

Module Details

Long Title:	Multimedia and Mobile Application Development APPROVED	
Language of Instruction:	English	
Module Code:	H8MAD	
Credits:	5	
NFQ Level:	LEVEL 8	
Field of Study:	Software and applications development and analysis	
Valid From:	2016 (July 2016)	
Module Delivered in	2 programme(s)	
Module Coordinator:	Anu Sahni	
Module editor:	Anu Sahni	
Teaching and Learning Strategy:	The teaching strategy involves the use of lectures, tutorials, independent learning, class discussions and formative assessment as appropriate. Additionally, learners will also have access to web based support. The module will utilise journal articles to explore current techniques and strategies within mobile development. This module is suitable for blended delivery. Techniques such as online videos showing step by step instructions, module material available online on Moodle, links to extra material available on the Internet Social media, Moodle forum and Moodle Lesson may be used. The continuous assessment can be done through online Moodle quiz and the practical work submitted online on Moodle. Git for Windows collaborative tool may be used for project version control and to track which students have actually done the work on projects.	
Learning Environment:	Learning will take place in a class room/lab environment with IT access. Module materials will be placed on Moodle, the college's virtual learning environment.	
Module Description:	The aim of this module is to provide students with background theory and hands-on experience of developing and testing mobile multimedia applications for smart phone, tablet, watch, TV, auto, gear, etc. The module will focus on the tools and environments that exist to help developers develop real-world applications that run on mobile devices.	
Learning Outcomes		
On successful completion of this module the learner will be able to:		
LO1	Identify a mobile application solution which address a particular need / problem by analyzing business problems and propose solutions	
LO2	Design and architect the mobile solution evaluating the capabilities and challenges of various platforms, IDEs, and frameworks	
LO3	Develop an intuitive user interface controls, animation, and streaming media to provide good user experience	
LO4	Build and document a mobile solution that is capable of interfacing with mobile hardware features / media and various APIs by applying detailed knowledge and understanding of emerging mobile technologies concepts and theories	
Pre-requisite learning		
Module Recommendations This is prior learning (or a practical skill) that is required before enrolment on this module. While the prior learning is expressed as named NCI module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).		
17624	H7APR_1	Advanced Programming
Requirements This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed. You may not enrol on this module if you have not acquired the learning specified in this section.		
Pre-requisite Module: Advanced Programming (H7APR)		

Module Content & Assessment

Indicative Content

Technical Challenges (5%)

Technical Challenges of the Environment and Architectures for Mobile Applications • Challenges of developing applications for mobile environment • Limitations imposed by medium and mobile devices • Performance and Usability/HCI Issues • Architectures for mobile applications • OS for mobile devices eg. iOS, Android, Windows 8 • APIs for wireless/mobile devices e.g., iOS/Android SDK, .NET, • Design patterns

User Interface (20%)

Activity, Building apps with static UI • UI with Fragments • Building apps with dynamic UI • Communicating with other fragments • Interacting with other activities

Audio, Music, and Sound (20%)

• Audio Capture • Controlling App's Volume and Playback • Managing Audio Focus • Dealing with Audio Output Hardware

Camera and Video (20%)

• Working with images • Capturing photos • Controlling camera • Recording videos • YouTube videos

M2M communication (20%)

• Wireless communications • Sensors • Wireless sensor network • M2M apps

Animation (15%)

• Animation • Crossfading Two Views • Using ViewPager for Screen Slide • Zooming a View

Assessment Breakdown

	%
Coursework	100.00%

Full Time

Coursework

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Assignment (0350)	In class assessments (e.g. practical lab exercises, literature / market survey, documentation, platform / framework evaluation)	1,2,3,4	60.00	Every Week
Project (0050)	In class assessments (e.g. practical lab exercises, literature / market survey, documentation, platform / framework evaluation)	3,4	40.00	Week 12

No End of Module Assessment

No Workplace Assessment

Reassessment Requirement

Coursework Only

This module is reassessed solely on the basis of re-submitted coursework. There is no repeat written examination.

Reassessment Description

Learners will be afforded an opportunity to repeat the module by developing a mobile application and submit the project source code and project report where all learning outcomes will be assessed.

NCIRL reserves the right to alter the nature and timings of assessment

Module Workload

Full Time hours per semester		
Workload Type	Workload Description	Hours
Lecture	No Description	2
Lab	No Description	1
Independent Learning	No Description	7.5
Total Hours		10.50

Part Time hours per semester		
Workload Type	Workload Description	Hours
Lecture	No Description	2
Lab	No Description	1
Total Hours		3.00

Module Resources

Recommended Book Resources

Matt Neuburg 2015, *Programming iOS 9*, ; O'Reilly & Associates Inc [ISBN: 1491936851]

Bill Phillips, Chris Stewart, Brian Hardy, Kristin Marsicano 2013, *Android Programming: The Big Nerd Ranch Guide*, 2nd Ed. [ISBN: 978013417145]

Jan Holler, Vlasios Tsiatsis, Catherine Mulligan, Stefan Avesand, Stamatis Karnouskos, David Boyle, 2014, *From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence* [ISBN: 978012407684]

Supplementary Book Resources

Boisy G. Pitre 2016, *Swift for Beginners: Develop and Design*, 2nd Ed., Peachpit Press [ISBN: 978-013428977]

Paul Deitel (Author), Harvey Deitel (Author), Alexander Wald (Author) 2016, *Android 6 for Programmers: An App-Driven Approach*, 3rd Ed., Deitel Developer Series), Pearson Education, [ISBN: 978-013428936]

Edward Sazonov, Michael R Neuman 2014, , *Wearable Sensors: Fundamentals, Implementation and Applications*, Academic Press [ISBN: 978-012418662]

This module does not have any article/paper resources

Other Resources

Website: Android Developers 2014, *Android Developers*
<http://developer.android.com/>

Website: 2014*iPhone Application Development*
<http://developer.apple.com/>

Website: 2014*Windows Phone Application Development*
<http://www.developer.windowsphone.com/>

Module Delivered in

Programme Code	<i>Programme Title</i>
BSHC	BSc (Honours) in Computing (Approved)
HDCOM	Higher Diploma in Science in Computing (Approved)