

Module 10: Software Engineering for Web Applications

Stage	1						
Semester	2						
Module Title	Software Engineering for Web Applications						
Module Number/Reference	5						
Module Status (Mandatory/Elective)	Mandatory						
Module ECTS credit	5						
Module NFQ level (only if applicable)	8						
Pre-requisite Module Titles	None						
Co-requisite Module Titles	None						
Is this a capstone module? (Yes or No)	No						
List of Module Teaching Personnel	Mr Ruairi Murphy Mr Pat Hayes						
Contact Hours				Non-contact Hours			Total Effort (Hours)
Lecture	Practical	Tutorial	Seminar	Assignment	Placement	Independent work	
24	12			30		34	100
Allocation of Marks (Within the Module)							
	Continuous Assessment	Project	Practical	Final Examination	Total		
Percentage contribution	50%	50%			100%		

Intended Module Learning Outcomes

On successful completion of this module learners will be able to:

1. Demonstrate an advanced understanding of how the web works, both on the client and server side.
2. Demonstrate an advanced knowledge of client-side web standards technologies (HTML, CSS)
3. Understand and demonstrate the importance of research and pre-planning in designing and building web applications
4. Design and build dynamic database-driven standards-compliant web sites with HTML, CSS, PHP and MySQL

Module Objectives

This module introduces learners to the fundamental concepts behind building standards-compliant dynamic database driven web applications. They are introduced to the core technologies behind client-side web development (HTML, CSS) before exploring server-side development with PHP and MySQL. Learners design and produce a dynamic, database-driven web application using these methods.

Module Curriculum

Web Architecture

- The Internet
- TCP-IP
- HTTP
- Mark-up Languages
- Server-Client Relationship
- Security

Web Application Development

- Web Standards
- HTML5
- CSS
- Mobile Applications
- Responsive Web Design

UI Design

- Usability
- Interface Design
- User Experience
- User-Centred Design
- Research
- User Analysis
- Wire-framing
- Story-boarding
- Design Principles

Web Application Development

- Web architecture
- Client-Server Relationships
- Three-tier applications
- Web Applications
- GET/POST
- Security

Server-side Programming

- Web scripting (PHP)
- processing form data
- validation
- state management (cookies/sessions)
- Security

Integrating Databases

- Database connectivity
- Security

Reading lists and other learning materials

This module draws heavily on online texts and materials.

Recommended reading

Ullman, L., PHP and MySQL for Dynamic Web Sites 4th Edition, Peach Pit Press, 2012

Secondary reading

Lawson, B., Introducing HTML5 , New Riders, 2011

Saffer, D., Designing for Interaction (2nd Edition), New Riders, 2009

Web Resources

<http://www.webplatform.org/>

<http://www.codecademy.com/>

Module Learning Environment

Accommodation

Lectures are carried out in class rooms / lecture halls in the College. Lab tutorials are carried out in computer labs throughout the Campus. All have the language software required to deliver the programme.

Library

All learners have access to an extensive range of physical and electronic (remotely accessible) library resources. The library monitors and updates its resources on an on-going basis, in line with the College's Library Acquisition Policy. Lecturers update

reading lists for this course on an annual basis as is the norm with all courses run by Griffith College.

Module Teaching and Learning Strategy

The module is delivered through a combination of lectures, tutorials and practical lab sessions. The lectures cover the fundamental concepts behind the web, how it works, client-side and server-side web development. In addition to this, lectures cover various topics related to web design, including research, planning and design.

Tutorials are Lab-based and are used to develop the learners understanding of these ideas and for practical implementation of server-side programming and database applications and projects, completing short and more complex web development assignments.

Module Assessment Strategy

The module assessment consists of a short assignment, a group project and a final examination.

Element No	Weighting	Type	Description	Learning Outcome Assessed
1	50%	Assignment	Learners will develop a series of small web projects, both client-side and a simple database backed server-side application.	1,2,4
2	50%	Project	Learners will plan, design and develop a complex database-backed dynamic web application. Having been given a basic outline and feature list, learners should research and plan their data model and application structure, and develop a specification documentation. Then learners will develop this project to completion.	1,2,3,4