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
F21MC Mobile Communications & Programming

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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