

Pre-Requisite Modules code(s)	Co-Requisite Modules code(s)	ECTS Credits	Module Code	Module Title
CMPU1021		5	CMPU2014	Networking 2 - Routing

8.2.3. Networking 2 – Routing

Module author: Paul Doyle

Module Description:

This course serves as an introduction to networking routing protocols and concepts. The course focuses on network routing protocols both static and dynamic showing how the routing table is populated and interpreted. Static Routing and Dynamic Routing is covered with emphasis on a number of popular dynamic routing protocols. The module is structured to cover both fundamental theory and practical laboratory experience in building and diagnosing issues related to network routing.

Module aim

The goal is to develop a practical understanding of how a router learns about remote networks and determines the best path to those networks. This course includes both static routing and dynamic routing protocols.

Learning Outcomes:

On completion of this module, the learner will be able to

- Explain the theory behind CIDR and VLSM
- Demonstrate how to manage router software
- Configure multiple routing protocols.
- Implement basic network routing infrastructures

Learning and Teaching Methods:

The on-line course delivery involves a combination of lectures, self-paced study, weekly online continuous assessment and practical laboratory sessions with both simulators and physical routing equipment.

Module content:

- Static Routing
- Dynamic Routing
- Distance Vector Routing
- RIP V1 and V2
- VLSM and CIDR
- EIGRP
- Link-State Routing

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- OSPF

Module Assessment

Assessment will be through a combination of continuous assessment and a written exam.

Marks will be allocated as follows

- Continuous Assessment (50%): The continuous assessment element of this course utilises the CCNA online assessment facility.
- Written Exam (50%): The written exam will be conducted under normal DIT Exam regulations and will be based on the theory covered during lectures.

Essential Reading:

- Cisco Systems, 2009, "CCNA Exploration Course Booklet: Routing Protocols and Concepts, Version 4.0" Cisco Press
- COMER, Douglas E. 2001, "Computer Networks and Internets with Internet Applications", Prentice Hall.
- HALSALL, Fred. 2005, "Computer Networking and the Internet", Addison Wesley.
- TANNENBAUM, Andrew, S. 1996, "Computer Networks", Prentice Hall
- LAMMLE, Todd. 1998, "CCNA Cisco Certified Network Associate Study Guide, Illustrated Edition", Sybex

Supplemental Reading:

- Cisco Systems, 2004, "CCNA 1 and 2 Lab Companion, Revised (Cisco Networking Academy Program) (3rd Edition), Cisco Press
- HALSALL, Fred. "Computer Networking and the Internet", Addison Wesley.
- THOMAS, Tom., 2004, "Network Security First Step", Cisco Press

Web references, journals and other:

- <http://www.cisco.com>
- <http://www.cisco.com/web/learning/netacad/index.html>
- http://www.cisco.com/en/US/learning/netacad/course_catalog/CCNA.html

Further Details:

Duration: Single Semester Module; Contact Hours: 4 hours per week (2 hours of lecture, 2 hours of laboratory work.) Class Size: Labs should run with a maximum of 24 students per lab supervisor

Date of Academic Council approval