SE TU

Ollscoil
Teicneolaíochta
an Oirdheiscirt

South East
Technological
University

Module Descriptor

Multimedia Networks (Computing and Mathematics)

Multimedia Networks
(A13421)

Short Title: Multimedia Networks
Department: Computing and Mathematics
Credits: 5   **Level:**   Intermediate

Description of Module / Aims

This module introduces Computer Networking terminology and concepts, and examines various network protocols and models. Students will use protocol analysis software to explore various network protocol operations. TCP/IP and IP addressing are presented as well as an exploration of real-time Multimedia applications and protocols. Quality of Service (QoS) is also discussed and a brief examination of resource management is also provided. Practical skills are an essential part of this module.

Programmes

	stage/semester/status
COMP-0966 BSc (Hons) in Creative Computing (WD_KCRCO_B)	3 / 6 / M
COMP-0966 BSc in Multimedia Applications Development (WD_KMULA_D)	3 / 6 / M

Indicative Content

- Introduction to Computer Networks and Protocols
- OSI and TCP/IP models
- IPv4 Addressing and subnetting
- IPv6
- Transport Layer Protocols and Functionality
- Application Layer Protocols and Functionality
- Multimedia Protocols
- Quality of Service (QoS)
- Resource Management

Learning Outcomes

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

1. Use network protocol models and tools to explain communications in data networks.
2. Examine in detail the major components, operation and functionality of a computer network and commonly used protocols and services.
3. Examine the technologies used for streaming multimedia over the Internet.
4. Design, calculate and apply subnet masks and addresses.
5. Build a simple network using routers and switches.
6. Examine issues related to the configuration and management of resources required in multimedia environments.

Learning and Teaching Methods

- The lectures will introduce the theory content to the student. The student will be encouraged to participate in class discussions and ask questions to support their learning process.
- The practical classes facilitate the student in implementing the theory learned in the lectures.
- The continuous assessment will require the student to apply the theory and practical knowledge to a business solution.

Learning Modes

Learning Type	F/T Hours	P/T Hours
Lecture	36	
Lab	24	
Independent Learning	75	

Assessment Methods

	Weighting	Outcomes Assessed
Continuous Assessment	100%	
Practical	60%	4,5
In-Class Assessment	40%	1,2,3,6

Assessment Criteria

<40%: Unable to describe the major functions and operation of a Computer Network. Unable to describe and compare the OSI and TCP/IP models. Poor understanding of role of communications protocols in computer networks.

40%–49%: Can describe and compare the OSI and TCP/IP models. Can provide overview of main computer network components and protocols.

50%–59%: All of the above. Can describe in detail the data encapsulation process. Demonstrate an understanding of basic LAN implementation.

60%–69%: In addition, be able to recommend a network solution given an organisations' requirements.

70%–100%: All the above to an excellent level. Be able to analyse and design solutions to a high standard for a range of both complex and unforeseen problems through the use and modification of appropriate skills and tools.

Supplementary Material(s)

- Cisco, Networking. *Network Basics, CCNA Routing & Switching Companion Guide.* New York: Cisco Press, 2014.
- Kurose, J. and K Ross. *Computer Networking: A Top Down Approach.* 6th Ed.. New York: Pearson Education, 2012.
- Tanenbaum, A. and D. Wetherall. *Computer Networks.* 5th Ed.. New York: Pearson Education, 2013.

Requested Resources

- Computer Lab: Networks Lab