MODULE SPECIFICATION

Module Code:	CONL709

Module Title:	Mobile App Development

Level:	7	**Credit Value:**	15

Cost Centre(s):	GACP	JACS3 **code**: HECoS code:	I320 100956

Faculty:	FAST	**Module Leader:**	Jessica Muirhead

Scheduled learning and teaching hours	15 hrs
Guided independent study	135 hrs
Placement	0 hrs
Module duration (total hours)	150 hrs

Programme(s) in which to be offered (not including exit awards)	Core	Option
MSc Computer Science with Software Engineering	✓	☐

Pre-requisites
Studied CONL701 Critical Research for Postgraduate Study

Office use only

Initial approval: 04/09/2019 Version no:1

With effect from: 01/01/2020

Date and details of revision: Version no:

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Module Aims
This module will focus on the design and implementation of mobile apps. This will enable the student to develop an understanding of the current technical issues; in the development of mobile apps, including hardware and software considerations, development and implementation and the selection of appropriate programming languages. Students will be encouraged to consider the design and development of an effective presence on mobile devices. In addition, the balance between security, the user interface, performance and accessibility will be examined, and the problems associated with updateable data explored.

Intended Learning Outcomes

Key skills for employability

KS1 Written, oral and media communication skills
KS2 Leadership, team working and networking skills
KS3 Opportunity, creativity and problem-solving skills
KS4 Information technology skills and digital literacy
KS5 Information management skills
KS6 Research skills
KS7 Intercultural and sustainability skills
KS8 Career management skills
KS9 Learning to learn (managing personal and professional development, self-management)
KS10 Numeracy

	At the end of this module, students will be able to	Key Skills	
1	Critically evaluate the properties and capabilities of modern mobile devices and the specific issues related to software development.	KS1	KS3
		KS4	KS5
		KS6	
2	Demonstrate an in-depth understanding of accessibility issues within the development of mobile apps.	KS4	KS5
		KS6	KS7
3	Use a current development environment to design, develop, deploy and debug an appropriate app on a mobile device that interacts with a database.	KS1	KS4
		KS9	
4	Develop an app for multiple devices using the appropriate languages and development tools.	KS3	KS4
		KS5	

Transferable skills and other attributes

Students will work, developing mobile apps throughout the module. Building their organisational and time management skills, as well as the ability to work on activities using standard development environments and techniques.

Derogations

None

Assessment:

Indicative Assessment Tasks:

The module is assessed through the development of apps that implements some of the current mobile technologies, together with supporting documentation in the form of a research and design-based documentation. From this analysis and development, students will be expected to develop a more complex mobile app for the final part of the assessment. Students will apply the software development lifecycle to the design and development of their apps. Marks for the work will be derived from: the software deliverable; the use of appropriate theories, technologies and good practice; and documentation reflecting on the work done and the processes involved.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration or Word count (or equivalent if appropriate)
1	1,2	Report	50	1500 words
2	3,4	Coursework	50	1500 words (equiv)

Learning and Teaching Strategies:

The overall learning and teaching strategy is one of guided independent study requiring ongoing student engagement. Online material will provide the foundation of the learning resources, requiring the students to login and engage on a regular basis throughout the eight-week period of the module. There will be a mix of suggested readings, discussions and interactive content containing embedded digital media and self-checks for students to complete as they work through the material and undertake the assessment tasks. The use of a range digital tools via the virtual learning environment together with additional sources of reading will also be utilised to accommodate learning styles. There is access to a helpline for additional support and chat facilities through Canvas for messaging and responding.

Syllabus outline:

1. Mobile devices – introduction to technologies, hardware, software; visions of pervasive and ubiquitous computing.
2. Mobile devices and distributed computing - features and limitations; device databases, remote databases and data access; position determination and location aware applications.
3. Mobile design: mobile app HCI and design guidelines: features and limitations; concurrency in clients and servers; asynchronous vs. synchronous operation; ethical, legal, privacy and security issues.
4. Mobile development – device emulation; creating, debugging and deploying mobile apps.

Indicative Bibliography:

Essential reading

Android Developer Web Site	https://developer.android.com/
Android Studio	https://developer.android.com/studio
Android Studio User Guide	https://developer.android.com/studio/intro
Android Studio write your App	https://developer.android.com/studio/write

Other indicative reading

Journals: Computer Communications (journals available electronically via Science Direct through the Library).

Professional Body Websites:
The British Computer Society (BCS) http://www.bcs.org/
The Institution of Engineering and Technology (IET) http://www.theiet.org/
The Institute of Electrical and Electronics Engineers (IEEE) http://www.ieee.org
The Association of Computing Machinery (ACM) http://www.acm.org/