

Unit 10:

Website Design & Development

Unit code	R/615/1633
Unit level	4
Credit value	15

Introduction

Wireless, public hotspots, mobile broadband and unlimited network connections means that accessing and using the internet to request, use and post information has never been so easy, or so important. As public, organisational and business demand increases, so does user expectation. Designers need to successfully use technology to deliver a high quality and consistent User Experiences (UX) through friendly and functional User Interfaces (UI). However, as the software and hardware evolves, so does the challenge of design.

This unit introduces students to the underpinning services required to host, manage and access a secure website before introducing and exploring the methods used by designers and developers to blend back-end technologies (server-side) with front-end technologies (client-side). To help ensure new designers are able to design and deliver a site that offers an outstanding User Experience (UX) supported by an innovative User Interface (UI) this unit also discusses the reasons, requirements, relationships, capabilities and features of the systems they will be using and gives them an opportunity to explore various tools, techniques and technologies with 'good design' principles to plan, design and review a multipage website.

Among the topics included in this unit are: domain structure, domain name systems, web protocols, database servers, development frameworks, website publishing, content management, search engine optimisation, web browsers, HTML standards, CSS and CSS pre-processing (LESS, SASS), presentation models, responsive design, integrated development environments, user requirements, interface design, user experience, branding, navigation, optimisation and validation.

On successful completion of this unit students will be able to explain server technologies and management services associated with the hosting and management of secure websites, categorise website technologies, tools and software used to develop websites, utilise website technologies, tools and techniques with good design principles to create a multipage website and create and use a Test Plan to review the performance and design of a multipage website.

As a result they will develop skills such as communication literacy, critical thinking, analysis, reasoning and interpretation, which are crucial for gaining employment and developing academic competence.

Learning Outcomes

By the end of this unit students will be able to:

- L01 Explain server technologies and management services associated with hosting and managing websites.
- L02 Categorise website technologies, tools and software used to develop websites.
- L03 Utilise website technologies, tools and techniques with good design principles to create a multipage website.
- L04 Create and use a Test Plan to review the performance and design of a multipage website.

Essential Content

LO1 Explain server technologies and management services associated with hosting and managing websites

Hosting and website management:

Investigate relationships between domain names, DNS services and communication protocols used to access a website.

Overview of publishing and managing secure websites, including search engine indexing and ranking.

Different server technologies:

Differences between web server hardware, software and host operating systems.

Advantages of an integrated database system with regards to expanding website capability.

Common web development technologies and frameworks.

LO2 Categorise website technologies, tools and software used to develop websites

Website technologies:

Using front-end technologies, presentation layers and client-side programming to build a User Interface (UI) and effect User Experience (UX).

How back-end technologies, application layers and server-side programming can be used to enable personalisation and deliver dynamic content.

Tools, techniques and software used to develop websites:

Improving User Experience (UX) through Rich Internet Application (RIA) design using JavaScript and CSS frameworks and packages.

Overview of online content management systems including possible advantages and limitations with regards to design.

Using web design and development software to design and build a secure website.

LO3 Utilise website technologies, tools and techniques with good design principles to create a multipage website

Establish the client and user requirements:

Differentiate client and user requirements from behaviours.

Consider how audience and purpose could influence the look and feel of a website.

Review accessibility standards and guidelines and their possible impact on design and aesthetics.

Research and create good content combined with good design principles to create a multipage website:

Introduce and use recognised design principles, incorporating accessibility guidelines to implement an appropriately branded, multipage site.

Discuss why and how the quality of content can affect the performance of a website.

L04 Create and use a Test Plan to review the performance and design of a multipage website

Consider factors that influence website performance:

Review how intuitive interfaces and actions, user-friendly designs, appropriate graphics, effective navigation and good quality content can help establish user trust and deliver an improved User Experience (UX).

Consider the effects of good and bad search engine optimisation (SEO) and indexing on the performance of a website.

W3C Validation (HTML and CSS) and how it influences website design and performance.

Establish a Test Plan and use it to assess the performance of a website:

Assess the impact of poorly optimised website graphics.

Research and conduct Quality Assurance (QA) and usability testing on a multipage website.

Learning Outcomes and Assessment Criteria

Pass	Merit	Distinction
<p>LO1 Explain server technologies and management services associated with hosting and managing websites</p>		<p>LO1 & LO2 D1 Justify the tools and techniques chosen to realise a custom built website.</p>
<p>P1 Identify the purpose and types of DNS, including explanations on how domain names are organised and managed.</p> <p>P2 Explain the purpose and relationships between communication protocols, server hardware, operating systems and web server software with regards to designing, publishing and accessing a website.</p>	<p>M1 Evaluate the impact of common web development technologies and frameworks with regards to website design, functionality and management.</p> <p>M2 Review the influence of search engines on website performance and provide evidence-based support for improving a site's index value and rank through search engine optimisation.</p>	
<p>LO2 Categorise website technologies, tools and software used to develop websites</p>		
<p>P3 Discuss the capabilities and relationships between front-end and back-end website technologies and explain how these relate to presentation and application layers.</p> <p>P4 Discuss the differences between online website creation tools and custom built sites with regards to design flexibility, performance, functionality, User Experience (UX) and User Interface (UI).</p>	<p>M3 Evaluate a range of tools and techniques available to design and develop a custom built website.</p>	

Pass	Merit	Distinction
<p>L03 Utilise website technologies, tools and techniques with good design principles to create a multipage website</p>		
<p>P5 Create a design document for a branded, multipage website supported with medium fidelity wireframes and a full set of client and user requirements.</p> <p>P6 Use your design document with appropriate principles, standards and guidelines to produce a branded, multipage website supported with realistic content.</p>	<p>M4 Compare and contrast the multipage website created to the design document.</p>	<p>D2 Critically evaluate the design and development process against your design document and analyse any technical challenges.</p>
<p>L04 Create and use a Test Plan to review the performance and design of a multipage website</p>		
<p>P7 Create a suitable Test Plan identifying key performance areas and use it to review the functionality and performance of your website.</p>	<p>M5 Evaluate the Quality Assurance (QA) process and review how it was implemented during your design and development stages.</p>	<p>D3 Critically evaluate the results of your Test Plan and include a review of the overall success of your multipage website; use this evaluation to explain any areas of success and provide justified recommendations for areas that require improvement.</p>

Recommended Resources

Textbooks

Frain, B. (2012) *Responsive Web Design with HTML5 and CSS*. UK: Packt Publishing.

Krug, S. (2013) *Don't Make Me Think: A Common Sense Approach to Web Usability*. USA: New Riders.

Lidwell, W., Holden, K. and Butler, J. (2010) *Universal Principles of Design, Revised and Updated: 115 Ways to Enhance Usability, Influence Perception, Increase Appeal, Make Better Design Decisions and Teach Through Design*. USA: Rockport Publishers.

Links

This unit links to the following related units:

Unit 40: User Experience & Interface Design