Unit of Study: ICT5354 Enterprise Network Design

Overview

In this unit students will expand their knowledge of architecture, components and operations of routers and switches in complex network environments. Students will design, secure, and troubleshoot a range of typical enterprise networks. Quality of service and management of networks are also considered.

Course(s)	Master of Information Technology
Credit Points	8 credit points
Duration	12 weeks (10 teaching weeks; 1 revision week; 1 final assessment week)
Level	Postgraduate Advanced
Student Workload	Students should expect to spend approximately 13 hours per week over 12 weeks (totalling approximately 156 hours) on learning activities for this unit.
Mode(s) of Delivery	On campus, Blended
Pre-Requisites	ICT5250 Computer Networks and Security
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 switched LAN and Wide Area Networks (WANs) technology solutions to networking problems.

ULO2   Explain, analyse and troubleshoot different routing and switching protocols.

ULO3   Justify switching and routing protocols and configurations.

ULO4   Critique security, QoS, and management approaches and issues relating to networking technologies.

Weekly Schedule

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

Week	Topic
Week 1	LANs and network routing
Week 2	Wide Area Networks part 1
Week 3	Wide Area Networks part 2
Week 4	Network environment management and troubleshooting networks
Week 5	Expanding switched network part 1
Week 6	Expanding switched network part 2
Week 7	Routing concepts
Week 8	Access Control Lists and network security Address space management
Week 9	LAN extensions
Week 10	QoS in Networks Network Management
Week 11	Revision
Week 12	Final Assessments

Assessments

1. All assessments are compulsory.

2. To pass the unit students must:
   - achieve a total of 50% or more of marks offered; and
   - pass all individual invigilated assessments; and
   - have attempted all assessments.

   Where one or more of these requirements are not met, the Board of Examiners will consider a student's overall progress towards meeting the unit learning outcomes and any special circumstances before reaching a decision.

3. The Board of Examiners may grant a supplementary assessment where a student:
   - achieves a total of 45% or more; and
   - has passed all individual invigilated assessments in the unit; and
   - has attempted all assessments; and
   - has a recommendation for supplementary assessment by the Unit Coordinator and the Head of Discipline.

   Where one or more of these requirements are not met, the Board of Examiners will consider a student's overall progress towards meeting the unit learning outcomes and any special circumstances before reaching a decision. Attendance and engagement in class will be considered.

4. APIC awards common result grades as set out in the Award of Grade Policy.

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

Assessment Task	Type	Weighting	Due	Length	ULOs
Assessment 1: Laboratory Practicum Students will complete in class workshop including networking problems and designs.	Individual Invigilated	30%	Weeks 3, 6, 7, 10	30 minutes each (equiv. 2000 words)	ULO1 ULO2
Assessment 2: Simulation and Report Student will design a network for a given scenario. Their documentation will include the network design and justification for the design choices made.	Individual	40%	Week 8	Design (equiv. 1000 words) 1000 words (justification)	ULO1 ULO2 ULO3
Assessment 3: Network Design Project (30%) The Network Design Project will cover all aspects considered in the unit.	Group	30%	Week 12	(equiv. 2000 words)	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):

Odom, W. (2022). CCNA 200-301 Official Cert Guide Volume 1. Cisco Systems.

Odom, W. (2022). CCNA 200-301 Official Cert Guide Volume 2. Cisco Systems.

CCNP and CCIE Enterprise Core ENCOR 350-401 Official Cert Guide, Cisco Press, 2021

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

Special consideration	Late submission
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.	Penalties apply when work is submitted after the due date without approval. Please refer to the Assessment Policy for information about late submission.
Assessment appeals	**Award of grades**
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.	APIC awards common result grades, set out in the Award of Grade Policy.
Expectations of student conduct	**Study resources**
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.	APIC Library and Student Learning Support resources and services can be accessed via the Student Lounge or your Dashboard on the OLS (Canvas).
Student Services	**Key dates**
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).	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.

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 13th May 2024.