MODULE SPECIFICATION PROFORMA

Module Code:	COM640

Module Title:	Advanced Mobile Development

Level:	6	**Credit Value:**	20

Cost Centre(s):	GAPC	JACS3 **code**:	I610

Faculty:	Arts, Science and Technology	**Module Leader:**	John Worden

Scheduled learning and teaching hours	24 hrs
Guided independent study	176 hrs
Placement	0 hrs
Module duration (total hours)	200 hrs

Programme(s) in which to be offered (not including exit awards)	Core	Option
BSc (Hons) Computer Game Development	✓	☐
BSc (Hons) Computing	✓	☐
BSc (Hons) Applied Software Engineering	✓	☐

Pre-requisites
None

Office use only

Initial approval: 30/08/2018 Version no:2

With effect from: 01/09/2018

Date and details of revision: Jan 22: addition of BSc Applied software Engineering Version no:

Module Aims

To provide guidelines, design principles and experience in developing advanced object oriented apps for mobile devices, such as Android based devices and/or Apple iOS based devices. The business model for App-Store marketing (Google Play and other variants) will be discussed as a paradigm for the development of new start-up companies. Social Issues, which consider M-Commerce and Mobile Payment systems, and issues to do with Mobile Privacy and Ethics.

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	Design apps appropriately for implementation in Java with the Android SDK, and/or Objective-C on iOS.	KS1	KS3
		KS4	
2	Demonstrate an in depth understanding of the characteristics and limitations of mobile hardware devices and the importance of usability in mobile apps.	KS4	KS5
3	Develop, test and deploy mobile-device apps that use device-specific application programming interfaces (APIs) and demonstrate current practice in mobile computing contexts.	KS3	KS4
4	Evaluate the current professional and ethical issues, in particular those relating to security and privacy of user data.	KS5	KS6

Transferable skills and other attributes

- Personal motivation, organisation and time management
- Ability to collaborate and plan
- Written and verbal communication skills
- Research and analytical skills

Derogations

None

Assessment:

Indicative Assessment Tasks:

The module is assessed through a report and the development of apps, which implement current mobile technologies, together with supporting documentation in the form of a design based report.

Marks for the work will be derived from: the software deliverable; the application of appropriate principles, 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 (if exam)	Word count (or equivalent if appropriate)
1	4	Report	50		
2	1, 2, 3	Coursework	50		

Learning and Teaching Strategies:

Lectures, supported by tutorials and practical sessions where students get the opportunity to put theory into practice.

The lectures will focus on presenting key topics and concepts, whereas the practical/tutorial based learning will provide exposure to hardware and software platforms, and the use of toolkits for designing and developing mobile applications.

These sessions will also support the study of underlying subject-based concepts and principles.

Formative, self-directed exercises will be used to support transfer of knowledge and understanding.

Students will also discuss and exchange information through peer group discussions and presentations (using a VLE platform).

Syllabus outline:

Mobile App Development, including: An overview of device-specific frameworks, e.g. Android SDK and/or iOS Framework.

Contemporary software architectures, including service oriented architecture (SOA) and microservices architecture

Investigating advanced features in the development frameworks and environments;

Human Computer Interaction issues, such as Interfaces on small displays with limited user attention and internationalization.

Interaction through touch/swipe gestures, accelerometers, predictive texting, location services, and orientation; user-input and user preferences.

The use of emulators for development, debugging and first-level user-interface testing.

The Data Protection Act (DPA) (GDPR); in regards to privacy, when developing mobile apps.

Indicative Bibliography:

Essential reading

There are no essential texts; the module will use relevant online reference material.

Other indicative reading

Android Developer Guides
https://developer.android.com/guide/index.html

Apple Developer Documentation
https://developer.apple.com/documentation/

Privacy in mobile apps
https://ico.org.uk/media/for-organisations/documents/1596/privacy-in-mobile-apps-dp-guidance.pdf