

Western University
Department of Computer Science
CS9668/4438 Internet Algorithmics
Course Outline – Fall 2018

Course Description

This course focuses on the study of algorithms used for solving problems that arise from the design and use of wide-area networks, such as the Internet. Among the topics that we might cover are:

- Computer networks and internets
- Distributed algorithms for network problems
- Peer-to-peer systems
- The Web Graph and searching for information in the Web
- Caching and prefetching
- Load balancing, service placement and clustering
- Game Theory

Prerequisites

- A course on algorithm design and data structures.
- Knowledge of Java or C

Instructor

Roberto Solis-Oba

Office: MC417

Email: solis@csd.uwo.ca

Lectures: Friday 1:30 pm - 3:30 pm in MC105b.

Office hours: Monday 3:30 pm - 5:00 pm.

Bibliography and Lecture Notes

- Computer Networks and Internets, D. Comer, Pearson.
- Distributed algorithms for message-passing systems, M. Raynal, Springer.
- Distributed algorithms, N. Lynch, Morgan Kaufmann.
- Research papers.

Relevant chapters of above books and research papers will be posted in OWL.

Course Website

<http://www.csd.uwo.ca/courses/CS9668a>

Student Evaluation

Graduate students:

- 3 Assignments worth 50% of the final mark
- Final Project, worth 50% of the final mark.

Undegraduate students:

- 5 Assignments worth 100% of the final mark

Assignments and Final Project Topics

Assignments and final project topics will be made available on the course's web site. The availability of assignments will be announced in class and/or via e-mail. Students are responsible for checking their e-mail on a regular basis.

The late penalty for assignments is $[2.5^i]$ (2.5 to the i -th power, rounded to the nearest integer), where $i > 0$ is the number of days you are late. So if you hand in your assignment 1 day late, you will be penalized 3%, a delay of 2 days will decrease your grade by 6%, 3 days is penalized 16% and 4 days takes 39% off your grade. You cannot be more than 4 days late.

Extensions will be granted only by the course instructor. If you have serious medical or compassionate grounds for an extension, you should take supporting documentation to the office of the Dean of your faculty, who will contact the instructor.

Appeals of Assignment Marks

Appeals of assignment marks should be addressed to the T.A. first. If you and the T.A. cannot agree, then please discuss the situation with the lecturer.

Appeals **must occur within 1 week** from the first day that the marked assignments were made available to students. After that 1 week period has gone by, no more appeals will be considered.

Accommodation and Accessibility

Note that if documentation (medical or otherwise) is required, it can only be collected by the student's Dean's Office/Academic Counselling unit.

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. For further information, please consult the university's medical illness policy at

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

If a student receives academic accommodation, depending on the circumstances the instructor will determine whether the missed components will be excused (so that the completed components will be re-weighted) or if deadlines will be extended for submitting the missing academic work. Accommodation for any work missed should be requested to the student's Dean's Office/Academic Counselling unit.

Ethical Conduct

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 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.

All assignments are 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. Assignments that are judged to be the result of academic dishonesty will, for the student's first offence, be given a mark of zero 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

http://www.csd.uwo.ca/current_students/undergraduate_students/scholastic_offences.html

and Rules of Ethical Conduct

http://www.csd.uwo.ca/current_students/undergraduate_students/rules_of_ethical_conduct.html

We use plagiarism checking software to compare student assignment submissions.

Email Contact and OWL

Students should check OWL (<http://owl.uwo.ca>) and the course's website on a regular basis for news and updates. These sites and email are the primary methods by which information will be disseminated to all students in the class. **Students are responsible** for checking OWL, the course's website and their email messages on a regular basis.

Email messages will be sent to the UWO email address assigned to students by Information Technology Services (ITS), i.e. your email address @uwo.ca. It is each student's responsibility to read this email on a frequent and regular basis, or to have it forwarded to an alternative email address if preferred. See the ITS website for directions on forwarding email.

Students must use their Western (@uwo.ca) email addresses when contacting the instructor. If you send email to the instructor from a commercial account, send a carbon copy (cc) to your UWO email address. The instructors will respond to your UWO address.

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 email address. It is the responsibility of the account holder to ensure that email received from the University at his/her official university address is attended to in a timely manner.

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

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

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

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>.

Please consult the Web site for Registrarial Services (<http://www.registrar.uwo.ca>), and for USC (<http://westernusc.ca/services>) for a list of student support services and programs.