University of the West of Scotland

Module Descriptor

Session: 2024/25

Title of Module: Advanced Programming for Mobile Devices			
Code: COMP09078	**SCQF Level: 9 (Scottish Credit and Qualifications Framework)**	**Credit Points: 20**	**ECTS: 10 (European Credit Transfer Scheme)**
School:	School of Computing, Engineering and Physical Sciences		
Module Co-ordinator:	Sajjad Bagheri		

Summary of Module

Advanced Programming for Mobile Devices is degree-level module for the Minor in Mobile Development. It covers the development of object-oriented applications for mobile devices, with emphasis on Object Oriented Design and Develop for Android applications. The module also covers designing user-interfaces and backend infrastructure for a range of application types, and a variety of mobile design patterns and APIs for mobile development, including:

- Object oriented design
- Application design.
- design patterns applicable to Android (Java) and the Android SDK.

Students on this module should already have taken an Introduction to Programming for mobile devices and so there will be a focus on advanced programming structures and algorithms, and also to consider advanced design and implementation of mobile apps within the practical assessment.

This module will work to develop a number of the key 'I am UWS' Graduate Attributes to make those who complete this module:

Universal
- Critical Thinker
- Ethically-minded
- Research-minded

Work Ready
- Problem-Solver
- Effective Communicator
- Ambitious Successful

Successful
- Autonomous
- Resilient
- Driven

Module Delivery Method					
Face-To-Face	**Blended**	**Fully Online**	**HybridC**	**Hybrid 0**	**Work-Based Learning**
☒	☒	☐	☐	☐	☐
See Guidance Note for details. *If this module is delivered within the BSc (Hons) IT Software Development Programme the 'Blended' module delivery method applies.*					

Campus(es) for Module Delivery						
The module will **normally** be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit) (tick as appropriate)						
Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
☒	☐	☐	☒	☐	☐	Add name

Term(s) for Module Delivery					
(Provided viable student numbers permit).					
Term 1	☐	Term 2	☒	Term 3	☐

Learning Outcomes: (maximum of 5 statements) **These should take cognisance of the SCQF level descriptors and be at the appropriate level for the module.** At the end of this module the student will be able to:	
L1	Develop applications for implementation using an IDE
L2	Use an appropriate testing environment to develop, test and de-bug a mobile application
L3	Apply advanced object oriented technique to the design of mobile apps
L4	Apply advanced programming structures to the implementation of mobile apps

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:

Knowledge and Understanding (K and U)	SCQF Level **9** A broad knowledge of the following programming concepts and principles: User Interface design for apps; mobile application design.	
Practice: Applied Knowledge and Understanding	SCQF Level **9** Use of test environments for development and debugging of mobile applications, creating rich mobile user-interfaces and applying object oriented principles to mobile applications.	
Generic Cognitive skills	SCQF Level **9** Programming in mobile frameworks (e.g. Java/Android, .NET/WinMobile), data-design for small-scale applications, debugging on emulators and connected devices	
Communication, ICT and Numeracy Skills	SCQF Level **9** Use of online services (web services) for interaction with cloud and corporate data-stores and services.	
Autonomy, Accountability and Working with others	SCQF Level **9** Working in a project team with clearly identified individual responsibilities to produce a coherent product.	
Pre-requisites:	Before undertaking this module the student should have undertaken the following:	
	Module Code: COMP08068	**Module Title:** Programming for Mobile Devices
	Other:	
Co-requisites	**Module Code:**	**Module Title:**

*Indicates that module descriptor is not published.

Learning and Teaching	
Students will attend weekly in-person lectures and supervised labs. The lectures will cover programming and mobile development concepts relevant to the labs, enhancing understanding of programming for mobile web and hybrid applications. Alongside scheduled classes, students are anticipated to dedicate considerable time to unsupervised lab work and self-directed study.	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Normally totalling 200 hours): (Note: Learning hours include both contact hours

	and hours spent on other learning activities)
Lecture/Core Content Delivery	20
Laboratory/Practical Demonstration/Workshop	20
Independent Study	160
	200 Hours Total

****Indicative Resources: (eg. Core text, journals, internet access)**

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

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Google online Developer resources

Android Studio

(**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.

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.

This module is suitable for any student. The assessment regime will be applied flexibly so that a student who can attain the practical outcomes of the module will not be disadvantaged. When a student discloses a disability, or if a tutor is concerned about a student, the tutor in consultation with the School Enabling Support coordinator will agree the appropriate adjustments to be made.

(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
Assessment Results (Pass/Fail)	Yes ☐No ☒
School Assessment Board	Business & Applied Computing
Moderator	Shahriar Al-Ahmed
External Examiner	D Doolan
Accreditation Details	e.g. ACCA Click or tap here to enter text.
Changes/Version Number	2.14

Assessment: (also refer to Assessment Outcomes Grids below)
Two assessments are grouped under a single assessment component. One of these assessments comprises ten class exercises, which accounts for 10% of the final mark, and a practical examination worth 40% of the final mark. The other assessment consists of a practical development project (50%).
Assessment 1 – Class Test
Assessment 2 – Portfolio of practical work (project)
(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.)

Assessment Outcome Grids (See Guidance Note)

Component 1							
Assessment Type (Footnote B.)	**Learning Outcome (1)**	**Learning Outcome (2)**	**Learning Outcome (3)**	**Learning Outcome (4)**		**Weighting (%) of Assessment Element**	**Timetabled Contact Hours**
Class test	✓	✓	✓	✓		50	4
Project	✓	✓	✓	✓		50	0
						100%	**4 hours**

Change Control:

What	**When**	**Who**

Version Number: MD Template 1 (2023-24)