Course Outline
This course will introduce students to methods, techniques and tools for the management of telecommunication systems and networks with specific examples from Internet and the public switched telecommunication networks. It will introduce the fundamental concepts of SNMP. Then it will examine network security, QoS (Quality of Service) management mechanisms and mobility management in IP networks. Finally, it examines the concepts of content distribution networks.

Assessment
Laboratory - 40%
Mid Term Exam 10% (week 6 during regular class time)
Closed book final exam 50% (Student must pass final exam to pass course)


Course Objectives:
At the end of the course students should:

a) Understand the principles of Network Management
b) Understand the encryption techniques currently used in the Internet
c) Understand the theory and concepts behind authentication protocols
d) Understand key objectives in designing a secured and managed network

Learning outcomes:
At the successful completion of the course the student should be able to:

a) Design secure and trusted web applications
b) Design network management systems
c) Explain the mathematical basis of high level encryption algorithms
d) Possess thorough knowledge of QoS management issues.

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Labs Assessments

Laboratory 1 (10%)
The objective of this laboratory is to get an understanding of the structure of SNMP MIBs. The laboratory requires JDK to be installed on the machine you are
using. This part of the laboratory has a weighting of 10% and has to be successfully completed before, proceeding to Laboratory two.

**Laboratory 2 (10%)**

The objective of this laboratory is to get an understanding of the SNMP protocol. To this end, you are required to write a simple manager which will enable the use of the SNMP commands, namely GET, SET-NEXT, SET and TRAP. Your manager will have to access MIB objects, e.g. Routing table, and information status of mobqos and display them on the screen.

This part of the laboratory also has a weighting of 10% and has to be successfully completed before, proceeding to Laboratory three.

**Laboratory 3 (20%)**

The objective of this laboratory is to build on the previous Laboratories to design and implement a complete management system for an "Intelligent" toaster. Your task is to (a) Define the MIB for the toaster (b) Using the MIB browser of Lab 1, to show that the MIB that has been created is valid (c) Develop the manager which will enable management of the toaster using Lab 2 as a guide. The manager should be able to set the toaster setting, and inform the manager when a job is completed. With this lab, you are required) give a demonstration of the working system. In addition you will be required to produce a short report which describes your design and implementation (3 pages), and provide all source on a disk with your report. This part of the laboratory has a weighting of 20%.

**Important Note:** It is assumed that all students are aware of the UNSW policy on academic misconduct and plagiarism. This can be found at https://my.unsw.edu.au/student/academiclife/assessment/AcademicMisconductStudentMisconduct.html