Module Title	**Web Technologies**
Level	5
Reference No.	CSI_5_WET
Credit Value	20
Student Study Hours	Total: 200 Contact hours: 52 Student managed learning hours: 148
Pre-requisites	None
Co-requisites	None
Excluded combinations	None
Module co-ordinator	TBC
Faculty/Department	Division of Computer Science and Informatics
Short Description	In this module you will learn about the technologies used to build web applications. You will learn how dynamic client interfaces to applications held on remote servers are built and how dynamic processes on servers use databases and other files to both provide and interact with those client interfaces. As well as experimenting with the fundamental mechanisms involved you will explore how these are used in a range of complex real world business applications.
Aims	This module aims to achieve a clear understanding of how distributed applications are built and how the various components that they consist of interact. This represents the fundamental architecture underlying virtually all web applications, mobile apps, and their ultimate synthesis in the cloud computing paradigm. In addition, the module aims to provide understanding of how these essential building blocks can be combined into powerful and complex applications.
Learning Outcomes	**LO1: Knowledge and Understanding** ● Choose appropriate tools and techniques to build web applications that comply with the web standards and be aware of the constraints that the web puts on developers **LO2: Intellectual Skills** ● Compare and contrast web programming with general purpose programming ● Discuss work with your lecturers in a reflective and rationale manner ● Analyse and synthesise information from a number of sources to aid rational decision making. (Maps to: BCS 2.2.1 a1-a5, a7-a9;) **LO3: Practical Skills** ● Design and implement simple web applications. (Maps to: BCS 2.2.1 b1-b4;) **LO4: Transferable Skills** ● Write formal reports that critically evaluate the appropriateness of available tools and techniques; Work effectively in teams. (Maps to: BCS 2.2.1 c1-c2;)
Employability	A good understanding of how web applications operate is important for any role involved in developing such systems, whether at a technical level or when specifying requirements to developers. Effective assessment of existing software solutions and services in terms of suitability for a specific business need is a valuable skill which employers may require in many circumstances and is made possible only by understanding what such systems are and how they work.
Teaching and learning pattern	There will be weekly lectures to introduce new concepts and lab sessions to support these with hands-on experience. Practical exercises in the lab sessions will involve exploring the various technologies in use to build working models of the applications discussed in the lectures.
Indicative content	● The client/server paradigm.

	● Example web applications and their characteristics. ● Compare and contrast web programming with general purpose programming ● Discuss how web standards impact software development ● Technologies used to build web clients with HTML, CSS and Javascript. ● How Javascript can modify the Document Object Model and directly interact with the server application. ● Server application software such as PHP and MySQL. ● Looking into examples of complex systems these technologies are able to create such as CMS, Web Email and Cloud Computing systems.
Assessment *Elements & weightings*	**Coursework 100%** **Summative Assessment** Coursework: Expected to consist of a combination of individual assignment, team coursework and an in-class test (LO1-LO4) (Maps to: BCS 2.2.1 a1-a5, a7-a9; b1-b4; c1-c2;) **Formative Assessment** Skills for the summative assessment will be embedded throughout formative opportunities in Lectures and Workshops. Formative assessment will take different forms, such as: ● interactive revision quizzes ● verbal feedback on tutorial activities ● observation and questioning to provide instant feedback as the student takes part in learning activities
Indicative Sources *(Reading lists)*	**Core:** ● Nixon, Robin (2018) *Learning PHP, MySQL, JavaScript, and CSS 2nd ed.* Sebastopol, CA: O'Reilly. ● Powers, David (2010) *PHP solutions: dynamic Web design made easy*. New York: Friends of ED. In addition to textbooks, students will be expected to refer to web-based information sources as required.