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Title: Advanced Web Development
Status: Definitive
Code: **5214COMP** (127991)
Version Start Date: 01-08-2021

Owning School/Faculty: Computer Science and Mathematics
Teaching School/Faculty: Computer Science and Mathematics

Team	Leader
Andrew Symons	Y

Academic Level: FHEQ5 **Credit Value:** 20 **Total Delivered Hours:** 44
Total Learning Hours: 200 **Private Study:** 156

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	11
Practical	33

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Portfolio	AS1	Development of a Web Application	40	
Portfolio	AS2	Development of a Complex Web Application	60	

Aims

To present the concepts, methods and techniques used in the development and deployment of web applications and services.

To develop the concepts of multi-tier web application development, including: server-side programming, database connectivity and media rich client-side interface

development.

To introduce wider concepts of web applications such as: legal issues, server hardware and system optimization.

Learning Outcomes

After completing the module the student should be able to:

- 1 Explain the architectural make-up of web applications.
- 2 Develop a moderately sized media rich multi-tier web solution from a given set of requirements and data tier solution.
- 3 Iteratively develop a larger user evaluated media rich multi-tier web solution for a given commercially oriented scenario that utilises local and external data sources.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Development of Web Application	1	2
Dev. of Complex Web App.	3	

Outline Syllabus

- Anatomy of a Web Application: Multi-tier Models, Client, Server and Service Internet, Intranet and Extranet Architectures.*
- The Lifecycle of a Web Application: Process, Deployment and Maintenance.*
- The Data Tier: Databases, SQL and Queries.*
- The Processing Tier: Language, Logic, Media Generation and Information.*
- The Client Interface Tier: HTML & CSS, Data Storage and Update, Interface, Media and Interaction.*
- Information System: Users, Roles, Tasks and Information.*
- Security of Web Applications*
- Analysis and Design Methods: Usability and Agile Development Methods.*
- Testing Web Applications: Automated Tools, Stress Testing and User Evaluation*

Learning Activities

Lectures will typically include theoretical and practical components, which will prepare the student for the follow up guided lab session. Practical components will cover: web application development, system configuration and the use of media rich content.

Notes

This module provides the student with the concepts, methods, techniques and experience to analyse, design and develop media rich interactive multi-tier Web-

based applications.