Module Descriptor

Title	Internet Technologies		
Session	2025/26	**Status**	Published
Code	COMP10020	**SCQF Level**	10
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	Derek Turner		

Summary of Module

Honours graduates should be familiar with a range of technologies from frameworks to cloud services and be able to choose an appropriate technical approach for a given scenario.

This module will provide an opportunity for students to specify construct and deploy a web app using a popular technology stack and also to review and experiment with competing technologies.

Before taking this module, students should have a working knowledge of the internet, an ability to develop web pages, and a familiarity with client and server scripting, databases, and some programming experience. That prior knowledge will be used in the module to provide a basis on which to build an understanding of the technologies presented and explored in the module.

Code examples and notes will be provided via GitHub pages and code will be available to download. Class discussions and presentations will present the background to support the coded materials. The module materials will enable students to pass the module. To get the highest classifications, students will need to go beyond this material, using links and resources provided as a starting point.

In 2025 the technology stack presented will include React 19, MongoDB, React Router and Node. Code will be developed using Docker development environments. Students are encouraged to use Docker linked to GitHub, but this is not a requirement of the assessment. Awareness of alternative frameworks built on React such as Next.JS and RedwoodJS will be encouraged.

• Internet Technologies evolve all the time, and Honours graduates should ensure their skills are up to date. Students on this module will become familiar with both client and server code for a web application.

• Students will consider the use of frameworks to facilitate the adaptation of web applications towards native mobile applications.

• In employment Honours graduates are expected to be able to contribute usefully to a discussion about designing a solution and be able to implement some parts of the solution. So, students will be expected to contribute to the knowledge base of the module through their own research.

• This module embeds the key "I am UWS" graduate attributes and in particular: Universal (Analytical, collaborative, research-minded), Work Ready (digitally literate, effective communicator) and Successful (creative)

Module Delivery Method	**On-Campus**[1] ☒	**Hybrid**[2] ☐	**Online**[3] ☐	**Work -Based Learning**[4] ☐
Campuses for Module Delivery	☐ Ayr ☐ Dumfries	☐ Lanarkshire ☐ London ☒ Paisley	☐ Online / Distance Learning ☐ Other (specify)	

Terms for Module Delivery	Term 1	☒	Term 2	☐	Term 3	☐
Long-thin Delivery over more than one Term	Term 1 – Term 2	☐	Term 2 – Term 3	☐	Term 3 – Term 1	☐

Learning Outcomes	
L1	Understand and work with a range of current internet technologies to specify, create and deploy web apps using appropriate services.
L2	Demonstrate independent learning around advanced topics related to internet technologies.
L3	Present and report upon group investigations of internet technologies.
L4	N/A
L5	N/A

Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	**During completion of this module, there will be an opportunity to achieve core skills in:**

[1] Where contact hours are synchronous/ live and take place fully on campus. Campus-based learning is focused on providing an interactive learning experience supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus contact hours will be clearly articulated to students.

[2] The module includes a combination of synchronous/ live on-campus and online learning events. These will be supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus and online contact hours will be clearly articulated to students.

[3] Where all learning is solely delivered by web-based or internet-based technologies and the participants can engage in all learning activities through these means. All required contact hours will be clearly articulated to students.

[4] Learning activities where the main location for the learning experience is in the workplace. All required contact hours, whether online or on campus, will be clearly articulated to students

Knowledge and Understanding (K and U)	**SCQF 10** the process of developing internet standards and other enabling infrastructure, the nature of toolkits and specifications, and the ability to use, analyse and critically compare different technical approaches; the trade-offs involved in developing technologies (or components that embody them); the conventions and approaches that are currently regarded as standard.
Practice: Applied Knowledge and Understanding	**SCQF 10** a range of (about 10) contemporary tools and technologies from competing platforms, in enough detail to see how they could be applied in a realistic scenario (achieved in practical sessions and personal research)
Generic Cognitive skills	**SCQF 10** critically identify, define, conceptualise and analyse application of internet technologies in specific problem situations; offer professional insights and judgments as to cost-effectiveness, practicality and safety; demonstrate some originality and creativity in dealing with a realistic scenario
Communication, ICT and Numeracy Skills	**SCQF 10** critically identify, define, conceptualise and analyse application of internet technologies in specific problem situations; offer professional insights and judgments as to cost-effectiveness, practicality and safety; summarise the result of research
Autonomy, Accountability and Working with Others	**SCQF 10** work in small groups to achieve the above objectives

Prerequisites	**Module Code** COMP09006 COMP09023	**Module Title** Web Site Development Web Server Technology
	Other	
Co-requisites	**Module Code**	**Module Title**

Learning and Teaching	
In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours. The module will be presented using live face to face laboratory sessions with online notes and code resources. Students will be expected to progress from guided exercises on to their own projects. Students will also be required to conduct independent investigations of internet technologies and present their findings during timetabled classes	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Note: Learning hours include both contact hours and hours spent on other learning activities)

Lecture / Core Content Delivery	12
Tutorial / Synchronous Support Activity	12
Laboratory / Practical Demonstration / Workshop	24
Independent Study	152
Please select	
Please select	
TOTAL	200

Indicative Resources

The following materials form essential underpinning for the module content and ultimately for the learning outcomes:

Development environment comprising:

Windows subsystem for Linux.

Docker desktop (for containerised development environment featuring Vite development server, Nodejs and typescript)

GitHub desktop as a convenient interface between local PC and cloud repository.

Visual Studio Code as a code editor (IDE)

Visual Studio Code extensions:

- Prettier as a code formatter
- Remote development which incorporates:

o WSL

o Dev Containers: allowing local code to be run and edited in a container

o Remote SSH

o Remote Tunnels

- Live server for website development

GIT to facilitate VSC connection to code repository.

Internet resources as indicated on the VLE including:

react.dev. (n.d.). React v19 Reference. [online] Available at: https://react.dev/reference/react.

Remix. (n.d.). Remix Docs Home. [online] Available at: https://reactrouter.com/home

Reference to books may also be useful including:

Choi, D (2025). Full-Stack React, TypeScript, and Node: Build scalable and cloud-ready web applications using React 19, TypeScript, and Docker. Packt Publishing.

(N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Attendance and Engagement Requirements

In line with the Student Attendance and Engagement Procedure, Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time.

For the purposes of this module, academic engagement equates to the following:

The School of Computing, Engineering and Physical Sciences considers attendance and engagement to mean a commitment to attending, and engaging in, timetabled sessions. You will scan your attendance via the scanners each time you are on-campus and you will login to the VLE several times per week. Where you are unable to attend a timetabled learning session due to illness or other circumstance, you should notify the Programme Leader that you cannot attend. Across the School an 80% attendance threshold is set. If you fall below this, you will be referred to the Student Success Team to see how we can best support your studies.

Equality and Diversity
The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code. Aligned with the University's commitment to equality and diversity, this module supports equality of opportunity for students from all backgrounds and learning needs. Using the VLE, material will be presented electronically in formats that allow flexible access and manipulation of content. This module complies with University regulations and guidance on inclusive learning and teaching practice. This module has lab-based teaching and as such you are advised to speak to the Module Co-ordinator to ensure that specialist assistive equipment, support provision and adjustment to assessment practice can be put in place, in accordance with the University's policies and regulations.
(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	**Computing**
Overall Assessment Results	☐ **Pass / Fail** ☒ **Graded**
Module Eligible for Compensation	☐ **Yes** ☒ **No** **If this module is eligible for compensation, there may be cases where compensation is not permitted due to programme accreditation requirements. Please check the associated programme specification for details.**
School Assessment Board	Business & Applied Computing
Moderator	Pablo Salva Garcia
External Examiner	A Jindal
Accreditation Details	This module is accredited by BCS as part of a number of specified programmes.
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	1.01

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1

Coursework assignment contributing 50%

Working in small groups student will research an aspect of internet technologies which is not covered in the main presentation of a module in the current year of their programme. Students will be expected to provide simple examples which demonstrate interaction with the technology, show how the technology relates to other elements, describe a scenario where its use would be appropriate and give a critical assessment of its relative merits. Students may select from a list of suggested technologies which might include frameworks and cloud services or they may put forward their own suggestions for approval. The group will make a live presentation to the class and support this with a GitHub page featuring presentation notes and a tutorial.

Assessment 2

Coursework assignment contributing 50%

The coursework assignment is normally done as pairs (but students may opt to work individually) and involves specification and design of a web application to meet a scenario brief. The specification document will be supported by a proof-of-concept site based on a suitable technology stack. The assignment is set in week 2 and must be completed by week 14. Students are expected to present their site and documentation as work in progress to staff prior to submission.

Assessment 3

(N.B. (i) Assessment Outcomes Grids for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed.

(ii) An indicative schedule listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Component 1

Assessment Type	LO1	LO2	LO3	LO4	LO5	Weighting of Assessment Element (%)	Timetabled Contact Hours
	☐	☒	☒	☐	☐	50	0.5

Component 2

Assessment Type	LO1	LO2	LO3	LO4	LO5	Weighting of Assessment Element (%)	Timetabled Contact Hours
	☒	☒	☐	☐	☐	50	0.5

Component 3

Assessment Type	LO1	LO2	LO3	LO4	LO5	Weighting of Assessment Element (%)	Timetabled Contact Hours
	☐	☐	☐	☐	☐		
Combined total for all components						100%	1 hours

Change Control

What	When	Who
Attendance and Engagement Procedure and Equality and Diversity	20/1/2025	F.Valentine