Computer Networks	CIS3210
Classes	MWF 11:30–12:20 MacKinnon 228
Labs	W 3:30–4:20 MACK 227
Instructor	**Wlodek Dobosiewicz** (Reynolds 215), ext. 53216 dobo@cis.uoguelph.ca
Office Hours	MWF 12:30am–1:20pm
Prerequisites	CIS3110.
Textbook	Kurose and Ross *Computer Networking* (Addison–Wesley)
Class notes	www.cis.uoguelph.ca/~dobo
Dishonesty	results in an "F" (not negotiable)

Check the calendar for special accommodations and the definition of academic misconduct.

Precondition

Students taking CIS3210 are not expected to have any background in computer networking, which implies that, if they do, they may get bored at the beginning of the course. However, they are expected to be mature computer science students, implying that they:

- can design, implement and test moderately-sized programs (<1000 lines) in C, C++ or Java.
- are familiar with the basic network applications (WWW, e–mail, telnet, ftp, browsing).
- understand basic probability theory.

Postconditions

Students who complete successfully CIS3210 can take part in a conversation on networking issues, write a simple server, implement a reliable protocol; they will also understand the basics ofTCP, UDP and IP.

Description

This course covers the structure of the Internet and other computer networks, from the application layer down to the network layer. Emphasis is on software protocols, routing, hardware solutions as well as performance analysis. A brief introduction to network applications ("layer 7") is given at the beginning.

Contents

- Introduction to network terminology.
- Applications: packages and protocols (HTTP, ftp, etc.).
- Session layer. Client–server architecture.
- Transport layer I: connection–oriented protocol (TCP).
- Transport layer II: connectionless protocol (UDP).
- Congestion and congestion control.
- Network layer and routing: IP.
- A brief tour of the Data Link Layer.
- Quality of service.
- Network security.
- Wireless networks.

Grading

Assignments and exams		
Programming assignment 1	Friday, October 2	10%
Programming assignment 2	Friday, October 23	20%
Midterm	Friday, October 30	20%
Programming assignment 3	Friday, November 27	20%
Final	?	30%

All the assignments involve programming. Assignments are individual.

Reading materials

- B. Forouzan, *Data Communications and Networking*.
- W. Stallings, *Data and Computer Communications*.
- D. Comer, *Computer Networks and Internets*.
- Many other books and web postings are readily available.

Syllabus revised September 11, 2009 by W. Dobosiewicz