Module Definition Form (MDF)

Module code: MOD004364	**Version:** 3 **Date Amended:** 06/Dec/2023

1. Module Title
Advanced Web Solutions

2a. Module Leader
Cristina Luca

2b. School
School of Computing and Information Sciences

2c. Faculty
Faculty of Science and Engineering

3a. Level
7

3b. Module Type
Standard (fine graded)

4a. Credits
30

4b. Study Hours
300

5. Restrictions

Type	Module Code	Module Name	Condition
Pre-requisites:	None		
Co-requisites:	None		
Exclusions:	None		
Courses to which this module is restricted:	MSc Computer Science		

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description

Creating Web applications requires different approaches than traditional applications and involves the integration of numerous technologies. This module will enable those who have some experience of software development technologies and HTML to build complex web solutions and advance to dynamic, database-enabled, framework driven website/intranet programming and applications using a scripting language and a database management system. As part of this process you will learn about the Model-View-Controller architectural pattern, object-oriented, event-driven programming, and databases and see how they all work together to deliver exciting applications. You will also learn how client-to-server data flows in a web environment and how to control it through the integration of fundamental security techniques in every step of the development process. Furthermore, you will gain an insight into how to use and apply version control and how to use specialised software to integrate it into your projects. Finally, you will learn about web testing techniques and which tools are best used for debugging different parts of the application. This module aims to provide students with an understanding of the issues, principles, techniques and tools associated with the development of rich Web applications, from design to implementation.

6b. Outline Content

- Client-Server concepts - A Scripting language - Database integration - Server-side database security and access issues - MVC driven Frameworks - Secure coding - Version control - Testing techniques and tools

6c. Key Texts/Literature

The reading list to support this module is available at: https://readinglists.aru.ac.uk/

6d. Specialist Learning Resources

PC laboratory

7. Learning Outcomes (threshold standards)

No.	Type	On successful completion of this module the student will be expected to be able to:
1	Knowledge and Understanding	Demonstrate an understanding of and critically evaluate a range of web technologies
2	Knowledge and Understanding	Select, discuss and critically compare appropriate web application security techniques
3	Intellectual, practical, affective and transferrable skills	Apply web complex technologies in the design and implementation of advanced web applications
4	Intellectual, practical, affective and transferrable skills	Apply web appropriate security principles throughout a web application development process

8a. Module Occurrence to which this MDF Refers				
Year	**Occurrence**	**Period**	**Location**	**Mode of Delivery**
2026/7	ZZF	Template For Face To Face Learning Delivery		Face to Face

8b. Learning Activities for the above Module Occurrence			
Learning Activities	**Hours**	**Learning Outcomes**	**Details of Duration, frequency and other comments**
Lectures	12	1-4	Lecture 1 hr x 12 weeks
Other teacher managed learning	24	1-4	Practical Lab 2 hr x 12 weeks
Student managed learning	264	1-4	Self-study and research
TOTAL:	300		

9. Assessment for the above Module Occurrence

The assessment for some modules includes a presentation (see below for details on how this particular module is assessed). We recognise that presenting, especially to a large group, can cause significant anxiety or distress for some students. If this may affect you, please contact your Module Leader or the Disability and Neurodiversity Service as early as possible. We will work with you to consider appropriate reasonable adjustments. Depending on your individual needs, these might include, for example, presenting to a smaller group or presenting only to a member of academic staff.

Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
010	Coursework	1-4	30 (%)	Fine Grade	40 (%)
In-class test (1 hour)					

Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
011	Coursework	1-4	70 (%)	Fine Grade	40 (%)
Written Assignment (3500 words)					

In order to pass this module, students are required to achieve an overall mark of 40% (for modules at levels 3, 4, 5 and 6) or 50% (for modules at level 7*).

In addition, students are required to:
(a) achieve the qualifying mark for each element of fine graded assessment as specified above
(b) pass any pass/fail elements

[* the pass mark of 50% applies for all module occurrences from the academic year 2024/25 – see Section 3a of this MDF to check the level of the module and Section 8a of this MDF to check the academic year]