



The University of Southern Queensland

Course specification

The current and official versions of the course specifications are available on the web at
<<http://www.usq.edu.au/coursespecification/current>>.
Please consult the web for updates that may occur during the year.

Description: Switching, Wireless and WAN Technologies

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
CSC	3427	91098	2, 2009	ONC	1.00	Toowoomba

Academic group:	FOSCI
Academic org:	FOS003
Student contribution band:	2
ASCED code:	020113

STAFFING

Examiner: Yan Li
Moderator: David Lai

REQUISITES

Pre-requisite: CSC3407

RATIONALE

Switches and routers are the basic hardware components of local area networks (LAN) and wide area networks (WAN). Furthermore, LANs are inter-connected by WANs which use different technologies from the LANs. An understanding of the basic concepts and operations for switches, routers and WAN technologies is a pre-requisite for all network professionals. This course focuses on basic concepts of switches and virtual LANs; wireless LANs; wireless routers; and various WAN technologies including Frame Relay and enterprise network security. This course covers most of the contents of CISCO Network Academy Program, Cisco Certified Network Associate (CCNA) Exploration courses, LAN Switching and Wireless, and Accessing the WAN.

SYNOPSIS

This course introduces virtual LAN as a tool to provide segmentation, flexibility and security of local area networks. Access control lists are introduced as a measure for enterprise network security. Network Address Translation is discussed as a method to conserve Internet Protocol Version 4 (ipv4) network address space. It also focuses on WAN technologies which spans large geographic areas. After completion of this course, the students will be able to describe and select appropriate WAN technologies; handle switches; routers and wireless routers with confidence.

OBJECTIVES

On successful completion of this course students will be able to:

1. Understand switching basics (Assignment 1 and exam);
2. Design, implement and maintain virtual LANs using switches (Assignment 1 and exam);
3. Understand wireless LAN technologies and configure a wireless access point (Exam);

4. Understand basic WAN technology concepts (Exam);
5. Understand and configure a Frame Relay enabled router (Assignment 2 and exam);
6. Understand and implement enterprise security including access control lists for routers (Assignment 2 and exam);
7. Understand and provide IP addressing services such as Network Address Translation and Dynamic Host Configuration Protocol (Assignment 2 and exam).

TOPICS

	Description	Weighting (%)
1.	LAN design	10.00
2.	Switching basics	10.00
3.	Virtual LAN (VLAN) and VLAN Trunking Protocol	15.00
4.	Wireless LAN technologies and security	15.00
5.	Point-to-Point Protocol (PPP)	10.00
6.	WAN technologies and Frame Relay	10.00
7.	Enterprise network security	10.00
8.	IP addressing services (NAT and DHCP)	20.00

TEXT and MATERIALS required to be PURCHASED or ACCESSED

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at <http://bookshop.usq.edu.au> click 'Semester', then enter your 'Course Code' (no spaces).

Lewis, W 2008, *LAN Switching and Wireless, CCNA Exploration Companion Guide*, Cisco Press, Indianapolis, Ind.

(ISBN-10: 1-58713-207-9 ISBN-13: 978-158713-207-0)

Vachon, B & Graziani, R 2008, *Accessing the WAN, CCNA Exploration Companion Guide*, Cisco Press, Indianapolis, Ind.

(ISBN-10: 1-58713-205-2 ISBN-13: 978-158713-205-6)

REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.

2007, 'CSC3427 Switching, routing and WAN technologies, introduction/study Book' (Available: <http://www.sci.usq.edu.au/courses/csc3427>).

(This material will be provided on the course website: <http://www.sci.usq.edu.au/courses/csc3427>)

Empson, Scott D 2005, *CCNA command quick reference (Cisco networking academy program)*, Cisco Press, Indianapolis, IN.

(1-58713-159-5)

Johnson, A 2008, *LAN Switching and Wireless, CCNA Exploration Labs and Study Guide*, Cisco Press, Indianapolis, Ind.

(ISBN-10: 1-58713-202-8 ISBN-13: 9781587132025)

Johnson, Allan 2006, *Switching basics and intermediate routing, CCNA 3 (cisco networking academy program) labs and study guide*, 2nd edn, Cisco Press, Indianapolis, IN.

(ISBN:1-58713-171-4)

Lewis, Wayne 2006, *Switching basics and intermediate routing, CCNA 3 companion guide (cisco networking academy program)*, 1st edn, Cisco Press, Indianapolis, IN.

(ISBN:1-58713-170-6)

Reid, Allen 2007, *Wan technologies, CCNA 4 companion guide (Cisco networking academy program)*, 1st edn, Cisco Press, Indianapolis, Ind.

(ISBN:1-58713-172-2) (A shrink-wrapped value pack version of the two Companion Guide books may be available.)

Rullan, J 2008, *Accessing the WAN, CCNA Exploration Labs and Study Guide*, Cisco Press, Indianapolis, Ind.

(ISBN-10: 1-58713-201-X ISBN-13: 9781587132018)

STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Directed Study	65.00
Examinations	2.00
Private Study	85.00

ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
ASSIGNMENT 1	100.00	20.00	28 Aug 2009
ASSIGNMENT 2	100.00	20.00	23 Oct 2009
2 HOUR CLOSED EXAMINATION	100.00	60.00	END S2 (see note 1)

NOTES

1. Examination dates will be available during the semester. Please refer to the examination timetable when published.

IMPORTANT ASSESSMENT INFORMATION

- 1 Attendance requirements:
It is the students' responsibility to attend and participate appropriately in all activities (such as lectures, tutorials, laboratories and practical work) scheduled for them, and to study all material provided to them or required to be accessed by them to maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration.
- 2 Requirements for students to complete each assessment item satisfactorily:

- To complete each of the assessment items satisfactorily, students must obtain at least 50% of the marks available.
- 3 Penalties for late submission of required work:
If students submit assignments after the due date without (prior) approval of the examiner then a penalty of 5% of the total marks gained by the student for the assignment may apply for each working day late up to ten working days at which time a mark of zero may be recorded. No assignments will be accepted after model answers have been posted.
 - 4 Requirements for student to be awarded a passing grade in the course:
To be assured of receiving a passing grade a student must achieve at least 50% of the total weighted marks available for the course.
 - 5 Method used to combine assessment results to attain final grade:
The final grades for students will be assigned on the basis of the aggregate of the weighted marks obtained for each of the summative assessment items in the course.
 - 6 Examination information:
Students are allowed to bring only writing and drawing instruments into the closed examination.
 - 7 Examination period when Deferred/Supplementary examinations will be held:
Any Deferred or Supplementary examinations for this course will be held during the next examination period.
 - 8 University Regulations:
Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10 Academic Misconduct for further information and to avoid actions which might contravene University Regulations. These regulations can be found at the URL <http://www.usq.edu.au/corporateservices/calendar/part5.htm> or in the current USQ Handbook.

ASSESSMENT NOTES

- 9 The due date for an assignment is the date by which a student must dispatch the assignment to the USQ. The onus is on the student to provide proof of the dispatch date, if requested by the Examiner.
- 10 In accordance with University policy, the Examiner may grant an extension of the due date of an assignment in extenuating circumstances
- 11 The Faculty will NOT accept submission of assignments by facsimile.
- 12 In the event that a due date for an assignment falls on a local public holiday in their areas, such as a Show holiday, the due date for the assignment will be the next working day. Students are to note on the assignment cover the date of the public holiday for the Examiner's convenience.
- 13 Students who have undertaken all of the required assessments in a course but who have failed to meet some of the specified objectives of a course within the normally prescribed time may be awarded the temporary grade: IM (Incomplete - Make up). An IM grade will only be awarded when, in the opinion of the examiner, a student will be able to achieve the remaining objectives of the course after a period of non directed personal study.
- 14 Students must retain a copy of each item of all submitted assignments. Students may be required to provide a copy of an assignment submitted for assessment purposes. Such copies should be dispatched to the USQ within 24 hours of receipt of a request to do so.

OTHER REQUIREMENTS

- 1 Students will require to access the Internet and an e-mail system.
 - 2 Students must check the course website on a weekly basis during the teaching semester.
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