

Unit of Study: ICT3051 Enterprise Networking

Overview

In this unit students will examine the components, architectures and design criteria required when securing, operating, and troubleshooting enterprise networks. Students consider wide area network (WAN) technologies, quality of service (QoS) mechanisms, and network management. Using simulators, students will implement advanced routing protocols and multi-area networks. Techniques and issues relating to Virtual Private Networks (VPN) and the software-defined networks are examined.

Course(s)	Bachelor of Information Technology
Credit Points	6 credit points
Duration	12 weeks (10 teaching weeks; 1 revision week; 1 final assessment week)
Level	Undergraduate Advanced
Student Workload	Students should expect to spend approximately 10 hours per week over 12 weeks (totalling approximately 120 hours) on learning activities for this unit.
Mode(s) of Delivery	On campus, Blended
Pre-Requisites	BIS2001 Infrastructure and Networking
Unit Coordinator	As per current timetable
Contact Information	Consultation: 1 hour scheduled session

Unit Learning Outcomes

On successful completion of this unit, students will be able to:

- ULO1 Design solutions and configurations for secure LANs and WANS.
- ULO2 Implement protocols to manage a network.
- ULO3 Optimise network performance.
- ULO4 Troubleshoot operational problems in large scale networks.

Weekly Schedule





Detailed information for each week's activities can be found on Unit's Weekly Modules in Canvas.

Week	Topic
Week 1	Open Shortest Path First (OSPF) routing protocol.
Week 2	Network Address Translation (NAT)
Week 3	Network architectures and Wide Area Network (WAN) design and troubleshooting part 1
Week 4	Network architectures and Wide Area Network (WAN) design and troubleshooting part 2
Week 5	Network architectures and Wide Area Network (WAN) design and troubleshooting part 3
Week 6	Securing site-to-site connectivity and Internet Protocol Security (IPSec),
Week 7	Virtual Private Network (VPN)
Week 8	QoS in computer networks
Week 9	Network Management
Week 10	Overview of Software Defined Networks
Week 11	Revision
Week 12	Final Assessments

Assessments

APIC awards common result grades, set out in the [Award of Grade Policy](#).

Detailed information for each assessment can be found on the Unit's Home Page in the Assessment Brief

Assessment Task	Type	Weighting	Due	Length	ULOs
Assessment 1: Laboratory Practicum Students undertake in-class quizzes as well as a series of network configuration/design tasks (include network troubleshooting activities).	Individual  Invigilated 	30%	Weeks 3, 4, 5, 7, 8, 10	(equiv. 3000 Words)	ULO1 ULO2 ULO3 ULO4
Assessment 2: Case Study Part A: Design and implement a solution to a large-scale WAN networking problem (using a simulator) justifying design choices and approaches. Part B: Present and defend the design	Group 	Part A: 20% Part B: 15%	Week 10 Weeks 11, 12	2500 words + 10-minute presentation (equiv. 1000 Words)	ULO1 ULO2 ULO3
Assessment 3: Enterprise Networking Analysis The Enterprise Networking Analysis will cover all aspects considered in the unit.	Individual 	35%	Week 12	(equiv. 2000 Words)	ULO1 ULO2 ULO3 ULO4

Equiv. – equivalent word count based on the Assessment Load Equivalence Guide.

Course Reserve

Course Reserve includes all required resources and reading material for the unit of study. You can access Course Reserve via [APIC Library](#) or via the Course Reserve link on the unit's homepage.

Prescribed text(s):

Cisco Networking Academy, 2020, Enterprise Networking, Security, and Automation Companion Guide (CCNav7), Cisco press. ISBN-10: 0-13-663432-X, ISBN-13: 978-0-13-663432-4

Odom, W. (2019) CCNA 200-301 Official Cert Guide, Volume 2, Cisco Press

Academic integrity

Ethical conduct and academic integrity and honesty are fundamental to the mission of APIC and academic misconduct will not be tolerated by the College. It is the responsibility of every student to make sure that they understand what constitutes academic misconduct and to refrain from engaging in it. Please refer to APIC's [Academic Integrity Policy](#) for further details.

Other Important Information and Links

<p>Special consideration</p> <p>If your academic work is impacted by significant documented illness, hardship, or other adverse circumstances beyond your control, you may make an application for Special Consideration. Please refer to the Assessment Policy for further details.</p>	<p>Late submission</p> <p>Penalties apply when work is submitted after the due date without approval. Please refer to the Assessment Policy for information about late submission.</p>
<p>Assessment appeals</p> <p>If you are concerned about a mark you have received for an assessment or final grade, you may apply to formally appeal the grade. Please see the Assessment Policy for further details.</p>	<p>Award of grades</p> <p>APIC awards common result grades, set out in the Award of Grade Policy.</p>
<p>Expectations of student conduct</p> <p>Students are expected to conduct themselves in a manner that is consistent with a safe and respectful study environment. More information can be found in the Student Code of Conduct.</p>	<p>Study resources</p> <p>APIC Library and Student Learning Support resources and services can be accessed via the Student Lounge or your Dashboard on the OLS (Canvas).</p>
<p>Student Services</p> <p>The Student Services team provides administrative support for students and handles enquiries about enrolment, timetables, important dates and submitting forms. More information can be found on the Student Services page on the OLS (Canvas).</p>	<p>Key dates</p> <p>Key dates through the academic year, including teaching periods, census, payment deadlines and exams can be found on the Academic Calendar section of the APIC website.</p>

Changes and Updates to the Unit of Study Guide

This Unit of Study Guide may be updated and amended from time to time. Students will be notified of any changes to the unit via the Online Learning System (Canvas) space for the unit.

This Unit of study Guide was last modified on 19th January 2023.