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Web Technologies — Complete Syllabus

BTEUP Diploma in Information Technology • 3rd Semester • Session 2026–27
Subject 3.4 (Practicum) • Total 100 Marks • 3 Credits • L 1 – P 4

About this document Web Technologies is subject 3.4 of the 3rd semester of the Diploma in Information Technology. It is a practicum (1 lecture and 4 practical periods a week) with NO theory paper: assessment is 60 marks internal practical and 40 marks external practical (3 hours). This document gives the complete unit-wise syllabus, the examination scheme, the practical exercises, the course outcomes and the reference books from the official curriculum. Two syllabus quirks: the course outcomes list CO4 twice (once for JavaScript, once for PHP), and Unit 4 is printed as “Java Scripts” while Unit 5 prints “PHP my admin”; the standard names are JavaScript and phpMyAdmin.

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

This course will enable the students to understand and develop competency amongst the students to design professional database backed dynamic and feature based web sites. The course covers the use of programming with PHP applications. The main objective for this course is to motivate student's interest in learning web-app development by giving them an

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insight into its possibilities through practical applications. In addition, the course also provides a sufficiently broad but practical introduction to server-side web technologies.

Unit-Wise Complete Topic List

Unit	Topic	Periods	Marks (%)
1	Web Development Introduction	2	10
2	HTML Basics	3	25
3	Cascading Style Sheets	3	15
4	Java Scripts	3	25
5	PHP	3	25

Total: 14 periods, 100%. The percentages are the suggested distribution of marks in the official syllabus, out of the 40-mark external practical examination. Unit 4 is printed as “Java Scripts” in the official syllabus; the standard name is JavaScript.

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 and responsive), developer options of browser (view page source, developer tools, inspect element etc.).

Practical exercise: Install, configure and start using developer tools / code editor / browser. Pick any three websites and categorize them as static, dynamic, or responsive with reasons for your classification. List 5 web browsers and search engines. Open any website using Chrome Developer Tools; modify the text and background colour of a paragraph and take a screenshot.

In simple words: How the web works — browsers, servers, URLs — the kinds of websites, and the developer tools that let you look inside any page.

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Unit 2 — HTML Basics (3 Periods, 25%)

Topics: HTML document, basic structure of HTML, syntax, HTML tags and attributes, types of HTML tags, rules of nesting, basic tags (HTML tag, head tag, title tag, body tags). Page formatting: adding a new paragraph, adding a line break, inserting a blank space, changing page background, div and span tags. Text formatting: HTML headings, formatting elements (b bold text, strong important text, i italic text, em emphasized text, mark marked text, small small text, del deleted text, ins inserted text, sub subscript text, sup superscript text), comments, horizontal lines. Creating lists: ordered list, unordered lists, definition lists. Others: images, text links, image links, opening a page in a new window or tab, linking to an area of the same page, introduction to table tags, frames and iframe, HTML forms.

Practical exercise: Create an HTML file that contains your name, a brief bio, an image, and a list of hobbies. Design an HTML table listing five products with their names, prices, and descriptions, with proper column headers and styling. Build an HTML form with fields for name, email, message, radio buttons for gender, a checkbox for subscribing to newsletters, and a submit button.

In simple words: The structure of a web page — tags, headings, paragraphs, lists, links, images, tables and forms; everything that holds a page together before any styling.

Unit 3 — Cascading Style Sheets (5 Periods, 15%)

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

Practical exercise: Create an HTML file and use CSS to style elements using element selectors, class selectors, ID selectors, and pseudo-classes. Create a navigation bar using Flexbox, with a logo and several navigation links, evenly spaced and aligned. Create a webpage layout using CSS Grid, with a header, a sidebar, a main content area, and a footer.

In simple words: How a page is made to look good — selectors that pick out elements, properties that set colour, size and spacing, and the box model; plus Flexbox and Grid for page layouts.

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Unit 4 — Java Scripts (3 Periods, 25%)

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

Practical exercise: Write a JavaScript program that checks a user's input password and categorizes it as Weak, Medium, or Strong based on length. Validate a form to ensure that the user has entered a valid email and password (minimum 8 characters, at least one number).

In simple words: How a page becomes interactive — JavaScript in the browser: variables, functions, the Document Object Model, and running code when the user clicks or types.

Unit 5 — PHP (3 Periods, 25%)

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

Practical exercise: Practicing PHP basics. Practicing PHP: web development application. Practicing PHP: MySQL. Installation of WAMP/XAMPP server.

In simple words: The server side — PHP runs on the server, talks to a MySQL database, and builds the pages the browser receives; phpMyAdmin is the tool for managing the database.

Course Outcomes

- CO1: Analyze a webpage and identify its elements and attributes.
- CO2: Create webpages using HTML.
- CO3: Using Cascading Style Sheets to create webpages.
- CO4: Build dynamic webpages using JavaScript (client-side programming).
- CO4: Build dynamic webpages using PHP (server-side programming). [The syllabus prints CO4 twice; reproduced as printed.]

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Source: BTEUP IRDT Kanpur NEP-2020 curriculum for Diploma in Information Technology, effective session 2026-27 (urise.up.gov.in). 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.