

MODULE DESCRIPTOR

MODULE TITLE	WEB APPLICATION DEVELOPMENT		
MODULE CODE	CO4752 (L7)	CREDIT VALUE	20 UK CREDITS / 10 ECTS
SCHOOL	SCHOOL OF SCIENCES		

MODULE AIMS

This module explores internet-based distributed application development, the related technologies and their use. It develops the knowledge, technical and transferable skills needed by those working in areas related to the Web, new media and the Internet. The module aims are:

1. To explore the theoretical underpinning of different approaches to website application design and development.
2. To develop the skills required to apply design, usability and accessibility principles throughout the entire development cycle of a standards-compliant Web application.
3. To provide an opportunity to investigate, design and develop an application and evaluate the development and the product using appropriate literature.
4. To investigate, analyse and apply literature for current web related technologies and for the problem domain.

MODULE CONTENT

Indicative syllabus content:

The module will cover practical and theoretical aspects of website development, integrating a study of relevant technologies with the development of the skills to apply them in practice.

Web application technology

The operation of the Internet and the World Wide Web:

Multi-tier web application architecture and corresponding infrastructure

HTML5, CSS3, JavaScript and AJAX for front-end development.

Middleware: RESTful web services, JSON/XML for exchanging messages between web application and server

Database implementation (e.g. JDBC/Hibernate with MySQL)

Web application design and development:

Usability and minimisation of errors, accessibility, Universal design

Functional design

Standards and guidelines

Security: authentication, authorisation

Web application platforms and frameworks

Evaluation and testing of Web applications

INTENDED LEARNING OUTCOMES

On successful completion of this module a student will be able to:

1. Critically evaluate web technologies, tools and platforms.
2. Apply relevant tools and techniques to design and develop a Web application, justifying choices made with reference to underpinning theories.
3. Evaluate websites according to the current industry standards of development, usability and accessibility.

TEACHING METHODS

The module aims to develop a critical understanding of the theoretical knowledge and current best practice for the design, development and evaluation of accessible and usable web content and services.

To achieve this, learning will take place through a combination of lectures, practical workshops, face-to-face tutorials and tutor-directed online learning.

Lectures will introduce new material and provide examples and motivation. They will introduce key concepts, direct reading and relate academic aspects to practical considerations.

Tutorials will provide opportunities to review technical information and for students to discuss material and complete paper-based exercises. Classes will be interactive with students expected to participate in ongoing discussions, peer reviews and the monitoring and evaluation of collaborative class work. Emphasis will be placed on practical exercises with students expected to enhance their understanding with reading and research, leading to independent learning.

Practical exercises will guide students into applying the techniques and mastering the material from the lectures. Students are encouraged to critique and evaluate existing Web-sites as well as applying similar criteria to their own work.

Assessment is an individual project. Students will investigate, design and develop a Web application appropriate to a given platform (Web, desktop, mobile devices), from conception to launch, and document and evaluate the process and the software created.

Weekly class work is given out on the basis that for every one spent in class time there should be three hours spent finishing off the work and reinforcing the learning at home. This helps to foster independent learning and research skills.

Students are expected to work on the assessment independently, using contact time for support. Time management is an essential competency employability skill.

ASSESSMENT METHODS

This module is assessed through an examination and a system design coursework.