



Department of Computer Science

CS4490Z/4460Z-Thesis/Bioinformatics Thesis

CS3380F/G/Z – Project

Course duration: September to April (of the following year)

Course Outline - Fall 2021 - Apr 2022

Class time: 8:30 - 9:30am, Mondays, SSC 2028.
(See later below for specific class meeting days)

Course Instructor

Instructor: Nazim Madhavji
Office: MC 381
Office Hours: emails, anytime
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Course Description

CS4490Z/4460Z

(For CS3380F/G/Z, please see later below)

This course provides students with an opportunity to work on a project outside a particular course setting, with a faculty member at Western University as supervisor. The supervisor can be from any department at Western. Supervisors from other universities will be considered on a case-by-case basis but will require a Western professor as a proxy.

The topic of the project can be in any field covered by the Dept. of Computer Science for CS4490Z theses (and can include applications from subjects outside computer science, e.g., engineering, law, and social sciences).

Students enrolled in bioinformatics (CS4460Z) are expected to focus on topics from the health domain.

The objective of the course is to give the student an opportunity to undertake a project which is less structured than assignments and/or which requires the student to apply knowledge and skills learned from many different courses. It is also an opportunity for the student to demonstrate skills in independent study and research.

The anticipated learning outcomes:

- Student gets to experience how to conduct research. This includes such issues as understanding the problem context; understanding related literature; defining research questions; learning about research methodologies to be used; executing the research methodologies; creating a novel system or investigating a phenomenon from observations or data; performing comparisons with related literature; drawing conclusions; performing threat analysis; etc.
- Experience with writing a research proposal, and with writing a thesis.
- If working with a supervisor from a non-computer science (CS) area (e.g., health, sciences, social sciences, business, etc.) then the student should experience interdisciplinary research (e.g., creating or implementing a new algorithm applicable to non-CS application domain).
- Experience with presenting and defending one's thesis.

The suffix Z denotes that this course is an essay course, i.e., it has a significant writing component. There are progress reports, final report, as well as a presentation of the work accomplished as part of a "conference" at the end of the course.

Regulations

- The default measure is that projects will be carried out individually. However, the Dept. reserves the right to take exceptional measures. Student requests for group thesis will not be entertained.
- Thesis supervisor can be changed only PRIOR to an agreement is made with the supervisor. The supervisor-student relationship is bound once the agreement has been made.
- Supervisor selection is an asynchronous process. Any student can contact any supervisor independently.
- Student acceptance by a supervisor is the prerogative of the supervisor; the course instructor will not interfere in that process.
- The thesis topic can be changed (**only with the same supervisor**) any time PRIOR to the submission of the thesis proposal, provided that:
 - there is mutual agreement between the supervisor and the student

- a new topic is openly communicated to the course coordinator (me) **BY THE SUPERVISOR in writing.**

However, note that the **proposal deadline** will *not* change.

- There are other specific issues to do with physical presence for final presentation, late submission, etc. These are not listed here.
- Further regulations (implicit or discovered in real-time): There may be other issues that may crop up that are not listed above. The course instructor reserves the right to make the final decision on those issues and they may not be appealed.

Prerequisites

CS4490Z:

(2.0 courses from: Computer Science 3305A/B, 3307A/B/Y, 3331A/B, 3340A/B, 3342A/B, 3350A/B; plus registration in the Honors Specialization in Computer Science or the Combined Honors BSc Computer Science/Juris Doctor (JD) Program) or (2.0 courses from: Computer Science 3305A/B, 3307A/B/Y, 3319A/B, 3331A/B, 3340A/B, 3357A/B; plus registration in the Honors Specialization in Information Systems)

CS4460Z:

Computer Science 3331A/B and 3340A/B; plus 1.5 courses from: Biochemistry 2280A, Chemistry 2213A/B, Computer Science 3319A/B, 3346A/B; plus registration in an Honors Specialization in Bioinformatics.

Antirequisites: Computer Science 3380F/G/Z, 4460Z (if taking 4490Z), 4470Y, 4480Y, 4490Z (if taking 4460Z)

Note: *Unless you have either the prerequisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.*

CS3380F/G/Z

This is a supervised study involving a research paper, or the design of or development of a software project.

Antirequisite(s): [Computer Science 4460Z](#), [4480Y](#), [4490Z](#).

Prerequisite(s): Permission from the department, plus: [Computer Science 2212A/B/Y](#) and registration in the Specialization or Major in Computer Science. To be permitted into this course, the student must have found a topic and a willing departmental supervisor before the end of the add period.

Regulations active for this course mirror those listed under cs4490/cs4460 above.

Course Texts

There are no required texts for this course. One suggested reference, available in the university library, is:

- Dawson, Christian W., [Projects in Computing and Information Systems: a Student's Guide, Second Edition](#); Pearson Education Limited, 2009.

Course Webpage and OWL

The CS4490Z/CS4460Z/CS3380F/G/Z webpage is accessible through the departmental website. Class and project information and announcements will be posted on OWL. You are responsible for reading this information on a regular basis.

Computing Facilities

Each student will have access to an account on the Computer Science Department senior undergraduate computing facility, GAUL. In accepting the GAUL account, a student agrees to abide by the department's [Rules of Ethical Conduct](#)

Note: *After-hours access to certain Computer Science lab rooms is by student card. If a student card is lost, a replacement card will no longer open these lab rooms, and the student must bring the new card to the Systems Group. Likewise, if a student card ceases to provide access where it should, it should be brought to the Systems Group as well.*

E-Mail Contact

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

However, you should note that e-mail at ITS (your UWO account) and other e-mail providers may have quotas or limits on the amount of space they can use. If you let your e-mail accumulate there, your mailbox may fill up and you may lose important e-mail from your instructors. Losing e-mail that you have forwarded to an alternative e-mail address is not an excuse for not knowing about the information that was sent.

Wherever you receive e-mail, be sure to configure your spam filter to allow e-mail from the instructor's e-mail address given above. Otherwise, important messages could get trapped

by your spam filter and missed. This is also not an excuse for not knowing about information that has been sent.

Classes Schedule and Projects

There will be classes only as announced (typically on OWL) by the instructor. It is anticipated that most of the communication between students and the course instructor will be done by email or in person.

Due dates for various deliverables and the weights are indicated in the table below.

(Note: schedule subject to change)

Date	Activity/Event/Deliverables	Weight %
13 Sept., 2021	CLASS: Course introduction.	
As scheduled	CLASSEs: Project briefing by the supervisors.	
30 Oct.	Supervisor Chosen	
(As announced)	CLASS: Thesis proposal explained. (What and how, etc.)	
26 Nov.	Submission: Project proposal. ***	Completeness check
1-7 Nov.	Reading Week A Term	
4 Jan., 2022	Start of the B term	
19-27 Feb.	Reading Week B Term	
1 Feb.	Submission: Progress Report. ***	Completeness check
1 st Apr.	<i>All project documentation, software artefacts (such as design, test cases, program code, etc.), research results are to be delivered to the supervisor. Without this delivery, a mark of zero will be given for the course.</i>	
1 st Apr.	Submission: Final Report.***	50
As scheduled	Presentation.***	50
1 st Apr.	<i>End of Classes</i>	

*** **EXTREMELY IMPORTANT:**

(1) All deliverables (Proposal, Progress Report, and Final Report and Presentation) are mandatory. A course grade of zero will be recorded if there are any missing deliverables.

(2) Please note that final report date and presentation date (TBA) are FIXED without exception (only university exception applies). THESE ARE (or will be) FIRM DATES. Failing to deliver these on the due date will result in the course grade of zero marks; no exception will be made.

(3) Presentations: All presentations will be online. (Details to be announced via OWL.) Please make sure that you are able to present your thesis at the scheduled date and time. No employment reasons, family trips, or other reasons that preclude you from making your presentation will be acceptable.

Late Submissions or Presentations

- Please note that late submissions of deliverables will **not be accepted**. Thus, submit what you have ON TIME. Please note that this is a serious thesis submission or presentation, not an ordinary course assignment.

About the Project Deliverables

- Specification of the various project deliverables will be posted on OWL and the class will be notified accordingly.
- Any changes, updates, and clarifications to deliverables will also be posted on OWL. It is your responsibility to monitor OWL closely.

Submission of Deliverables

- **IMPORTANT**: All project deliverables will be submitted simultaneously to:
 - (i) the supervisor **and**
 - (ii) the course instructor on the OWL site.

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.

Plagiarism: 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. Please note, however, that students are not allowed to make use of the work of others unless explicitly instructed to do so in the description of an assignment.

All projects are to be exclusively your own work. You may discuss approaches to problems among yourselves; however, the actual details of the work (coding, documentation, etc.) must be an individual effort. Incidents that are judged to be the result of academic dishonesty will be reported to the Undergraduate Chair. The selection of penalty to be applied is up to the Chair, with consultation of the instructor.

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 Department of Computer Science's policy on Scholastic Offenses, and Rules of Ethical Conduct.

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 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/>).

Accessibility Statement

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation.

Support Services

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 counseling.

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.

Link to policy on [Accommodation Consideration for Student Absences](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.pdf)
www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.pdf
(which includes a link to the [Student Medical Certificate](#))

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

Link to services provided by the University Students' Council: <http://westernusc.ca/services/>