

<b>Telecommunications</b> <b>CIS4210</b>	
Classes	MWF 1:30–2:20 MacKinnon 228
Labs	W 4:30 MACK 227
<b>Instructor</b>	<b>Wlodek Dobosiewicz</b> (Reynolds 215), ext. 53216 <a href="mailto:dobo@cis.uoguelph.ca">dobo@cis.uoguelph.ca</a>
<b>Office Hours</b>	MTW 11:00am–12:00am
<b>Prerequisites</b>	<b>CIS3210.</b>
<b>Textbook</b>	None
Class notes	<a href="http://www.cis.uoguelph.ca/~dobo">www.cis.uoguelph.ca/~dobo</a>
Dishonesty	results in an “F” (not negotiable)

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

**Description**

This course covers the low-level and hardware-oriented aspects of computer communications, specifically the physical, link, and network layers. It includes basic telecommunication technology, local area networks, low level protocols, switching technologies, wireless and mobile networking, data and stream compression, and error coding.

**Precondition**

A successful student will have a reasonable knowledge of programming and of the relevant part of the material covered in CIS2030 (computer components, data representation, etc.). Understanding of basic physics (electricity, optics) and of basic mathematics is a plus.

**Postconditions**

Students who complete successfully CIS4210 will be knowledgeable about network technologies and signalling issues.

The assignments will teach students some elementary simulation skills.

## Contents

- Introduction to network terminology.
- Data and signals.
- Encoding.
- Transmission.
- Error detection and correction.
- Data Link Layer part 1: wired local area networks.
- Data Link Layer part 2: wireless local area networks.
- Circuit and packet switching.
- Switches and routers: hardware issues.
- Routers: functionality.
- Audio and video compression and transmission.
- Digital telephony.

## Grading

Assignments and exams		
Programming assignment 1	Friday, January 30	20%
Programming assignment 2	Friday, February 27	20%
Project	Friday, March 27	30%
Take-home final	April 6–13	30%

The assignments involve extensive programming.

## Reading materials

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

Syllabus revised December 5, 2008 by W. Dobosiewicz