Module: Web Programming 161

Module name:	Web Programming 161
Code:	WPR161
NQF level:	5
Type:	Core – Diploma in Information Technology (all stream)
Contact time:	48 hours
Structured time	8 hours
Self-directed time	64 hours
Notional hours:	120 hours
Credits:	12
Prerequisites:	End-User Computing 161

Purpose

The purpose of this course is to enable the student to design and develop web pages and/or websites. The emphasis will be on layout, structure and content presentation. Good design principles will be covered, as well as integration of multimedia elements in web pages. Additionally, the course will cover basic web server concepts and the HTTP paradigm.

Towards the end, the course introduces Content Management Systems. This helps with modular development and deployment of websites. This part builds on HTML and CSS.

Outcomes

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

- An informed understanding of the core area of web development including an informed understanding of its key terms, principles and concepts such as network protocols and web servers.
- The ability to use standard mark-up, styling techniques, visual elements and development tools to create and deploy a website on a web server.
- The ability to successfully create, organise and present content using a content management system, including an overview of administrative functions that include managing permissions and user roles.
- The ability to evaluate and solve a given problem to create a web-based application.
- The ability to gather information from a range of resources, including but not limited to the internet, to select and evaluate information appropriate to represent specific content on a website.
- The ability to communicate information reliably, accurately and coherently, using terms and conventions appropriate to web design and development in a practical demonstration.
- An understanding of and respect for conventions around copyright and plagiarism.

Assessment

Assessment is performed using a variety of instruments:

- Continuous evaluation of theoretical work through a written assignment, a formative test, and a summative test.
- Continuous evaluation of project work.

- Final assessment through a written 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)

  📖 *Frain, B. (2015)* **Responsive Web Design with HTML5 and CSS3 - Second Edition***. Birmingham, UK: Packt Publishing (Community Experience Distilled).*

  📖 *Gustafson, J. M. (2013)* **HTML5 Web Application Development by Example Beginner's Guide : Learn How to Build Rich, Interactive Web Applications From the Ground up Using HTML5, CSS3, and JQuery***. Birmingham: Packt Publishing.*

  📖 *Philippe Hong (2018) Practical Web Design : Learn the Fundamentals of Web Design with HTML5, CSS3, Bootstrap, JQuery, and Vue.js. Birmingham, UK: Packt Publishing.*

Learning activities

Learning will be facilitated by the lecturer with student centred activities that involve problem-based learning where pupils are presented with challenges that replicate the situation in the real-world environment. This will be achieved through a combination between presentation of theoretical concepts, guided exercises, group work and discussions during the module. One mandatory assignment and one project must be completed during the course. The experiences and progress on these practical components form the content of class discussions.

Notional learning hours

Activity	Units	Contact Time	Structured Time	Self-Directed Time
Lecture		40.0		28.0
Formative feedback		5.0		
Project	1	3.0		9.0
Assignment	1			3.0
Test	3		6.0	11.0
Exam	1		2.0	13.0
		48.0	**8.0**	**64.0**

Syllabus

- Web concepts, standards and protocols Web (such as HTML, HTTP, URLs, CSS, XML).
- Fundamental concepts of web servers.
- Overview of web server configuration.
- Core configuration directives.
- HTTP Content negotiation.
- Creating and managing virtual hosts
- Principles of good UI web design.

- Integrated Development Environments.
- Web document structure and content-integration.
- Web-page layouts and formatting using CSS
- Design and implementation of web site(s) with regards to issues of usability and accessibility.
- Website validation.
- Deploying a website.
- Overview of Content Management Systems (CMSs)
- Installing and configuring CMSs.
- Working with themes and plugins
- Using CMSs to manage content
- Administration (Deploying and managing users)