Course Outline and Objectives

The course introduces the underlying concepts and principles of modern computer data networks. A study of the layered communication model is undertaken, with a focus on concepts, functionality, and protocols used. The Internet will be used as our model of a communication network, and the use of TCP/IP will be emphasized. The network edge, network core and network access will be discussed as will the underlying physical media. More specifically, principles of the Application Layer, the Transport Layer, the Network Layer, and the Link Layer will be presented. A thorough understanding of routing, and issues of packet queuing and delay will be sought. Problems relating to Quality of Service (QoS) in the current Internet will be highlighted, and proposals to remedy such problems using advanced QoS techniques will be discussed. Both the wired Internet and the emerging wireless Internet will be addressed.

An important part of this course will be the required group assignment (see web site).

At the end of this course the student should possess a full understanding how modern computer networks function, as well as an insight into ongoing topical research issues

You will be asked to provide a report in groups (3 maximum – no extra marks for smaller groups) and provide a power-point presentation as part of your class assignment and participation. You must pass the final exam in order to pass class. Note: the quizzes will be short (15 minutes) and will be marked as pass/fail. Each pass will constitute 1 mark (a maximum of 5 marks can be accrued by class quizzes). Attendance and participation at all classes is requested.


The course will follow the above text closely. It is strongly recommended that you purchase a copy of this textbook. If you master the contents, the problem sets and the set questions of this text book - you will master the 9302 course! The text includes a free
subscription to a very useful companion web site - containing a host of valuable resources, such as on-line quizzes and illustrative Java applets.

1. Course Overview -The course consists of

1. Lectures using the textbook
2. Class Quizzes (about 15 minutes during class: weeks 2-10)
3. Group research paper study work including
   o a 30 minutes oral presentation (week 11-14)
   o a 15-20 page report

Papers that can be chosen for your group study will be posted on web site by week 3

2. Course Schedule

   Week 1: Course outline and introduction
   Week 2: Introduction to data networks and the Internet
   Week 3: The application layer
   Week 4: The transport layer (Principles)
   Week 5: The transport layer (Congestion Control)
   Week 6: The network layer (Principles)
   Week 7: The network layer (Routing)
   Week 8: The link layer (MAC protocols)
   Week 9: The link layer (Ethernet)
   Week 10: Wireless mobile networks
   Week 11-14: Group paper presentations

Student Assessment

To pass the subject, it is necessary to get 50% in the closed book examination. The assessment is further divided as follow:

- **Group paper: 15% of final mark consisting of:**
  o 20% literature review
  o 20% problem statement
  o 50% contribution of the paper
  o 10% presentation quality

- **Group PowerPoint Presentation: 5% of final mark consisting of:**
  o 50% for content
  o 50% presentation
- **Class Quizzes** 5% of final mark consisting of 1% for every class quiz passed (although there will be 9 class quizzes - you can only obtain a maximum of 5%)
- **Closed book final examination:** 75%

Please **make** an appointment for consultation at other times beyond standard class consultations through e-mail to **r.malaney@unsw.edu.au** (must be from a UNSW student account)

**Other Course Resources and outline.**
Please see web site [https://subjects.ee.unsw.edu.au/tele9302](https://subjects.ee.unsw.edu.au/tele9302) for other reading material.

**Plagiarism is strictly prohibited.** Please refer to UNSW’s plagiarism policy at [http://www.lc.unsw.edu.au/plagiarism/](http://www.lc.unsw.edu.au/plagiarism/).