

## Module: Web Programming 261

<b>Module name:</b>	Web Programming 261
<b>Code:</b>	WPR261
<b>NQF level:</b>	6
<b>Type:</b>	Fundamental – Diploma in Information Technology (Software Development stream)
<b>Contact time:</b>	72 hours
<b>Structured time</b>	12 hours
<b>Self-directed time</b>	36 hours
<b>Notional hours:</b>	120 hours
<b>Credits:</b>	12
<b>Prerequisites:</b>	WPR161; PRP161

### Purpose

The purpose of the course is to introduce interactive and dynamic web design using a programming language. The course covers language-specific details that need to be implemented in order to achieve the desired results. It will also look at how data should be represented for it to be best transmitted between the client and server.

### Outcomes

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

- Demonstrate detailed knowledge of the main areas of dynamic website programming, including an understanding of and the ability to apply the principles of programming to the area of web development.
- Evaluate, select and apply appropriate website development techniques to create and deploy a dynamic website by analysing and modelling requirements.
- Identify, analyse and solve problems by creating dynamic websites that accommodate specified requirements and constraints, based on analysis or modelling or requirements specification.
- 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 IT and/or non-IT personnel via reports or presentations.

### Assessment

Assessment is performed using a variety of instruments:

- Continuous evaluation of theoretical work through one written assignment, two practical projects, two formative assessments, and a summative test.
- Continuous evaluation of practical work, whereby the student must create and deploy a website.
- Final assessment through a written examination.

## Teaching and Learning

### Learning materials

#### Prescribed books (EBSCO)

- 📖 **Mantyla, D. (2015) Functional Programming in JavaScript. Birmingham, UK: Packt Publishing (Community Experience Distilled).**
- 📖 **Danny Goodman et al. (2010) JavaScript Bible. Hoboken, N.J.: Wiley.**

### Learning activities

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

### Notional learning hours

Contact	Distance	Other	Type of learning activities	% Learning
y	y	n	Lectures (face-to-face, limited interaction or technologically mediated)	40%
y	y	n	Tutorials: individual groups	20%
n	y	n	Syndicate groups	10%
n	y	n	Independent self-study of standard texts and references (study guides, books, journal articles)	10%
n	y	n	Independent self-study of specially prepared materials (case studies, multi-media, etc.)	20%

### Syllabus

- Fundamentals of web programming including the use of variables, decision constructs and looping structures.
- Object representation of data.
- Creating dynamic websites through the application of functional programming in web development.
- Introduction to asynchronous web programming in JavaScript.