MODULE **DESCRIPTOR**

MODULE TITLE	Mobile Application Development		
MODULE CODE	CO4755 (L7)	CREDIT VALUE	20 / 10 ECTS
SCHOOL	SCHOOL OF SCIENCE		

MODULE **AIMS**

1. To develop an understanding of software technologies and architectures for mobile computing
2. To enhance software skills to enable the development of software applications for mobile computing environments
3. To explore a range of problems and solutions inherent in mobile computing: connectivity, security, quality of service

MODULE **CONTENT**

Mobile computing provides access to information and processing where and when the user requires. Improvements in wireless networks, hardware technology, and protocols for the provision of distributed services have rapidly increased the capability and popularity of personal ICT (smart phones and tablets, wearable computing devices, etc.). Furthermore, the advancement of sensing capabilities in modern smartphone devices has fuelled the fusion of context-aware features in many popular apps. The enabling technologies provide both technical and user-interface challenges for the software developer. This module explores the underlying technology and extends development skills to produce, release, and maintain software for mobile and distributed environments.

Syllabus

Human Computer Interaction
- Challenges and advancements in Human-Computer Interaction (HCI) for mobile
- Designing and implementing your app's User Interface (UI)
- User Interface (UI) patterns for mobile apps

Mobile Application Development Lifecycle
- Requirements and User testing
- Production and Release considerations
- Post-production considerations

Mobile Platform Architecture
- Architectural overview of a modern smartphone platform
- The main components of an ANDROID app
- Developing a mobile app for the ANDROID platform
- Storing data locally using the SQLite database

Networks and Security
- Advancements in mobile and wireless network technology

Advanced Topics in Mobile Applications
- Mobile devices as the endpoints of distributed systems
- Context-awareness and mobile computing

INTENDED **LEARNING OUTCOMES**

On successful completion of this module a student will be able to:

1.	Develop software for mobile applications using a modern development environment
2.	Design an appropriate user interface for a mobile application
3.	Recommend solutions to the problems arising during the full lifecycle of mobile application development
4.	Use relevant literature to investigate and explain hardware and software technology supporting mobile computing technology
5.	Critically evaluate solutions to technical problems relating to mobile computing systems.

TEACHING METHODS

A combination of lectures, tutorial and practical work will be used.

Lectures will consider the latest developments in mobile technology covering topics such as mobile ecosystems, information architecture, design & usability, location & context awareness, marketing and app stores, and more.

Tutorials will be used to compare technologies, including discussing the results of students' investigations, and to prepare for practical work, particularly for programming exercises (e.g. via specific project development walk-throughs).

Practical work will develop programming, user-interface design and network configuration skills, building on individual worksheet-based assignments.

Assessment is based on two components: First, students are asked to study an individual topic relevant to recent developments in mobile application development, produce an original work summarizing their understanding of it, and present it in class. Second, they are asked to work on a large, realistic project to allow them to practice their development skills in one of the most relevant platforms.

ASSESSMENT METHODS

This module is assessed through an essay (30%) and a project (70%).