

## Module: Web Frontend Scripting 361

<b>Module name:</b>	Web Frontend Scripting 361
<b>Code:</b>	WFS361
<b>NQF level:</b>	6
<b>Type:</b>	Speciality – Diploma in Information Technology (Web Development)
<b>Contact time:</b>	130 hours
<b>Structured time</b>	16 hours
<b>Self-directed time</b>	104 hours
<b>Notional hours:</b>	250 hours
<b>Credits:</b>	25
<b>Prerequisites:</b>	WPR261

### Purpose

The purpose of the course is to introduce interactive and dynamic web design using a frontend web framework or library. The course covers important concepts related to how frameworks and libraries can be used to build client-facing, feature-rich applications in a declarative way using modern techniques.

Learners will learn how to implement templating, frontend routing, state management, handling user input, and working with events.

### Outcomes

Upon successful completion of this module, the student will be able to demonstrate:

- Detailed knowledge of frontend web development, including an understanding of and the ability to build composable, scalable and testable user interfaces; and an understanding of how web development relates to the broader field of software development.
- The use of appropriate, clear and concise vocabulary that is esoteric to web application development.
- The ability to identify, analyse and solve problems by creating modern websites that accommodate specified requirements and constraints, based on analysis, requirements modelling and specification.
- The ability to communicate effectively with a variety of audiences through a range of modes and media, in particular to present a clear, coherent and independent exposition of functional websites to any type of audience via reports or presentations and using appropriate discourse.
- The ability to work as part of a team, and to take responsibility for decisions and actions taken within the team.

### Assessment

Assessment is performed using a variety of instruments:

- Continuous evaluation of theoretical work through 2 assignments, 6 formative tests and a summative test.
- Continuous evaluation of project work, where the student must design, manage and report on the evaluation of testing methodologies and the selection of an appropriate methodology for a given scenario, justifying the choice made with well-formed arguments and evidence.

- Final assessment through an examination.
- The assignments or projects collectively will count 30% of your class mark.
- All tests will collectively account for 70% of your class mark.
- Your class mark contributes 30% towards your final mark for the subject, while the final assessment accounts for 70% of your final mark.

## Teaching and Learning

### Learning materials

#### Prescribed books (EBSCO)

- 📖 **Carlos Santana Roldán (2019) React Design Patterns and Best Practices : Design, Build and Deploy Production-ready Web Applications Using Standard Industry Practices, 2nd Edition. Birmingham, UK: Packt Publishing.**
- 📖 **Singh, H. and Bhatt, M. (2016) Learning Web Development with React and Bootstrap. Birmingham, UK: Packt Publishing.**

### Learning activities

The teaching is a combination between presentation of practical and theoretical concepts, and exercises and discussions. It is practice-oriented, with 2 mandatory assignments and 2 project which must be completed during the course.

### Notional learning hours

Activity	Units	Contact Time	Structured Time	Self-Directed Time
Lecture		117.0		39.0
Formative feedback		9.0		
Project	2	4.0		14.0
Assignment	2			6.0
Test	7		14.0	21.0
Exam	1		2.0	27.0
		<b>130.0</b>	<b>16.0</b>	<b>104.0</b>

### Syllabus

- ES6 (JavaScript) Concepts
- Primer: Web frameworks and libraries
- React overview
- Templating using JSX
- Working with React components
- Working with React hooks
- Working with React state and props
- Rendering lists in React
- Event handling
- Working with forms
- Frontend routing using React Router
- State management with Redux