

Lesson	Topic	Subject	Content	Syllabus Outcome	Syllabus Content
1	Foundations of Web Programming	Explore The Applications Of Web Programming	Introduction to interactive and responsive websites, covering Progressive Web Apps and e-commerce fundamentals.	SE-12-03	Explore the applications of web programming
2		Data Transfer and Web Protocols	Overview of internet data transfer, including IP addresses, DNS, packet switching, and key protocols like TCP/IP and HTTPS.	SE-12-03	Explore the applications of web programming Investigate and describe the function of web protocols and their ports
3		Website Accessibility	Examination of website accessibility standards, focusing on WAI guidelines, internationalisation, and W3C security measures.	SE-12-05	Investigate and explain the role of the World Wide Web Consortium (W3C) in the development of applications for the web
4		Open-Source Software (OSS) & Big Data and Web Architecture	Exploration of open-source principles in web development and the impact of big data on modern web architecture.	SE-12-05 SE-12-03	Explain the use and development of open-source software in relation to web development Investigate the effect of big data on web architecture
5-7	Front-end Development	Front-end Web Development	Fundamentals of HTML for structuring web pages and organising website content effectively.	SE-12-02	Model elements that form a web development system
8-9		Cascading Style Sheets (CSS)	Essential role of CSS in web development, covering design separation, style cascading, and responsive design principles.	SE-12-02	Investigate cascading style sheets (CSS) and its impact on the design of a web application
10		Web Browsers and their Development Tools	Insight into browser compatibility, engine differences, and utilisation of developer tools for web application optimisation.	SE-12-03	Explore and explain the influence of a web browser on web development including the use of developer (dev) tools
11		JavaScript	Introduction to JavaScript basics for creating interactive and dynamic web pages.	SE-12-03	Explore the types and significance of code libraries for front-end web development
12		Front-end Code Libraries	Overview of popular front-end libraries like React, Angular, and Vue.js, and their benefits in web development.	SE-12-03	Explore the types and significance of code libraries for front-end web development
13		Website Optimisation	Techniques for improving website performance, including image compression, caching, and code minification.	SE-12-06	Investigate methods to support and manage the load times of web pages/applications
14	Web Security and Development Practices	Securing the Web	Methods for securing websites using encryption, SSL certificates, and protection against common vulnerabilities.	SE-12-06	Explain the processes for securing the web
15		Version Control Systems (VCS)	Introduction to VCS concepts and Git for effective code management and collaboration in software projects.	SE-12-09	Investigate the reasons for version control and apply it when developing a web application
16	Back-end Development	Node.js and Setting Up the Environment	Three-part tutorial on Node.js, covering setup, core modules, and database integration with SQLite.	SE-12-02	Model elements that form a web development system
17		Working with Modules, File Systems, and HTTP	Three-part tutorial on Node.js, covering setup, core modules, and database integration with SQLite.	SE-12-02	Model elements that form a web development system
18		Integrating SQLite with Node.js	Three-part tutorial on Node.js, covering setup, core modules, and database integration with SQLite.	SE-12-02	Model elements that form a web development system
19		Collaborative Practices and the Impact of Back-end Development on Web Solutions	Exploration of front-end and back-end collaboration, emphasising the role of back-end systems in web applications.	SE-12-09	Describe how collaborative work practices between front-end and back-end developers improve the development of a web solution Assess the contribution of back-end web development to the success of a
20		Back-End Process for Managing a Web Request	Examination of back-end processes in web requests, including routing and middleware management with Express.js.	SE-12-03	Observe and describe the back-end process used to manage a web request
21		Learning SQL & Comparing Object-Relational Mapping (ORM) to SQL	Introduction to SQL basics and comparison with ORM for effective database management in web development.	SE-12-06	Apply a web-based database and construct a script that executes SQL Compare Object-Relational Mapping (ORM) to SQL
22-28	Practical Application	Programming for the Web – Assessment Task	Comprehensive project to design and build a Progressive Web App, applying both front-end and back-end skills.	SE-12-01, SE-12-02, SE-12-03, SE-12-05, SE-12-07, SE-12-08	Design, develop, and implement a progressive web app (PWA)
29	Advanced Topics	Tutorial – Shell Scripts	Basics of shell scripting and integration with Node.js applications, including security considerations.	SE-12-04	Develop a web application using an appropriate scripting language with shell scripts to make files and directories and searching for text in a text file
30		Content Management Systems	Overview of CMS platforms like WordPress, focusing on their components and role in digital content management.	SE-12-09	Research, experiment with, and evaluate the prevalence and use of web content management systems (CMS)