STUDENT AND ACADEMIC SERVICES

UWE | University
Bristol | of the
West of
England

MODULE SPECIFICATION

Part 1: Information			
Module Title	Web Development and Databases		
Module Code	UFCFES-30-1	Level	Level 4
For implementation from	2020-21		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	Faculty of Environment & Technology	Field	Computer Science and Creative Technologies
Department	FET Dept of Computer Sci & Creative Tech		
Module Type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co-requisites	None		
Module Entry Requirements	None		
PSRB 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 are 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.

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

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 group work focused on a team-based project. Students will be expected to self-manage the teams, allocate work and monitor progress.

Part 3: Assessment

The assessment components are designed to ensure that students' understanding and skills are developed incrementally and the assessment strategy provides continual feedback opportunities and allows students to develop their skills with the materials being presented in the lectures and laboratory sessions. The group-based working also provides numerous peer-learning opportunities.

In Component A, outputs are from group tasks. There will be a group mark and a mark for an individual's contribution to group dynamics. Marks adjustment may take place where there is an evidence of significant unbalanced contributions from the group members. Individual assessment and feedback is also provided within the assessment strategy. Each group will submit website code, video of their PowerPoint slides presentation and a brief report covering testing, legal, ethical, social and professional aspects of the website. Also, each group will be expected to demo their finished website to their peers and tutors in a controlled-conditions environment illustrating both group and individual programming skills.

In Component B, programming aspects are assessed. This is done as a series of in-class test of programming worksheets in a phased manner. This phased approach will help students and tutors to evaluate students' understanding of web concepts and technologies after each phase. These worksheet assessments will be during practical sessions and must be signed off in the presence of the student and the tutor. These worksheet assessments will allow students to prepare for group presentation and demo. Students will be given verbal formative feedback during practical sessions and summative feedback will be provided based on group work assessment.

If any worksheet is presented at a Practical subsequent to that designated, the tutor may at their discretion allow a proportion of the maximum mark. This would normally be up to 50% of the maximum for the worksheet i.e., 5% of the total mark.

For resit, students will have to develop a small website covering different technologies tested in the main sit Component B.

For Component A resit, there will be 2 hour exam where students' knowledge and practical understanding of technologies tested in the main sit Component A. It will also test students' understanding of the impact of working individually or in a group on the overall development process.

First Sit Components	Final Assessment	Element weighting	Description
Group work - Component A	✓	60 %	Design and Development of a Website. The work will be presented by the group via a video or an in class demonstration.
In-class test - Component B		40 %	Programming in-class test worksheets will be issued to students in a phased manner. Must be completed during practical sessions individually and will be signed off by the class tutor.
Resit Components	Final Assessment	Element weighting	Description
Examination (Online) - Component A		60 %	2 hour written exam
Online Assignment - Component B		40 %	Small website

Part 4: Teaching and Learning Methods	
Learning Outcomes	On successful completion of this module students will achieve the following learning outcomes: <table><tr><th>Module Learning Outcomes</th><th>Reference</th></tr><tr><td>Demonstrate the ability to select and use web development techniques and concepts to develop dynamic and responsive websites (Assessed in components A and B).</td><td>MO1</td></tr><tr><td>Design and develop small web sites to solve simple problems (Assessed in component B)</td><td>MO2</td></tr><tr><td>Identify and assess web security issues in a website (assessed in component A).</td><td>MO3</td></tr><tr><td>Demonstrate a basic understanding of legal, ethical, social and professional requirements when designing a web application (assessed in component A).</td><td>MO4</td></tr><tr><td>Design and develop data management solutions for a web application (assessed in components A and B).</td><td>MO5</td></tr></table>
Contact Hours	**Independent Study Hours:** <table><tr><td>Independent study/self-guided study</td><td>228</td></tr><tr><td>**Total Independent Study Hours:**</td><td>228</td></tr></table>

	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	72
	Total Scheduled Learning and Teaching Hours:	72
	Hours to be allocated	300
	Allocated Hours	300
Reading List	*The reading list for this module can be accessed via the following link:* https://rl.talis.com/3/uwe/lists/E2F9E165-8DAE-9FC7-413D-5EEFB7C326D2.html	

Part 5: Contributes Towards
This module contributes towards the following programmes of study: Computer Science [Sep][SW][Frenchay][4yrs] BSc (Hons) 2020-21 Computer Science [Sep][FT][Frenchay][3yrs] BSc (Hons) 2020-21 Computing {Dual} [Aug][SW][Taylors][4yrs] BSc (Hons) 2020-21 Computing [Sep][FT][Frenchay][3yrs] BSc (Hons) 2020-21 Computing [Sep][SW][Frenchay][4yrs] BSc (Hons) 2020-21 Computing {Dual} [Aug][FT][Taylors][3yrs] BSc (Hons) 2020-21 Computing {Dual} [Mar][FT][Taylors][3yrs] BSc (Hons) 2020-21 Computing {Dual} [Mar][SW][Taylors][4yrs] BSc (Hons) 2020-21