

# CS 4457A / 9657A: Computer Networks II

## The University of Western Ontario Course Outline – Fall 2018

### 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.

## 5. Methods of Evaluation

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

Table 1: Course grade components and weighting

Course Component	Student Group	Description	Grade weight %
Research Paper Review (Assignment) Report Due date: Oct 14	Undergrad / Grad	1 x research / technical paper review. Individual effort. See note #1 below	15% + 5% (report + presentation)
Project Proposal Report Due date: Oct 21	Undergrad	2-3 pages project proposal. Group effort. See note #2 below	20%
Research Project Proposal Report Due date: Oct 21	Grad	2-3 pages research project proposal. Group effort. See note #3 below	20%

Final Project Report Due date: Dec 7	Undergrad	10-15 pages project report. Group effort. See note #4 below	30% + 20% = 50% (report + presentation)
Final Research Project Report Due date: Dec 21	Grad	10-15 pages research paper. Group effort. Pls see note #5 below	35% + 15% = 50% (report + presentation)
Class Participation	Undergrad / Grad	Individual in-class participation	10%

Note:

1. Assignment (i.e., research paper review) / project proposals / final project reports must be submitted through OWL by the deadline specified in the course website. All assignments/reports are due by midnight (electronically) of the due date. Every effort will be made to have assignments/reports marked and handed back within 2 weeks of the hand-in date, preferably sooner.

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. Students are required 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 papers. 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. Students are required to work in a group (with other graduate students) for their projects.

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 fledged 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.

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 7<sup>th</sup> (last day of Fall term class). Graduate students will be allowed to submit their final research paper by Dec 21<sup>st</sup>.

## **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 NCB 280, and can be contacted at [scibmsac@uwo.ca](mailto: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](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf)

If you miss the Final Exam, please contact your faculty's Academic Counselling Office as soon as you are able to do so. They will assess your eligibility to write the Special Exam (the name given by the university to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (see [http://www.registrar.uwo.ca/examinations/exam\\_schedule.html](http://www.registrar.uwo.ca/examinations/exam_schedule.html)).

## **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](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf).

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>)

## **8. Support Services**

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Student Accessibility Services (SAS) at 661-2147 if you have any questions regarding accommodations.

The policy on Accommodation for Students with Disabilities can be found here: [http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_disabilities.pdf](http://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](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.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](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>.

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