Tele9756 Advanced Networking
Course Outline 2008

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Course Overview:

This course provides advanced knowledge of telecommunication networks currently being deployed or likely to be deployed in the future. It focus will be on material drawn from the recent research literature with a particular focus in the following three areas: network-to-network interface issues related to quality of service and reliability; cross-layer optimization issues related to network efficiency; and the control and management of mobility in networks.

Syllabus:
The course will largely cover areas of research related to network-to-network interface issues related to quality of service and reliability; cross-layer optimization issues related to network efficiency; and the control and management of mobility in networks. There will be no class text – rather the student will be given a list of research papers in the above areas for study and subsequent discussion in class.
**Course Objectives:**
At the end of the course students should:

a) Understand the theory, concepts and challenges of network interface issues
b) Understand the theory, concepts and challenges of network optimization issues
c) Understand the theory, concepts and challenges of network mobility issues

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

a) Understand and participate in ongoing networking research with particular focus in the three areas mentioned above

**Teaching Methods**
Lectures = 3hrs/week

**Lectures:**
You are strongly encouraged to attend all class lectures. There will be no formal notes handed out that covers all the class material in detail, and therefore you are requested to take your own notes during class. There may be occasional power-points put on the class web site for download but these will not be sufficient for you to cover the class material. The lectures will consist of some power-point presentations, discussion of material in prescribed research papers, and discussion of case studies, Some material presented in class will not be available for download from class web site. You are strongly encouraged to participate in class by interacting through questions and discussions of class material, and to prepare before class by reading relevant research papers ahead of time. There may be guest lecturers - expert in the field under study.

**Prescribed Texts:**
The class will not follow any text book as the study material is based on research papers. It will be assumed however, that you are already very familiar with standard networking material such as that given in classic networking text books such as


A list of research papers covered by the class will be finalized by week 3. Students will have the opportunity to influence the selected list of papers.

**Student Participation:**
For this course your participation in class is vital. There will be a short class quiz most weeks based on the previous week’s class material. In addition, you will be asked to present (in collaboration with a nominated partner) a review of some research paper related to the class material. Given the advanced nature of this
class it will be very difficult for you to keep up with the material unless you regularly attend class.

**Assessment Weighting:**

- **Final Examination (65%)**: The examination is of three-hour duration, covering all aspects of the course that have been presented in lectures, tutorials, and labs. This exam will assess both understanding and analytical skills. You must pass this exam to pass course.

- **Mid-Session Test (25%)**: The mid-session test will last 45 minutes and will be held in week 7. It will cover material covered in the course in week 1 to 6, and will test your conceptual understanding of this material, as well as your ability to apply the concepts to solving problems. This is compulsory test. There are zero marks for non-attendance at the mid-term.

- **Assessment (15%)**: each student will join with another student to form a group of two. This group will be charged with reviewing a research paper chosen from a list (to be given in class). The group will present a powerpoint presentation of the research paper (20 mins) as well as a 10 page written report on the paper.

- **Class Quizzes (5%)**: Short (15 min pass/fail) quizzes will be held at beginning of each class (you will be informed of quiz times in class). You will be tested on the previous week’s class material. Each quiz will be worth 0.5% of final class mark. You can obtain only a max of 5% for these quizzes.

- **Bonus marks**: Some bonus marks may be available (max 5%) for additional class participation, such as asking/answering good questions – details in class.

**Consultations**

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

**Other Course Resources.**

Please see class web site [https://subjects.ee.unsw.edu.au/tele9756](https://subjects.ee.unsw.edu.au/tele9756) for other material. It is expected and assumed that you will check this web site at least once per week for important class announcements.

**Plagiarism is strictly prohibited.**