ac.in)
  
6. Sh. Sandeep Singh Waraich, Assistant Professor,  
Deptt. of Computer Science,  
Guru Nanak Dev University, Asr.  
M.NO:9914507007  
Email: [Swraich.dcse@gnsu.ac.in](mailto:Swraich.dcse@gnsu.ac.in)

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7. Dr. Anil Kumar, Assistant Professor,  
Deptt. of Computer Engg. & Tech.  
Guru Nanak Dev University, Asr.  
M.NO:9501033889  
Email: [Anil.dcse@gndu.ac.in](mailto:Anil.dcse@gndu.ac.in)
  
8. Sh. Chetan Marwaha, System Manager  
Deptt. of Computer Science,  
Guru Nanak Dev University, Asr.  
M.NO:9501004679  
Email: [marwaha.chetan@gmail.com](mailto:marwaha.chetan@gmail.com)
  
9. Sh. Sandeep Sood , System Manager,  
Centre for IT Solutions  
Guru Nanak Dev University, Asr.  
M.NO:9988080275  
Email: [soodsandeep123@yahoo.com](mailto:soodsandeep123@yahoo.com)
  
10. Sh. Vishal Malhotra, System Manager,  
Centre for IT Solutions  
Guru Nanak Dev University, Asr.  
M.NO:9417274774,  
Email: [vishal.cbm@gmail.com](mailto:vishal.cbm@gmail.com)