

# University of the West of Scotland

## Postgraduate Programme Specification

Session: 2021/22

Last modified: 21/03/2020 13:06:24

<b>Named Award Title:</b>	MSc Mobile Web Development
---------------------------	----------------------------

<b>Award Title for Each Award:</b>	MSc Mobile Web Development PG Cert Web Development PG Dip Mobile Web Development
------------------------------------	--

<b>Awarding Institution/Body:</b>	University of the West of Scotland
<b>Language of Instruction &amp; Examination:</b>	English
<b>Award Accredited By:</b>	British Computer Society
<b>Maximum Period of Registration:</b>	3 years full-time, up to 4 years part-time
<b>Mode of Study:</b>	Full Time Part Time
<b>Campus:</b>	Paisley

<b>School:</b>	School of Computing, Engineering and Physical Sciences
<b>Programme Leader:</b>	Graeme McRobbie

### Admission Criteria

Candidates must be able to satisfy the general admission requirements of the University of the West of Scotland as specified in Chapter 2 of the University Regulatory Framework together with the following programme requirements:

#### Appropriate Undergraduate Qualification

A second-class Honours degree, or equivalent, in one of the following disciplines: Science; Engineering; Computing; or Technology

#### Other Required Qualifications/Experience

A qualification from an overseas institution that is deemed equivalent by the NARIC system of the British Council or a professional qualification recognised as being equivalent to an Honours Degree.

Applicants may also be considered with other academic, vocational or professional qualifications deemed to be equivalent subject to interview.

#### Further desirable skills pre-application

The course is primarily aimed at Honours graduates with a degree in a science, engineering or technology discipline and some experience of using computer applications to solve problems in that discipline.

Previous experience of programming is desirable but not essential. Students will be expected to recognise that they are embarking on a technology course that will require them to become proficient with a range of technical topics and programming skills in a relatively short time.

### General Overview

The MSc Mobile Web Development is a technical programme covering web and mobile development. The course intends to recruit mainly Honours degree qualified students with degrees in a science, engineering or

technology discipline but who have not covered mobile/web development in any great depth.

Graduates of the course should be well equipped to undertake employment in the field where there are current employment opportunities. It is recognised that the skillset developed is currently in demand (Scotland IS reporting in 2011 Software and Web Development as an in demand skillset).

The increasing use of mobile devices being coupled with cloud computing to provide applications and services to users and enterprises has contributed to the architecture of contemporary corporate computing undergoing substantial change. The design and development skills required in this emerging shift in technologies are significantly different from those required for applications targeted at desktop platforms and offers both new capabilities and new challenges to the application developer. The MSc Mobile Web Development is intended to develop these skills and produce graduates who are in a position to target employment opportunities in software development for the mobile web. There is considerable expertise within the School of Computing both on technical issues and how these are used in industry. This is evidenced by a high level of knowledge transfer activity. There are recent many knowledge transfer projects dealing with a range of small and large organisations. Relevant activity through the Scottish Centre for Enabling Technologies (SCET) which has completed over 100 projects supporting Scottish SMEs adopt new technologies.

Students will be expected to recognise that they are embarking on a technical course that will require them to quickly become proficient with technical topics. It is expected that course graduates will be able to seek employment as mobile and web application developers. Posts relating to development are top of the [itjobswatch.co.uk](http://itjobswatch.co.uk) jobs list.

By providing an up to date curriculum, underpinned by knowledge of industry needs the proposed course maximises recruitment possibilities.

The programme would develop its content as technologies evolve and change which is the nature of specialist computing programmes.

Students with an MSc Mobile Web Development will be equipped to undertake a PhD by research in the subject area.

The teaching, learning and assessment strategy is designed to help students master the learning outcomes and also to allow them to demonstrate their highest level of competency in the topics covered. Many of the learning outcomes of the programme are practical in nature and a large proportion of class time is spent in computing laboratories engaging with the appropriate tools (software, hardware etc) acquiring practical knowledge and understanding through a variety of activities. The theoretical knowledge and understanding underpinning the subject is mainly engendered through lectures, tutorials, seminars and by individual study. In turn the practical classes reinforce the underpinning knowledge. Active learning is promoted through a number of practical assignments. A number of classes and assignments will involve problem solving through analysis, evaluation and the synthesis of a solution reflecting the practical emphasis of the course. Emphasis is placed on professional practice skills. Knowledge and understanding is assessed through class tests and also by the structure it gives to practical work assignments and by reflective practice exercises. The applied knowledge and understanding will be obtained largely through practical work both individually and in groups. Students are expected to undertake independent study both to supplement and consolidate what is being taught in formal classes. Learning is supported by use of the Moodle Virtual Learning Environment. As well as allowing staff to provide resources online for students such as lecture notes and online quizzes Moodle is used extensively to communicate with students via email and notice board. This enables effective provision of feedback for both formative and summative assessment purposes. Staff also use Moodle to allow students to electronically submit assignments, thus allowing both staff and students to make use of software tools such as Turnitin to check for plagiarism. In each module scheduled labs and exercises enable students to monitor their own progress. A large part of the programme is devoted to the acquisition of transferable and key skills. These are developed throughout the programme. Skills in areas such as communication, ICT, time management, and team and independent working being particularly relevant. Practical work is a mix of individual and group work that develops the ability to work independently and as part of a group taking on different roles as required.

### Graduate Attributes, Employability & Personal Development Planning

Graduates of the programme will be **Universal**, **Work-ready** and **Successful** across the three dimensions, academic, personal and professional which encapsulate the breadth of the learning experience at University level. The programme aims to develop the student's intellectual and imaginative capabilities, professional understanding and judgement, problem-solving and communications skills, and ability to work as an effective team member. The programme offers a thorough grounding in the principles of computer operation, including

programming, and associated software engineering approaches and develops the lifelong learning skills that students will need to stay abreast of the rapidly evolving technologies in computing and its related disciplines.

Students graduating from the programme will be building on their employability skills gained during an Honours degree or equivalent. The focus of the programme is very much on students developing skills specific to a sector of employment.

Employability skills will be built into the programme at a variety of times in many different ways. Generic skills that are transferable to many fields of employment are embedded throughout the programme and are listed in some detail in the module descriptors. At the end of the programme graduates will have produced a portfolio of work which will contribute to their personal development planning.

The Employability Link provides a resource for students which will play an important part in our employability planning. It provides integrated service to students and staff and employers to encourage links between them. Services include advice and support on career planning, graduate recruitment, placement, part time work, summer jobs and volunteering.

### Work Based Learning/Placement Details

No work-based learning or placements are planned for the first year of operation of the programme.

### Engagement and Attendance

In line with the Academic Engagement and Attendance Procedure, Students are defined as academically engaged if they are regularly engaged with timetabled teaching sessions, course-related learning resources including those in the Library and on Moodle, and complete assessments and submit these on time.

### Equality and Diversity

The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: [UWS Equality and Diversity Policy](#)

## Programme structures and requirements, SCQF level, term, module name and code, credits and awards ( **Chapter 1, Regulatory Framework** )

### A. PG Cert

#### Learning Outcomes (Maximum of 5 per heading)

<b>Knowledge and Understanding</b>	
<b>A1</b>	Demonstrate and work with an extensive, detailed and critical knowledge and understanding in specialisms that are at the forefront of web technologies and of current and emerging developments in the field
<b>A2</b>	Demonstrate and work with knowledge and understanding of usability issues for web applications
<b>Practice - Applied Knowledge and Understanding</b>	
<b>B1</b>	Be able to compare and evaluate different strategies for delivering web content and to judiciously select an appropriate solution
<b>B2</b>	Produce supporting documentation, following relevant guidelines, to fulfil a given brief for delivering web content
<b>B3</b>	Retrieving, interpreting and manipulating primary and secondary information from a variety of sources including electronic sources to explain professional, legal and ethical concepts
<b>Communication, ICT and Numeracy Skills</b>	
<b>C1</b>	Communicating effectively and appropriately in both speech and writing

<b>C2</b>	Produce design documents to specify a mobile or web application within a given brief
<b>C3</b>	Making effective use of information retrieval systems and use of information technology applications to both research and present information in an appropriate form
<b>Generic Cognitive Skills - Problem Solving, Analysis, Evaluation</b>	
<b>D1</b>	Research and apply appropriate guidelines to the development of a mobile or web application
<b>D2</b>	Demonstrate an ability to critically select and apply appropriate research and/or development techniques in producing a solution or solutions to a practical problem in the mobile or web development area
<b>Autonomy, Accountability and Working With Others</b>	
<b>E1</b>	Identifying and addressing personal learning needs
<b>E2</b>	Work effectively in a tutorial team, taking a leadership role where appropriate
<b>E3</b>	Exercise initiative, self-management and professionalism in the completion of the module coursework

### Core Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
11	COMP11062	Mobile Networks and Smartphone Applications	20				
11	COMP11008	Web Development	20				

\* Indicates that module descriptor is not published.

Footnotes

### Optional Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
11	COMP11015	Interactive Design for Smart Devices	10				
11	COMP11051	Mobile Business Technology and Design	20				
11	COMP11005	Dynamic Web Applications	20				
11	COMP11001	Ethics for the IT Professional	10				
11	COMP11015	Interactive Design for Smart Devices	10				
11	COMP11057	Security for the Mobile Web	10				

\* Indicates that module descriptor is not published.

Footnotes

20 credits from above

### Criteria for Progression and Award

The criteria for the award of Postgraduate Certificate is defined in the University Regulatory Framework: 60 credit points of which a minimum of 40 are at SCQF 11 and none less than SCQF level 10.

A Postgraduate Certificate in Web Development will be awarded to a student who gain 60 credits from the above SCQF Level 11 modules - including all the core modules - and who decides not to continue with the programme.

### B. PG Dip

#### Learning Outcomes (Maximum of 5 per heading)

<b>Knowledge and Understanding</b>	
<b>A1</b>	Demonstrate and employ knowledge that covers and integrates mobile and web deployment issues



11	COMP11008	Web Development	20				
11	COMP11015	Interactive Design for Smart Devices	10				
11	COMP11062	Mobile Networks and Smartphone Applications	20				
11	COMP11005	Dynamic Web Applications	20				
11	COMP11017	Research Design and Methods	10				
11	COMP11051	Mobile Business Technology and Design	20				
11	COMP11057	Security for the Mobile Web	10				

\* Indicates that module descriptor is not published.

#### Footnotes

A part time route is facilitated by a student taking the taught modules in the following order over a period of two years:

1st Term: Web Development and Computing for the Mobile Web

2nd Term: Dynamic Web Applications and Security for the Mobile Web

3rd Term: Interactive Design for Smart Devices, Object Oriented Analysis & Design and Ethics for the IT Professional

4th Term: Mobile Development and Research Methods (Comp)

#### Optional Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	

\* Indicates that module descriptor is not published.

#### Footnotes

#### Criteria for Progression and Award

The criteria for the award of Postgraduate Diploma is defined in the University Regulatory Framework: 120 credit points of which a minimum of 90 are at SCQF 11 and none less than SCQF level 10.

A Postgraduate Diploma in Mobile Web Development will be awarded to a student who gains 120 credits points by passing the ALL of the above SCQF Level 11 modules and who decides not to continue with the programme.

Distinctions will be achieved by obtaining a mean mark of 70% or above at first attempt over all of the above modules.

#### C. Masters

##### Learning Outcomes (Maximum of 5 per heading)

<b>Knowledge and Understanding</b>	
<b>A1</b>	Demonstrate and utilise knowledge that covers and integrates aspects of mobile and web development
<b>A2</b>	Demonstrate a critical understanding of the principal methods, underlying principles and concepts of mobile and web development
<b>A3</b>	Demonstrate detailed knowledge and a critical understanding of at least one specialist area which is informed by the forefront of the subject area
<b>A4</b>	Demonstrate a critical awareness of current and developing issues in a specialist area of web and mobile development
<b>A5</b>	Demonstrate knowledge and deep understanding of research methods and approaches in the context of web and mobile development, relevant to the programme of Masters level research
<b>Practice - Applied Knowledge and Understanding</b>	
<b>B1</b>	Produce an MSc project specification
<b>B2</b>	Demonstrate an ability to select and apply in a critical and reflective fashion, appropriate research and/or development techniques in producing a solution or solutions to a practical problem in a specialist area of mobile and web development

<b>B3</b>	Critically and reflectively plan and execute a mobile and web development related project to develop an artefact that is fit for purpose in addressing a stated problem according to a specification
<b>B4</b>	Undertake valid research using appropriate research methods within the selected research domain
<b>B5</b>	Demonstrate an ability to critically synthesise and evaluate information and data from a variety of sources, as well as establish and discern connections relevant to a programme of Masters level research
<b>Communication, ICT and Numeracy Skills</b>	
<b>C1</b>	Communicate, verbally in writing and electronically with audiences at all levels
<b>C2</b>	Demonstrate the ability to write a well-argued and coherent report of a sustained independent work of high quality that fulfils an agreed specification
<b>C3</b>	Use appropriate software and hardware to achieve research objectives, for example developing and deploying a relevant computing artefact
<b>Generic Cognitive Skills - Problem Solving, Analysis, Evaluation</b>	
<b>D1</b>	Critically analyse and evaluate potential solutions to a technical challenge in the mobile and web development domain, and determine the most appropriate solution
<b>D2</b>	Demonstrate a critical understanding and application of quantitative and qualitative research methods and analysis techniques and technologies within the context of a Masters level programme of research
<b>D3</b>	To critically review and evaluate arguments, research approaches, evidence and conclusions in the academic and research literature
<b>D4</b>	Demonstrate an ability to creatively apply a range of approaches in addressing technical challenges, together with a practical understanding of how established research or development techniques may be used to create knowledge and useful artefacts in the web and mobile domain
<b>Autonomy, Accountability and Working With Others</b>	
<b>E1</b>	Take on responsibility for the selection of the research topic and ownership of the research process including integrity in the use of sources
<b>E2</b>	Demonstrate an ability to manage and work autonomously with a range of self-directed learning resources
<b>E3</b>	Exercise substantial autonomy and initiative in progressing a research project
<b>E4</b>	Develop a productive relationship with a project supervisor and practice critical reflection on progress and guidance
<b>E5</b>	Demonstrate an ability to define and carry out tasks autonomously, demonstrating critical enquiry in producing quality work underpinned by rigorous relevant research and investigation, and demonstrate the ability to reflect critically on relevant issues, with reference both to past experience and new developments

### Core Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
11	COMP11008	Web Development	20				
11	COMP11001	Ethics for the IT Professional	10				
11	COMP11015	Interactive Design for Smart Devices	10				
11	COMP11062	Mobile Networks and Smartphone Applications	20				
11	COMP11005	Dynamic Web Applications	20				
11	COMP11051	Mobile Business Technology and Design	20				
11	COMP11017	Research Design and Methods	10				

11	COMP11057	Security for the Mobile Web	10				
11	COMP11024	Masters Project	60				

\* Indicates that module descriptor is not published.

#### Footnotes

Full-time students will commence the Masters Project in TM3. Part-time students will commence the Masters Project in the first available term upon completion of the Pg Dip.

The choice of topic for the MSc Project is made by the student in consultation with the MSc Project coordinator and academic staff that the student may have consulted with. The topic should be related to the subjects and content covered during the PgC/PgD stage of the programme. At the start of the MSc Project the student will be allocated a specific supervisor and moderator with experience and expertise in the student's chosen topic for the duration of the MSc project module.

A student is expected to reach three specific milestones during the MSc project:

1. To produce an MSc Project Specification that meets the approval of a panel of academic reviewers in the School.
2. To produce an interim report approximately at the half-way point of the project, containing an early draft of the literature review as well as comprehensive description of the project methodology to be used, and forward plan for the completion of the project.
3. To submit a dissertation of approximately 18,000 words in which the following areas are typically expected to be addressed: subject literature is critically reviewed, full project methodology is described, collected data and results are published, or prototype systems are developed and evaluated, and a critique incorporating recommendations suggested by the research results, a self-assessment and recommendations for further work on the topic are included.

#### Optional Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	

\* Indicates that module descriptor is not published.

#### Footnotes

#### Criteria for Award

The criteria for the award of Masters is defined in the University Regulatory Framework: At least 180 credit points of which a minimum of 150 at SCQF 11 and none less than SCQF level 10.

A Master of Science in Mobile Web Development will be awarded to a student who gains 180 credits points by passing the ALL of the above SCQF Level 11 modules.

Distinctions will be achieved by obtaining a mean mark of 70% or above at first attempt over all of the above modules.

#### Regulations of Assessment

Candidates will be bound by the general assessment regulations of the University as specified in the [University Regulatory Framework](#).

An overview of the assessment details is provided in the Student Handbook and the assessment criteria for each module is provided in the module descriptor which forms part of the module pack issued to students. For further details on assessment please refer to Chapter 3 of the Regulatory Framework.

To qualify for an award of the University, students must complete all the programme requirements and must meet the credit minima detailed in Chapter 1 of the Regulatory Framework.