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Web Technologies — Complete Syllabus

BTEUP Diploma in Computer Science & Engineering • 3rd Semester • Session 2026-27
Subject 3.4 (Practicum) • Total 100 Marks • 3 Credits • L 1 - P 4

Examination Scheme

Code	Paper	Type	L - P	Credits	Internal	External	Total
3.4	Web Technologies	Practicum	1 - 4	3	Practical 60	Practical 40 (3 hrs)	100
Web Technologies Total				3	60	40	100

What This Subject Aims To Do

To enable students to design professional, database-backed, dynamic and feature-based websites, using programming with PHP applications — a broad but practical introduction to server-side web technologies. By the end you should be able to: analyse a webpage and identify its elements and attributes; create webpages using HTML; use Cascading Style Sheets; build dynamic webpages using JavaScript (client-side); and build dynamic webpages using PHP (server-side).

Unit-Wise Complete Topic List

Unit	Topic	Periods	Marks Share
1	Web Development Introduction	2	10%
2	HTML Basics	3	25%
3	Cascading Style Sheets	3	15%

4	JavaScript	3	25%
5	PHP	3	25%

Unit 1 — Web Development Introduction (2 Periods, 10%)

Topics: WWW, internet, browser, search engine; client-server model; URL; web pages, website and web services; types of websites (static, dynamic, responsive); developer options of browser (view page source, developer tools, inspect element).

In simple words: How the web works end to end, and the browser tools professionals use every day to inspect and debug a site.

Unit 2 — HTML Basics (3 Periods, 25%)

Topics: HTML document and basic structure; syntax; HTML tags and attributes; types of tags; rules of nesting; basic tags; page formatting (paragraph, line break, blank space, background, div and span); text formatting (headings, bold, italic, marked, small, deleted, inserted, subscript, superscript); comments; horizontal lines; lists (ordered, unordered, definition); images, text links, image links, opening a page in a new window/tab, linking within a page; table tags, frames and iframe; HTML forms.

In simple words: The building blocks of every webpage: structure, text, images, links, lists, tables and forms.

Unit 3 — Cascading Style Sheets (3 Periods, 15%)

Topics: Introduction and benefits of CSS; CSS syntax; CSS implementation (inline, internal, external); CSS selectors (ID, class, grouping, universal, pseudo-classes); CSS properties (background colour/image, border style, height, width, colour, text-align, font family/style/size, font-weight); box model in CSS (margin, border, padding).

In simple words: How to make pages look good: colours, fonts, spacing and layouts, without changing the HTML structure.

Unit 4 — JavaScript (3 Periods, 25%)

Topics: JavaScript introduction; variables, data types, operators; control flow (if-else, for loop, while loop, do-while loop); declaring functions and calling functions with parameters; adding JavaScript to web documents; JavaScript objects; Document Object Model; HTML events and calling JavaScript functions on events.

In simple words: How to make pages interactive in the browser: checking inputs, responding to clicks, and changing the page without reloading it.

Unit 5 — PHP (3 Periods, 25%)

Topics: Server-side scripting; arrays, functions and forms; advanced PHP; databases — basic commands with PHP examples, connection to server, creating a database, selecting a database, listing databases and table names, creating a table, inserting data, altering tables, queries, deleting a database, deleting data and tables; phpMyAdmin and database bugs.

In simple words: The server side: how a website talks to a database, saves form data, and builds pages dynamically for each visitor.

Practical Work

- Install, configure and start using developer tools / code editor / browser.
- Pick any three websites and categorise them as static, dynamic or responsive, with reasons.
- List five web browsers and search engines.
- Open a website using Chrome Developer Tools; modify the text and background colour of a paragraph and take a screenshot.
- Create an HTML file with your name, a brief bio, an image and a list of hobbies.
- Design an HTML table listing five products with names, prices and descriptions.
- Build an HTML form with name, email, message, radio buttons, a newsletter checkbox and a submit button.
- Style elements using element, class, ID and pseudo-class selectors.
- Create a navigation bar using Flexbox, with a logo and evenly spaced links.
- Create a webpage layout using CSS Grid (header, sidebar, main content, footer).
- Write a JavaScript program that rates a password as Weak, Medium or Strong based on length.
- Validate a form for a valid email and a password (minimum 8 characters, at least one number).
- Practising PHP: basics; web development application; MySQL.
- Installation of WAMP/XAMPP Server.

Reference Books (as listed in the syllabus)

- Web Technologies — A Computer Science Perspective — Jeffrey C. Jackson
- Internet & World Wide Web: How to Program — Deitel, Deitel & Goldberg, Pearson Education
- Web Programming: Building Internet Applications — Chris Bates
- Web Applications: Concepts and Real World Design — Knuckles

Source: BTEUP 2nd Year curriculum (folder2627), approved in C.D.C. meeting held on 16.07.2026. Topic lists follow the official syllabus; short explanations are the author's own plain-English summaries, not syllabus text.

Please confirm with your own polytechnic for any local changes.

