



## **Module Specification**

### Web Development and Databases

Version: 2023-24, v4.0, 16 Jan 2023

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## Part 1: Information

**Module title:** Web Development and Databases

**Module code:** UFCFES-30-1

**Level:** Level 4

**For implementation from:** 2023-24

**UWE credit rating:** 30

**ECTS credit rating:** 15

**Faculty:** Faculty of Environment & Technology

**Department:** FET Dept of Computer Sci & Creative Tech

**Partner institutions:** None

**Delivery locations:** Not in use for Modules

**Field:** Computer Science and Creative Technologies

**Module type:** Module

**Pre-requisites:** None

**Excluded combinations:** None

**Co-requisites:** None

**Continuing professional development:** No

**Professional, statutory or regulatory body requirements:** None

## Part 2: Description

**Overview:** This module introduces principles of web development as well as a web development framework and web technologies. Students will be guided through the Software Development Lifecycle (SDLC) process with emphasis on Legal, Ethical, Social and Professional (LESP) issues in web development.

This will be done by first introducing the World Wide Web (WWW) concepts.

Students will be taught various web development technologies including client-side and server-side scripting languages, that will start their journey towards full-stack web development and provide the basis to write static and dynamic web pages.

Students will also be introduced to responsive web design and taught principles and techniques of mobile and desktop web applications by applying media queries and breakpoints.

Another key area of the module will be the basics of database technologies. Students will learn how to model entities, design a basic database schema and write queries for data storage and data manipulation for a dynamic web application. They will cover basics of SQL and No-SQL concepts.

Security on the web is of prime importance and students on this module will be taught various web security concepts and how they can develop a secure web application e.g., hosting secure web server, avoiding SQL injections, session management, etc.

Finally, students will be introduced to web development frameworks and future trends. They will learn how to analyse and evaluate their web application. They will also cover legal (e.g. copyright, licensing), ethical (e.g., sustainable development), social (e.g., accessibility guidelines) and professional (e.g., standards) issues for web development. It is intended both for beginners with no prior programming experience as well as those who have some experience but would like to learn web development.

**Features:** Not applicable

**Educational aims:** This module aims to develop the students' understanding of designing and developing web applications and managing data through databases.

**Outline syllabus:** Software Development Life Cycle (SDLC)

Legal, Ethical, Social and Professional (LESP) issues in web development

Web development technologies

Responsive web Design

Mobile and Desktop Web Applications

Data Schema, Data Storage and Data Manipulation in Dynamic Web-Application Design

Web Security and Secure Web Application Development

Web Application Evaluation

Future trends in Web Development

### **Part 3: Teaching and learning methods**

**Teaching and learning methods:** The module will be delivered via a combination of lectorials, workshops and lab sessions, with face-to-face and online help provided by tutors. Online resources such as UWE e-library and LinkedIn learning will also be made available to students.

Lectures will focus on providing basic concepts and introduction to lab sessions and independent learning. Lab sessions will focus on allowing the students to apply the concepts learned in the lectures to various problems and contexts. Students will have an opportunity to engage with the tutors in problem solving.

Students will also be expected to undertake independent learning in the form of design and development work focused on a Website project. Students will be expected to self-manage their work and monitor progress.

**Module Learning outcomes:** On successful completion of this module students will achieve the following learning outcomes.

**MO1** Demonstrate the ability to select and use web development techniques and concepts to develop dynamic and responsive websites

**MO2** Design and develop static web sites to solve simple problems

**MO3** Identify and assess web security issues in a website

**MO4** Demonstrate a basic understanding of legal, ethical, social and professional requirements when designing a web application

**MO5** Design and develop data management solutions for a web application

**Hours to be allocated:** 300

**Contact hours:**

Independent study/self-guided study = 228 hours

Face-to-face learning = 72 hours

Total = 300

**Reading list:** The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/ufcfes-30-1.html) via the following link <https://uwe.rl.talis.com/modules/ufcfes-30-1.html>

## Part 4: Assessment

**Assessment strategy:** The assessment is designed to ensure that students' understanding and skills are developed incrementally and the assessment strategy provides continual formative feedback opportunities and allows students to develop their skills with the materials being presented in the lectures and laboratory sessions. There is only one assessment for this module.

In the assessment, outputs are from a design and development tasks of a Website project. Each student will work on the project individually and there will be opportunities to integrate their work with other students. Individual assessment and feedback will be provided within the assessment strategy. Each student will submit website code, a presentation video, and a brief report covering testing, legal, ethical, social and professional aspects of the website. Written feedback will be provided as part of the summative assessment.

For resit, students will have to design and develop a website on a related problem domain and it will be covering the same technologies and LOs tested in the main sit.

### Assessment components:

#### Project (First Sit)

Description: Design and Development of a Website.

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5

**Project (Resit)**

Description: Design and Development of a Website.

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5

**Part 5: Contributes towards**

This module contributes towards the following programmes of study:

Computer Science [Phenikaa] BSc (Hons) 2023-24

Computer Science (Artificial Intelligence) [NepalBrit] BSc (Hons) 2023-24

Computer Science [Frenchay] BSc (Hons) 2023-24

Computer Science [Villa] BSc (Hons) 2023-24

Computing {Foundation} [Sep][SW][Frenchay][5yrs] - Not Running BSc (Hons) 2022-23

Computing {Foundation} [Sep][FT][Frenchay][4yrs] - Not Running BSc (Hons) 2022-23

Computer Science {Foundation} [Frenchay] BSc (Hons) 2022-23

Computer Science {Foundation} [GCET] BSc (Hons) 2022-23

Computer Science (Smart Devices) {Foundation} [GCET] BSc (Hons) 2022-23

Computer Science (Artificial Intelligence) {Foundation} [GCET] BSc (Hons) 2022-23