CIS*3210 Computer Networks

Fall 2018

School of Computer Science

1 INSTRUCTIONAL SUPPORT

Section 01

Instructor: Dr. Denis Nikitenko
Office: Reynolds 3322
Email: cis3210@socs.uoguelph.ca
Office hours: Monday, Friday 1:00PM - 2:30PM. **Note**: office hours may be updated during the semester to better accommodate student demand and instructor schedule.

Pre-requisites: CIS*3110
Credit Weight: 0.5

Teaching Assistant:
TBA
Email: cis3210@socs.uoguelph.ca
Office Hours: See lab time below

Timetable

Lectures:
Monday, Wednesday, Friday 10:30AM - 11:20AM, MCKN 121

Lab:
Monday 01:30PM - 02:20PM, MCKN, Room 121

Unless otherwise stated, the lab will be used for advising and consulting with the Teaching Assistant.

2 LEARNING RESOURCES

2.2 Course Website

Course material, news, announcements, and grades will be regularly posted to the CIS*3210 website which can be found at https://moodle.socs.uoguelph.ca. You are responsible for checking the site regularly.

- Lecture Information: Selected notes will be posted on the course website as instructors have time to make them available. You are expected to take your own notes during lecture.
- Labs and Tutorials: Selected tutorial and lab materials will be available on the course website.
- Assignments: Assignment descriptions will be posted on the course website. Assignments are submitted via the course website.

2.3 Required Textbook

Computer Networking: A Top-Down Approach, 7th ed. J. Kurose and K. Ross

2.4 Calendar Description

This course covers the high-level (protocol) oriented aspects of computer networks, specifically: application, session, transport and network layers. It includes the Internet, socket-level programming, multimedia and quality of service issues. The hardware aspects (switches, LANs, modems, transmission paths) are only covered at a functional level.

The Academic Calendars are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs: http://www.uoguelph.ca/registrar/calendars/index.cfm?index

3 ASSESSMENT

3.1 Dates and Distribution

Assessments
Assignments (40%: 4 @ 10% each) - Assignment 1: October 1 - Assignment 2: October 22 - Assignment 3: November 12 - Assignment 4: November 26 Midterm exams (30%: 2 @ 15% each): October 10 and November 5 Final exam (30%) - date and room TBA

3.1.1 Final grade calculation

The final grade is the weighted sum of all assessments shown above, using the weights indicated in the list above.

3.2 Course Grading Policies

Development environment: Systems and software are provided in the lab and the SoCS Linux servers for use in assignments. Students who choose to develop their assignments on other systems and/or with other versions of software are fully responsible for ensuring compatibility with the SoCS Linux server environment for marking purposes.

Late Assignments: All assignments are due at 9am on the due date. Late assignments will be accepted for 24 hours after the deadline and penalized at 2% per hour. Assignments that are more than 24 hours late will **not** be accepted, and will automatically receive the grade of **zero** (0). See below for compassionate exceptions.

Compiler errors/warnings: Program code which does not compile will not be accepted for marking and a grade of **zero** (0) will be assigned. Code that does not compile "clean" will lose marks for compiler warnings. Code **must** compile and run on the SoCS servers.

Submission errors: Failure to submit assignments correctly (e.g., incorrect file names, faulty/missing makefile, etc.) will result in a mark penalty.

Regrades: Students may request a regrade of an assignment or midterm exam if the marker has made an error in grading. The original submission will be entirely regraded and a new mark will be assigned. It is possible for a mark to go down, go up, or remain unchanged as a result of a regrade. Students must request a regrade via Regrade link on the course website within 5 calendar days of receiving the assessment grade.

Missed Assessments: If you are unable to meet an in-course requirement due to medical, psychological, or compassionate reasons, please make an appointment to meet your course instructor. Please see below for specific details and consult the undergraduate calendar for information on regulations and procedures for Academic Consideration: http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml

Note: ***There are no makeup assignments or midterm exams.*** If you miss an assessment and have documentation to show that you are eligible for Academic Consideration, the weight of the assessment will be moved to the final exam.

Accommodation of Religious Obligations: If you are unable to meet an in-course requirement due to religious obligations, please email the course email address within two weeks of the start of the semester to make alternate arrangements. See the undergraduate calendar for information on regulations and procedures for Academic Accommodation of Religious Obligations:
http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-accomrelig.shtml

3.3 Course Learning Outcomes

1. Define and describe the layered structure of a typical networking architecture.
2. Describe the components of IPv4 and IPv6 protocols, including addressing, routing and forwarding.
3. Evaluate error detection/correction mechanisms in different network contexts.
4. Implement applications using reliable and unreliable socket communication.
5. Develop distributed applications that exchange data and employ serialization techniques
6. Describe common networking security issues, as well as the methods for mitigating them.

4 TEACHING AND LEARNING ACTIVITIES

4.1 Lecture Schedule

Lectures	Lecture topics	Tests	Assignments
Week 0 (Sept 7)	Course Overview		
Week 1 (Sept 10, 12, 14)	Internet protocol stack; networking fundamentals		
Week 2 (Sept 17, 19, 21)	Network programming fundamentals		
Week 3 (Sept 24, 26, 28)	Application layer protocols: case studies		
Week 4 (Oct 1, 3, 5)	Concurrency and network programming		Assignment 1
Week 5 (Oct 10, 12)	Transport layer	Midterm 1	
Week 6 (Oct 15,17,19)	Transport layer		
Week 7 (Oct 22,24,26)	Network layer		Assignment 2
Week 8 (Oct 29, 31, Nov 2)	Network layer		
Week 9 (Nov 5, 7, 9)	Network security fundamentals	Midterm 2	
Week 10 (Nov 12,14,16)	Network security fundamentals		Assignment 3
Week 11 (Nov 19,21,23)	Link layer		
Week 12 (Nov 26,28, 30)	Broadband Networks		Assignment 4

4.4 Important Dates

Friday September 7: First day of class
Monday October 8: No Classes (rescheduled to November 30)
Friday November 2: 40th Class Day - last day to drop
Friday November 30: Last day of CIS*3210
Friday December 14: Last day of exams

5 ROLES AND RESPONSIBILITIES

5.1 Communication & Email Policy

Major announcements will be posted to the course website and the discussion forums. It is your responsibility to check the course website regularly. As per university regulations, all students are required to check their <mail.uoguelph.ca> e- mail account regularly: e-mail is the official route of communication between the University and its students.

5.2 Recording of materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, classmate or guest lecturer. Material recorded with permission is restricted to use for that course and may not be posted on any public space unless further permission is granted.

5.3 Instructor's Role and Responsibility to Students

The instructor's role is to develop and deliver course material in ways that facilitate learning for a variety of students. Selected notes will be made available to students on the course website but are not intended to be stand-alone. During lectures, the instructor will expand and explain the content of notes and provide example problems that supplement posted notes. Scheduled classes will be the principal venue to provide information and feedback for exams and assignments.

5.4 Students' Learning Responsibilities

Students are expected to take advantage of the learning opportunities provided during lectures, labs and help sessions. Students, especially those having difficulty with the course content, should also make use of other resources recommended by the instructor. Students who fall behind due to illness, work, or extra-curricular activities are advised to keep the instructor informed as early as possible. This will allow the instructor to recommend extra resources in a timely manner and/or provide consideration if appropriate.

6 ACADEMIC INTEGRITY

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. All students who take a SOCS course must pass the **Academic Integrity Self Test.**

For educational purposes, instructors impose conditions on assignments that may limit students' permission to collaborate with others or to utilize external sources (including, but not limited to, software, data, images, text, etc.). Any permitted utilization must be done with proper references. Aiding and abetting is a punishable offence; students must be careful not to help others commit offences by giving out solutions or providing to access computer accounts. Instructors may use automated tools to detect possible cases of academic misconduct.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:
http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml

The SOCS Academic Integrity Unit:
http://moodle.socs.uoguelph.ca/course/view.php?id=2 Login with your central login credentials. The key to use is "imhonest".

7 ACCESSIBILITY

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required, however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance, and not later than the 40th Class Day.

More information: www.uoguelph.ca/sas