Liverpool John Moores University

Title:	WIRELESS NETWORKS
Status:	Definitive
Code:	**6017COMP** (102993)
Version Start Date:	01-08-2011
Owning School/Faculty:	Computing and Mathematical Sciences
Teaching School/Faculty:	Computing and Mathematical Sciences

Team	Leader
Omar Abuelma'atti	Y

Academic Level:	FHEQ6	**Credit Value:**	12.00	**Total Delivered Hours:**	38.00
Total Learning Hours:	120	**Private Study:**	82		

Delivery Options
Course typically offered: Semester 2

Component	Contact Hours
Lecture	12.000
Practical	12.000
Tutorial	12.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Practice	AS1	A practical application	25.0	
Exam	AS2	Examination	75.0	2.00

Aims

To develop an understanding of the theory and practice of building wireless networks.
To provide an in-depth study of the requirements of wireless communications, including the development of standards for wireless networks.
To examine current developments associated with wireless communications and networks.

Learning Outcomes

After completing the module the student should be able to:

1 Critically review the fundamental technical concepts, design and implementation of wireless networks.
2 Apply creative skills concerning the approaches and practices used to build wireless networks.
3 Critically evaluate the provision of wireless networks and their impact on current wireless networking environment.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Practical application	2	3
Exam	1	2

Outline Syllabus

The course outline includes:
Applications and Architectures: characteristics of wireless communications, types of wireless network, systems (GSM, Wi-Fi, Bluetooth), ad-hoc networks, location-based services, networked appliances, sensor networks
Internetworking: wireless Internet, Mobile IP, MIPv6, Cellular IP, WAP, Wireless QoS, Middleware for wireless, adaptation, security
Wireless Communications: Cellular concept, spectrum management, MAC schemes, TDMA/CDMA/FDMA, voice communications, power and energy control

Learning Activities

Practical laboratory exercises, supporting the lectures and tutorials.

References

Course Material	Book
Author	Stallings, W.
Publishing Year	2002
Title	Wireless Communications and Networks
Subtitle	
Edition	
Publisher	Prentice Hall (Pearson)
ISBN	0130408646

Course Material	Book
Author	Schiller, J.
Publishing Year	2004
Title	Mobile Communications
Subtitle	
Edition	2nd Edition
Publisher	Addison-Wesley (Pearson)
ISBN	0-321-12381-6

Notes

This advanced module is intended for students interested in the emerging field of wireless networking. The purpose of the module is to provide the fundamental technical concepts essential for the design and implementation of wireless networks. This module will concentrate on networks operated in a wireless environment and will focus on wireless networking from the network-level viewpoint. The module will cover different types of networks and architectures, networking functions, mobility management, overview of current systems and standards, and related hot issues debated in the research community.