COMP 1016 FOUNDATIONS OF NETWORKING AND CYBER SECURITY (WSTC)

Credit Points 10

Coordinator Kritika Gupta (https://directory.westernsydney.edu.au/search/name/Kritika Gupta/)

Description In our interconnected modern world, understanding computer networks is fundamental for future ICT professionals. This subject will equip you with the basics of computer networking and internet architecture, covering OSI and TCP/IP models. You will explore modern networking technologies, authentication methods, and basic cybersecurity principles. You will also gain hands-on experience designing and troubleshooting a simple LAN and subnetting a network. This subject will also begin to prepare you for industry-based networking certifications such as the CCNA.

School Computer, Data & Math Sciences

Discipline Networks and Communications

Student Contribution Band

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

Level Undergraduate Level 1 subject

Restrictions

Students must be enrolled in an existing College Diploma program listed below:

- 7188 Diploma in Culture, Society and Justice
- 7189 Diploma in Health Science
- 7190 Diploma in Business
- 7191 Diploma in Information and Communication Technologies
- 7192 Diploma in Building Design and Construction
- 7193 Diploma in Engineering Studies
- 7194 Diploma in Creative Industries and Communications
- 7195 Diploma in Arts
- 7196 Diploma in Science
- 7197 Diploma in Education Studies

Learning Outcomes

After successful completion of this subject, students will be able to:

1. Examine the foundational concepts, protocols, and architecture of computer networking and the internet.
2. Analyse the significance of OSI and TCP/IP models in computer networks, including networking devices in OSI layers 2 and 3.
3. Identify modern technologies and authentication methods in computer networking, and their role in managing access and addressing security concerns in organisations.
4. Evaluate basic cyber security principles used to protect networks and systems in organisations.
5. Design, construct, test, and troubleshoot a simple LAN, including the ability to subnet based on design criteria.

Subject Content

- Concepts of computer networking and internetworking.
- Internet architecture.
- An introduction to the operation of the major protocols used in computer networking.
- The OSI model, TCP/IP Protocol stack, and IP addressing.
- Understanding of the TCP/IP Protocol stack and its operation in data networks.
- Modern data communication and networking technologies.
- Introduction to cyber security
- Management and cyber security requirements of computer networks.
- Authentication methods and security concerns
- Introduction to Ethernet technologies and switching.
- Routing fundamentals and subnetting.

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	2 hrs x 6 practicals	40	N	Individual	Y
Numerical Problem Solving	2 hours	30	N	Individual	N
Quiz	1 hour	30	N	Individual	N

Teaching Periods

Spring Block 2 (2025)

Nirimba Education Precinct

On-site

Subject Contact Kritika Gupta (https://directory.westernsydney.edu.au/search/name/Kritika Gupta/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=COMP1016_25-SB2_BL_1#subjects)

Penrith (Kingswood)

On-site

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View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=COMP1016_25-SB2_KW_1#subjects)