

CS 4457A / 9657A: Computer Networks II

The University of Western Ontario Course Outline – Fall 2017

1. General Course Information

Course Information

CS 4457A / 9657A: Computer Networks II

Tuesday: 9:30am – 12:30pm, NCB-114

Prerequisites

Computer Science 3305A/B, Computer Science 3357A/B

Although this course is primarily designed for the senior year undergrad and graduate students who have background in computer networks and operating systems (such as 3357A/B, 3305A/B) it also welcomes interested students from other relevant disciplines such as systems engineering, machine learning, statistics, and Combinatorics & Optimization. If the students do not have background in the area of communication networks they are encouraged to discuss their interest with the course instructor to evaluate their eligibility for this course.

2. Instructor

Name – Dr. Anwar Haque

Office Location – Middlesex College: MC 415

Phone Number – 519-661-2111 Ext. 87428

E-Mail – ahaque32@uwo.ca

Office Hours (Instructor): Tuesday 12:30pm – 1:30pm

Office hours (Teaching Assistants- TAs): To be announced on the course website.

3. Course Description

The Internet and other modern communications services provided by telco companies (e.g., Bell Canada, Telus, Rogers) are a part of today's modern society. Today's Telco industry serves as a technological backbone for any services and infrastructure one could imagine e.g., content delivery, smart homes, e-health.

This course will introduce some of the core technical functionalities within a Telco industry; introduce the core challenges in these units, and how these challenges could be explored. Students will gain real life knowledge and experience through various research projects, discussion, and assignments. Undergraduate students will be mainly involved in designing and developing a tool /

prototype to address a specific high-value Telco industry functional problem. Graduate students will be mainly involved in exploring a real world complex Telco research topic and working on a full fledge research paper that addresses a specific research problem. In addition, this course is expected to assist the graduate students (who yet to identify their thesis topic) to find an interesting real-world research problem that could be a good fit for their thesis.

4. Course Materials

Required Textbook: No required text book, but the list of research reading papers and relevant materials will be provided on the course website.

Lecture notes: Lecture notes will be made available on the course website prior to each class.

Course Website: <http://www.csd.uwo.ca/Courses/CS4457A>

Students should check the course website and OWL (<https://owl.uwo.ca>) on a regular basis for news and updates. Course website will be the primary method by which information will be disseminated to all students in the class. Students are responsible for checking the course website on a regular basis.

E-mail contact: We will occasionally need to send email messages to the whole class, or to students individually. Email will be sent to your ITS email address (depending on which one comes with the class list). You must make sure that you read your email on ITS on a frequent and regular basis, or have it forwarded to an alternative email address if you prefer to read it there. However, you should note that email at ITS (your UWO account) and other email providers such as hotmail.com or yahoo.com may have quotas or limits on the amount of space they can use. If you let your email accumulate there, your mailbox may fill up and you may lose important email from your instructors. Losing email that you have forwarded to an alternative email address is not an excuse for not knowing about the information that was sent.

5. Methods of Evaluation

Components of the course grade and their weighting are as follows:

Course Component	Student Group	Description	Grade weight %
Research Paper Review (Assignments)	Undergrad / Grad	2 x research / technical paper review. Individual effort. See note #1 below	$2 \times 10\% = 20\%$
Project Proposal	Undergrad	2-3 pages project proposal. Individual or Group effort. See note #2 below	$15\% + 10\% = 25\%$ (report + presentation)
Research Project Proposal	Grad	2-3 pages research project proposal. Group effort. See note #3 below	$15\% + 10\% = 25\%$ (report + presentation)
Final Project	Undergrad	10-15 pages project report. Individual or Group effort. See note #4 below	$25\% + 20\% = 45\%$ (report + presentation)
Final Research Project	Grad	10-15 pages research paper. Group effort. Pls see note #5 below	$35\% + 10\% = 45\%$ (report + presentation)
Class Participation	Undergrad / Grad	Individual in-class participation	10%

Note:

1. All assignments (i.e., research paper review) / project proposals / reports must be submitted through OWL by the deadline specified in the course website. The penalty for missed assignments is 20% for each additional day.
2. Undergrad Project Proposal: Undergrad students are expected to write a project proposal to outline their final project. This proposal paper could be 2-3 pages that includes (a) the specific technical problem that students planning to explore; (b) importance / significance of the proposed project; and (c) how they plan to develop the solution including the software / programming tools

that to be used for developing the prototype. Undergrad students are encouraged to discuss their project ideas with the instructor prior to their project proposal submission. Although both the individual or group project are allowed, students are highly encouraged to work in a group (with other undergraduate students) for their projects.

3. Grad Research Proposal: Graduate students are expected to write a research proposal to outline their final research paper. This proposal paper could be a 2-3 page that includes (a) the specific research problem that students planning to explore; (b) related work (other research works in this area); (c) scientific importance / significance of the proposed research plan (why this is an important area to explore); and (d) a brief outline on how they plan to approach the problem.

4. Undergrad Final Project: Undergraduate students are expected to work on designing and developing a prototype (and a project report of 8-10 pages). This project report should include (a) the problem statement; (b) usefulness of this tool (i.e., which telco problem/s this tool is aiming to solve); and (c) detailed description of the proposed solution including a brief overview of how to use the prototype.

5. Grad Final Research Project: Based on the research proposal submitted by the graduate students they are expected to work on a full fledge research paper of 10 to 15 pages in length. This research paper should include (a) the problem statement; (b) relevant work, (c) technical / scientific contribution - why the proposed research will be interesting to the scientific community; (d) detailed description of the proposed idea/solution/framework; (e) validation of the proposed solution through some analysis; and (f) brief discussion on the main contribution of this paper in relevance to major research works done so far.

All assignments/reports are due by midnight (electronically) of the due date. Every effort will be made to have assignments marked and handed back within 2 weeks of the hand-in date, preferably sooner.

Guideline on research paper review, research proposal, final project, and presentations will be discussed in class, and necessary information will be available on course website.

Undergraduate students must submit their final project (report and presentation) by Dec 8th (last day of Fall term class). Graduate students will be allowed to submit their final research paper by Dec 22nd

6. Accommodation and Accessibility

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or supporting documentation to the Academic Counselling Office of your home faculty as soon as possible. If you are a Science student, the Academic Counselling Office of the Faculty of Science is located in WSC 140, and can be contacted at scibmsac@uwo.ca.

For further information, please consult the university's medical illness policy at http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf

7. Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy, <http://www.uwo.ca/its/identity/activatenonstudent.html>, the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

Students must write their essays and assignments in their own words. Whenever students take an idea, or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence.

If assignments are to be individual assignments: You may discuss approaches to problems among yourselves; however, the actual details of the work (assignment coding, answers to concept questions, etc.) must be an individual effort.

The standard departmental penalty for assignments that are judged to be the result of academic dishonesty is, for the student's first offence, a mark of zero for the assignment, with an additional penalty equal to the weight of the assignment also being applied. You are responsible for reading and respecting the Computer Science Department's policy on Scholastic Offences and Rules of Ethical Conduct at the following Web site
http://www.csd.uwo.ca/current_students/undergraduate_students/scholastic_offences.html

The University of Western Ontario uses software for plagiarism checking. Students may be required to submit their written work and programs in electronic form for plagiarism checking.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>). Computer-marked, multiple-choice tests and exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

8. Support Services

The policy on Accommodation for Students with Disabilities can be found here:

www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_disabilities.pdf

The policy on Accommodation for Religious Holidays can be found here:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to your Dean's office as soon as possible and contact your instructor immediately. It is the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. In the event of a missed final exam, a "Recommendation of Special Examination" form must be obtained from the Dean's Office immediately. For further information please

see:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf

Learning-skills counsellors at the Student Development Centre (<http://www.sdc.uwo.ca>) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Students who are in emotional/mental distress should refer to Mental Health@Western (http://www.health.uwo.ca/mental_health) for a complete list of options about how to obtain help. Additional student-run support services are offered by the USC, <http://westernusc.ca/services>.