

# COMP 7810 Computer Networks

## 09R2 (January – April 2009)

**Instructor:** Dr. Yanni Ellen Liu, E2-404 EITC, [yliu@cs.umanitoba.ca](mailto:yliu@cs.umanitoba.ca), 474-9740

### Course Description

This course is intended for students who are interested in performance evaluation of computer networks. We first introduce the major performance evaluation techniques commonly used in networks research, with emphasis on discrete event simulation and output analysis. We next study selected topics from state-of-the-art literature in computer networks research, e.g., emerging transport-layer protocols and network traffic characterization, security and performance in cognitive radio networks, and others. The course mainly consists of lectures and student presentations. In addition, students are required to complete a course project comprising an in-depth study of a selected topic of interest.

### Pre-Requisites

Operating Systems and Computer Networks at the undergraduate level (074.3430 and 074.3720 or equivalents). Good computer programming skills are required.

### Course Web Page

<http://www.cs.umanitoba.ca/~comp7810>

### Course Outline

The following topics will be covered in lectures:

- Computer networks review
- Discrete event simulation and output analysis
- Emerging transport-layer protocols and network traffic characterization
- Security and performance in cognitive radio networks
- Other selected topics

### Course Materials

Lecture notes and selected papers will be used instead of a textbook. These materials will be posted on the course web page. Some reference books will be put on reserve in the Science & Technology library.

### Organizational Meeting

Wednesday, January 7, 2009, 11am – 12:30pm, E2-461 EITC

## **Classes (tentative)**

Wednesday, 1 - 4pm, E2-525 EITC

## **Evaluation**

15% Assignments:           There will be 2 to 3 assignments worth a total of 15%  
15% Midterm test:         There will be a closed-book in-class midterm test  
20% Presentations:        There will be 2 to 3 presentations depending on enrolment  
50% Project

## **Assignments**

The assignments will be on computer networks review and discrete event simulation. No late assignments will be accepted.

## **Presentations**

The presentation topics should be selected in consultation with the course instructor. A list of topics and papers will be provided to students.

## **Course Project**

Students are required to carry out an in-depth study on a selected topic of interest. The project topic should be selected within the first three weeks of the term, in consultation with the course instructor. A list of suggested projects will be provided.

## **Academic Dishonesty**

**All submitted work must be your own.** This includes all four elements in the above "Evaluation" section. In particular, after reading the literature, in your submitted work, you **must** summarize the findings **using your own words**. The University of Manitoba regards acts of academic dishonesty in assignments, and other course work as serious offences and may assess a variety of penalties depending on the nature of the offence. Acts of academic dishonesty include, but are not limited to, copying from another individual when completing assignments and other course work, copying from published papers or other people's work without acknowledgement. You are required to read the following web site at Faculty of Science regarding academic dishonesty: <http://umanitoba.ca/science/student/webdisciplinedocuments.html>. A signed copy of the honesty declaration form **MUST** be provided at the start of the term for all submitted work during this course. The honesty declaration form can be found from the above web site.