
Module Specifications: *Schools of Business & Management & Information Technology*

Module Title:	Networks II: routing and switching
Module Code:	021
Level:	5
Credits:	15
Pre-Requisites:	

Module Description:

This module will enable students to build on Networking1 (to design, install, operate, and troubleshoot small to medium size networks), to include the configuration of switches, connecting to LANs, Wireless LANs and WANs implementing network security.

The unit covers how networks function. The understanding of issues related to increasing traffic on an Ethernet LAN and identification of switched LAN technology solutions to Ethernet networking issues. The functions of Wide Area Networks (WANs), the major devices of WANs, and the configuration of PPP encapsulation, static and dynamic routing. The use of the commands to discover neighbours on a network.

Indicative Content:

- Network segmentation and basic traffic management concepts
- The operation of Cisco switches and basic switching concepts
- Verification initial switch configuration tasks
- Verification of network status and switch operation using basic utilities
- Implement and verification basic security for a switch (port security, deactivate ports)
- Wireless media standards and security features
- Methods to mitigate common security threats to network devices, hosts, and applications
- Configuration and verification a basic Wide Area Network serial connection
- Safety precautions in installation and trouble-shooting activities

Learning and Teaching Methods:

Classroom, workshop and labs. Cisco online materials for self-study.

Specific Learning Resources:

Computers over which learners have admin rights, routers, switches, cabling.
Network simulation software.

Bibliography

Highly Recommended

Module Specifications: *Schools of Business & Management & Information Technology*
Cisco NetSpace: Switching and Routing, <http://www.netacad.com> Cisco Networking Academy (2014) *Routing and Switching Essentials Companion Guide*, Cisco Press

Recommended

Pahlavan, K. and Krishnamurthy, P. (2009) *Networking Fundamentals: Wide, Local and Personal Area Communications*, Wiley-blackwell

Module Learning Outcomes

Subject Specific Learning Outcomes

On successful completion of this module you will be able to:

LO 1 | Design and implement small to medium size switched networks to fulfil requirement

LO 2 | Identify, explain and evaluate current network security threats and design and implement a comprehensive security policy for communication devices to mitigate those threats

LO 3 | Understand and implement Wide Area Networks.

Assessment Title or element	Weighting (%)
Assignment: report documenting the design of a small network with evaluation (includes 10% for demonstration) (2000 words) [end semester]	100%