COMP 3023 SYSTEMS AND NETWORK MANAGEMENT

Credit Points 10

Legacy Code 300166

Coordinator Antoinette Cevenini (https://directory.westernsydney.edu.au/search/name/Antoinette Cevenini/)

Description With the advent of the era of Internet of Things, the Internet has become a huge infrastructure in which various kinds of systems are running to deliver a plethora of network services. To ensure the efficient utilization of network resources (e.g., bandwidth) and the convenient access to network services, systems and networks must be managed in a proper way. Facing this demand, this subject covers the standards, protocols and skills pertinent to the management of systems and networks. Moreover, this subject introduces Software Defined Networking (SDN), a new paradigm for conducting network management with programmability, flexibility and scalability.

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 OR
COMP 3025

Assumed Knowledge

Students should be familiar with the fundamentals of computer networking and data communications. In particular, they should have a good understanding of the TCP/IP protocol suite, the OSI model, and current networking and internetworking technologies.

Learning Outcomes

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

1. Describe the basic components involved in network and system management.
2. Apply the network management architecture to an existing network.
3. Interpret data represented by the languages of ASN.1 or SMI.
4. Describe how an MIB is organised.
5. Explain how SNMPv1, SNMPv2 and SNMPv3 work, and apply them to manage a network.
6. Explain how RMON1 and RMON2 work, apply them to manage a network.
7. Configure Web servers, Email servers, DNS servers and DHCP servers.
8. Apply Software Defined Networking in campus networks and data centre networks.

Subject Content

Reviewing networking basics related to Network Management.
Ingredients of network management: agents, managers and management protocols.
Network Management Reference Models and Functionalities.
Abstract Syntax Notation One (ASN.1) and Structure of Management Information (SMI).
Management Information Base (MIB).
Simple Network Management Protocol: SNMPv1, SNMPv2 and SNMPv3.
Remote Monitoring: RMON1 and RMON2.
System configurations including web servers, email servers, DNS servers and DHCP servers.
Software Defined Networking (SDN): architecture, protocol and practice.

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
Quiz	0.5 hour per week	20	N	Individual	N
Report	1.5 hours per week	20	N	Individual	N
Report	5-10 pages	20	N	Individual	Y
Final Exam	1 hour	40	N	Individual	Y

Prescribed Texts

- There is no required textbook