COURSE DETAILS
Course Code: F21MC
Full Course Title: Mobile Communications & Programming
SCQF Level: 11
SCAF Credits: 15
Available as Elective: No

DELIVERY LEVEL
Undergraduate: No
Postgraduate Taught: Yes
Postgraduate Research: No

COURSE AIMS
- To introduce students to the particular problems of building networks which include mobile computing devices and to explain how they may be overcome using current technology
- To introduce students to the issues surrounding ad hoc networking and give an understanding of how these can be addressed
- To introduce students to programmable mobile and handheld devices
- To develop students' skills in developing applications for mobile and handheld devices

LEARNING OUTCOMES – SUBJECT MASTERY
- To understand and apply the principles of secure, effective communication over networks including mobile elements.
- To be able to explain the operation of current and proposed protocols for communication over networks which include mobile elements.
- To understand and be able to explain the issues introduced by ad-hoc networking.
- To have critical understanding of common ad-hoc routing protocols.
- To explain and critically evaluate current and proposed mobile devices.
- To design applications for mobile devices including use of wireless communications where appropriate.
- To program such applications using current application development environments.

LEARNING OUTCOMES – PERSONAL ABILITIES
- To be able to select and apply suitable techniques of analysis in assessing the effectiveness of a technical solution.
- To be able to critically review the issues of security and privacy relating to networking.
- To be able to write good technical documents in support of problem solving within the domains of mobile networking and of mobile and handheld device solutions.

SYLLABUS
Fixed node IP routing - routing techniques for conventional wired networks

Mobile IP routing - routing for wireless mobiles to IP

Ad hoc networks and routing

Security protocols - identification and authorisation, infrastructure security

Small device characteristics - screen size, memory, power consumption, input mechanisms

Current devices - tablet PC, mobile phone, PDA

Application development environments - Java APIs, C# and .NET

NOTE:- Knowledge of network communications and object oriented programming, is a pre-requisite for this course.

COURSE RELATIONSHIPS
N/A

LOCATION AND ASSESSMENT METHODS

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