COMP 3014 NETWORKED SYSTEMS DESIGN

Credit Points 10

Legacy Code 300575

Coordinator Sharon Griffith (https://directory.westernsydney.edu.au/search/name/Sharon Griffith/)

Description This subject builds on and consolidates the skills and knowledge gained in Computer Networking and Computer Networks and Internets. Students successfully completing this subject will acquire the necessary design skills and knowledge required to build and configure enterprise scale networks. The subject provides students with an opportunity to develop problem-solving techniques and decision-making skills to resolve networking issues. Students completing this subject and its prerequisites should also now be prepared to attempt world recognized network industry certification (CCNA).

School Computer, Data & Math Sciences

Discipline Networks and Communications

Student Contribution Band HECS Band 2 10cp

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 3 subject

Pre-requisite(s) COMP 3007

Equivalent Subjects LGYA 5741 - Broadband Networking

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Design the physical layout of the network and produce a specification diagram
2. Provide detailed network documentation in the appropriate format
3. Design an Internet Protocol (IP) subnetting scheme using Variable Length Subnet Mask (VLSM) & Classless Inter-Domain Routing (CIDR)
4. Design and propose appropriate router and switch configurations
5. Verify and troubleshoot various types of network connections
6. Provide a written final report/network design proposal to a professional standard
7. Correctly configure a Wireless Local Area Network (WLAN)
8. Correctly configure single-area Open Shortest Path First (OSPF) protocol
9. Correctly configure Virtual Local Area Networks (VLANs) and 802.1q trunking
10. Correctly configure Frame Relay
11. Correctly configure Dynamic Host Configuration Protocol (DHCP)
12. Correctly configure Network Address Translation (NAT)
13. Create and apply Access Control Lists (ACLs)
14. Create a Hierarchical Network Design

Subject Content

Sound Network Design Practices
Hierarchical Network Design Principles
Classless Routing
Single-Area Open Shortest Path First (OSPF) Protocol
Enhanced Interior Gateway Routing Protocol (EIGRP)
Switch Configuration
Spanning-Tree Protocol (STP)
Virtual Local Area Networks (VLANs)
Virtual Trunking Protocol (VTP)
Local Area Network (LAN) Aggregation & Redundancy
Wireless Local Area Networks (WLANs)
Scaling Internet Protocol (IP) Addresses
Wide Aare Network (WAN) Technologies
Point-to-Point Protocol (PPP)
Integrated Services Digital Network (ISDN) and Dial-on-Demand Routing (DDR)
Frame Relay

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/ Group Task	Mandatory
Practical	Maximum of 12 Lab Exercises at a maximum of 2hr per exercise	10	N	Group/ Individual	Y
Practical Exam	1 hour	20	N	Group/ Individual	Y
Multiple Choice	1 hour - closed book	20	Y	Individual	Y
Professional Task	Maximum 15 pages	50	Y	Individual	Y

Teaching Periods

Autumn (2025)

Penrith (Kingswood)
On-site
Subject Contact Sharon Griffith (https://directory.westernsydney.edu.au/search/name/Sharon Griffith/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=COMP3014_25-AUT_KW_1#subjects)

Sydney City Campus - Term 3 (2025)
Sydney City
On-site
Subject Contact Antoinette Cevenini (https://directory.westernsydney.edu.au/search/name/Antoinette Cevenini/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=COMP3014_25-SC3_SC_1#subjects)