

**Western University  
Faculty of Engineering  
Department of Electrical and Computer Engineering**

**SE2205A: Algorithms and Data Structures for Object Oriented Design**

**Course Outline 2023-24 (Fall 2023: September 07, 2023, to December 08, 2023)**

*No classes/Labs on October 09 (Monday/Thanksgiving), and from October 30 until November 5, 2023 (Fall reading week)*

**Description:**

This course surveys important computer algorithms and related data structures used in object-oriented software engineering. The course addresses the design, performance analysis and implementation of such algorithms by stressing their practical use and performance certification in large software applications. An understanding on how to "seal" designs to guarantee performance goals and ensure that all error conditions are caught will be discussed in this course.

**Academic Calendar Copy:** <https://www.westerncalendar.uwo.ca/AllCourses.cfm>

**Contact Hours:** 3 lecture hours, 2 laboratory hours, 0.5 course.

**Antirequisite:** Computer Science 2210A/B

**Prerequisites:** Computer Science 1026A/B or Engineering Science 1036A/B.

**Co-requisite:**

Unless you have either the requisites for this course or written special permission from your dean to enroll in it, you will 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 if you are dropped from a course for failing to have the necessary prerequisites.

**CEAB Academic Units:** Engineering Science 75%, Engineering Design 25%.

**Recommended References:**

1. Frank M. Carrano and Timothy M. Henry, Data Structures and Abstractions with Java, Prentice Hall, 5th Edition, 2019, ISBN 10: 0-13-483169-1 ISBN 13: 978-0-13-483169-5
2. Goodrich, Michael T., Roberto Tamassia, and Michael H. Goldwasser, Data structures and algorithms in Java, John Wiley & Sons, 6th Ed., 2014 (ISBN: 978-1-118-77133-4).
3. Gayle Laakmann McDowell. Cracking the Coding Interview, Career Cup, 6th Edition, 2015, ISBN: 978-0-9847828-5-7.

4. Raoul-Gabriel Urma, Mario Fusco, Alan Mycroft, Modern Java in Action: Lambdas, streams, functional and reactive programming (ISBN 9781617293566)  
<https://www.manning.com/books/modern-java-in-action?query=modern%20java> )

### General Learning Objectives (CEAB Graduate Attributes)

Knowledge Base (KB)	D	Use of Engineering Tools (ET)	D	Impact on Society and the Environment	
Problem Analysis	D	Individual and Teamwork		Ethics and Equity	
Investigation		Communication Skills		Economics and Project Management	
Design (DE)	D	Professionalism		Life-Long Learning	

Notation: *I: Introductory, D: Developed, A: Applied, or blank.* I – The instructor will introduce the topic at the level required. It is not necessary for the student to have seen the material before. D – There may be a reminder or review, but the student is expected to have seen and been tested on the material before taking the course. A – It is expected that the student can apply the knowledge without prompting (e.g., no review).

### Topics and Specific Learning Objectives

Course Topics and Specific Learning Objectives	CEAB Graduate Attributes Indicators
<b>1. Java Fundamentals and Object-Oriented Principles (OPP) Revisited</b> At the end of this section, students will be able to:	
a. Explain the Object-Oriented Principles.	KB 3
b. Identify the implementations of OOP principles in Java.	KB 3
c. Apply OOP in their programming with Java.	ET 2
<b>2. More Java Features</b> At the end of this section, students will be able to:	
a. Identify some features of Java programming including Composition, Aggregation	ET 1, ET 2
b. Recognize the benefits of Generics.	KB 4
c. Working with Exception handling, Recursions, and the likes	ET 1, ET 2
<b>3. Fundamental Data Structures</b> At the end of this section, students will be able to:	
a. Identify, implement, and use basic data structures including arrays, lists and linked lists.	KB3, ET1, ET2
b. Identify, implement, and use queues and stack data structures.	KB3, ET1, ET2
c. Identify, implement, and use tree and graph data structures.	KB3, ET1, ET2
d. Identify, implement, and use Maps and Hash Tables.	KB3, ET1, ET2
e. Recognize and work with Java Collections framework.	ET 1, ET 2
f. Recognize and work with Java Streams framework.	ET 1, ET 2
<b>4. Algorithm Analysis</b> At the end of this section, students will be able to:	

a. Recognize the concepts of algorithms analysis.	KB 3, PA 1
b. Perform Asymptotic analysis on any given algorithm.	KB 3, PA 1, PA 2, PA 3
<b>5. Fundamental Algorithms</b> At the end of this section, students will be able to:	
a. Recognize and implement the main search algorithms. Provide the rationale of using a specific algorithm for any given search problem.	KB 3, PA 1, PA 2, PA 3, DE3
b. Recognize and implement the main selection algorithms.	KB 3, PA 1, PA 2, PA 3
c. Recognize and implement the main sorting algorithms. Provide the rationale of using a specific algorithm for any given sorting problem.	KB 3, PA 1, PA 2, DE3
d. Recognize and implement the main tree algorithms.	KB 3, PA 1, PA 2, PA 3
e. Recognize and implement the main graph algorithms. Provide the rationale of using a specific algorithm for any given graphing problem.	KB 3, PA 1, PA 2, PA 3, DE3

## Evaluation

Course Component	Weight
Attendance	5%
Lab Exercise (Demo: 10% + Working Codes: 10%)	20%
Midterm	30%
Final Examination	45%
Bonus (5 Quizzes)	5%

### Note:

- A maximum-recorded mark for this course will be 100%, even if someone receives more than 100% mark after adding the bonus-marks.
- **Bonus marks will only be added to the original marks** of a student if the student completes all the lab exercises and Midterm with an average passing grade of 50% in each of those components.
- The student who fails the Lab-Exercise part of the course, can only receive a maximum grade of 50 in the course, even if all the components add up to more than 50% marks.

**Attendance:** Class attendance will be recorded on an attendance sheet based on the following breakdown:

Percentage of Attendance (%)	Grade (Out of 5)
<40	0
40 – 59	1
60 – 69	2
70 – 79	3
80 – 89	4
90 and above	5

**Note:**

- If anyone choose to opt-out of the mandatory-attendance, the attendance weight for that student will be moved to the final exam-weight.
- The deadline to opt-out of the mandatory attendance is: 15/Sept/2023, 11.59 pm. In this case, the student is required to email ([QRAHMAN3@uwo.ca](mailto:QRAHMAN3@uwo.ca)) the instructor.

**Lab exercises and Bonus Quizzes:** To help the students follow with the material, there will be a lab exercise in 7 different weeks, and bonus quiz in five different weeks beginning from week 2 (See the dates below). The associated overall grade of these lab exercises is 20% while the associated overall grade of the bonus quizzes is 5%. Since the Lab exercises will be available ahead of time, a very strict deadline will be maintained on the lab exercises. Also, the bonus quizzes will maintain strict deadlines.

**Midterm Test:**

Midterm will take place in October 2023

**Important Dates:** Please note that the following dates are provided to have an idea of the time-management expectation. These dates may change based on the availability of resources (Exam room, TAs, Proctors etc.). These dates will ONLY assure that if there is any change that change will move back the dates – this will NOT move the dates earlier than what has been outlined below. All the changes will be communicated via OWL-generated email.

Lab Exercise 1 / Bonus Quiz 1 - Open date: 18/Sept./2023; On-line cut-off date and time: 23/Sept./2023 at 11pm.

Lab Exercise 2 / Bonus Quiz 2 - Open date: 25/Sept./2023; On-line cut-off date and time: 30/Sept./2023 at 11pm.

Lab Exercise 3 / Bonus Quiz 3 - Open date: 01/Oct./2023; On-line cut-off date and time: 5/Oct./2023 at 11pm.

Lab Demo Week (Group 1/ Lab 1 to 3): Week of 9<sup>th</sup> of October (October 9 – October 13)

Lab Demo Week (Group 2/ Lab 1 to 3): Week of 16<sup>th</sup> of October (October 16 – October 20)

**Midterm: October**

Lab Exercise 4 / Bonus Quiz 4 - Open date: 21/Oct./2023; On-line cut-off date and time: 26/Oct./2023 at 11pm.

Lab Exercise 5 / Bonus Quiz 5 - Open date: 6/Nov./2023; On-line cut-off date and time: 11/Nov./2023 at 11pm.

Lab Exercise 6 - Open date: 13/Nov./2023; On-line cut-off date and time: 18/Nov./2023 at 11pm.

Lab Demo Week (Group 1/ Lab 4 to 6): Week of 20<sup>th</sup> of November (November 20 – November 24)

Lab Demo Week (Group 2/ Lab 4 to 6): Week of 27<sup>th</sup> of November (November 27 – Dec. 1)

Lab Exercise 7 - Open date: 20/Nov./2023; On-line cut-off date and time: 1/Dec./2023 at 11pm.

### **Final Examination:**

Time: Examination will take place during the regular examination period (10 Dec – 22 Dec).

### **Lab Attendance:**

Lab Attendance for working on the Lab Exercises is NOT mandatory. But attending the Lab, during Lab-demo week, is mandatory. Also, to get any extra help from the TAs, the students will be required to get in touch with the TAs, ahead of time, to see them during the scheduled lab time. In this case, the TAs should be contacted by any student, who might need any help, via email so that they can be there in the lab.

**Note on Attendance:** Any student who, in the opinion of the instructor, is absent too frequently from class, laboratory, or tutorial periods will be reported to the Dean (after due warning has been given). On the recommendation of the department, and with the permission of the Dean, the student will be debarred from taking the regular final examination in the course.

**Use of English:** In accordance with Senate and Faculty Policy, students may be penalized up to 10% of the marks on all assignments, tests, and examinations for improper use of English. Additionally, poorly written work except for the final examination may be returned without grading. If resubmission of the work is permitted, it may be graded with marks deducted for poor English and/or late submission.

**Absence Due to Illness or Other Circumstances:** Students should immediately consult with the instructor or department Chair if they have any problems that could affect their performance in the course. Where appropriate, the problems should be documented (see the attached “Instructions for Students Unable to Write Tests or Examinations or Submit Assignments as Scheduled”). The student should seek advice from the instructor or department Chair regarding how best to deal with

the problem. Failure to notify the instructor or department Chair immediately (or as soon as possible thereafter) will have a negative effect on any appeal.

For more information concerning medical accommodations, see the relevant section of the Academic Handbook:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_medical.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf)

For more information concerning accommodations for religious holidays, see the relevant section of the Academic Handbook:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_religious.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf)

**Missed Midterm Examinations:** If a student misses a midterm examination, she or he must follow the Instructions for Students Unable to Write Tests and provide documentation to Undergraduate Services Office within 24 hours of the missed test. If accommodation is granted, the midterm will be added to the final exam. If no reasonable justification for missing the test can be found, then the student will receive a mark of zero for the test.

If a student is going to miss the midterm examination for religious reasons, they must inform the instructor in writing within 48 hours of the announcement of the exam date or they will be required to write the exam.

**Approved Accommodation for SE2205A:**

- Lab Exercises and Bonus quizzes will get no accommodation, and **strict deadlines** will be observed for these assessments.
- **No makeup midterm exam** will be offered in this course. If any student **gets approval** from the undergrad services office for missing the midterm, his/her midterm exam weight will be moved to the final exam.

**Cheating and 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. University policy states that cheating, including plagiarism, is a scholastic offence. The commission of a scholastic offence is attended **by academic penalties, which might include expulsion from the program**. If you are caught cheating, there will be no second warning.

All required papers may be subject to submission for textual similarity review to commercial plagiarism-detection software under license to the University for the detection of plagiarism. All papers submitted will be included as source documents on 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>).

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, in the relevant section of the Academic Handbook:

[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)

## Use of Electronic Devices:

## Use of Personal Response Devices (“Clickers”):

**Policy on Repeating All Components of a Course:** Students who are required to repeat an Engineering course must repeat all components of the course. No special permissions will be granted enabling a student to retain laboratory, assignment, or test marks from previous years. Previously completed assignments and laboratories cannot be resubmitted by the student for grading in subsequent years.

**Internet and Electronic Mail:** Students are responsible for regularly checking their Western e-mail and the course web site (<https://owl.uwo.ca/portal/>) and making themselves aware of any information that is posted about the course.

**Accessibility:** Please contact the course instructor if you require material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 519-661-2111 ext. 82147 for any specific question regarding an accommodation.

**Support Services:** Office of the Registrar, <http://www.registrar.uwo.ca/>  
Student Development Centre, <http://www.sdc.uwo.ca/>  
Engineering Undergraduate Services, <http://www.eng.uwo.ca/undergraduate/>  
USC Student Support Services, <http://westernusc.ca/services/>  
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.

## Class Schedule:

Check your OWL course page.

## **STATEMENT ON GENDER-BASED AND SEXUAL VIOLENCE**

Western [is committed to reducing incidents of gender-based and sexual violence](#) and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced gender-based or sexual violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts, [here](#). To connect with a case manager or set up an appointment, please contact [support@uwo.ca](mailto:support@uwo.ca).

## **INSTRUCTIONS FOR STUDENTS UNABLE TO WRITE TESTS OR EXAMINATIONS OR SUBMIT ASSIGNMENTS AS SCHEDULED**

If, on medical or compassionate grounds, you are unable to write term tests or final examinations or complete course work by the due date, you should follow the instructions listed below. You

should understand that academic relief will not be granted automatically on request. You must demonstrate to your department (or the Undergraduate Services Office) that there are compelling medical or compassionate grounds that can be documented before academic relief will be considered. Different regulations apply to term tests, final examinations, and late assignments. Please read the instructions carefully.

#### **A. GENERAL REGULATIONS & PROCEDURES**

1. All first-year students will report to the Undergraduate Services Office by submitting the [Academic Consideration Request Form](#), for all instances.
2. If you are an upper year student and you are missing a test/assignment/lab or examination you will report the absence by submitting [Academic Consideration Request Form](#). Absences worth LESS THAN 10% of your mark, will be processed by your department office. If your course work is worth 10% OR MORE of your final grade, your request will be processed by the Undergraduate Services Office.
3. Check the course outline to see if the instructor has a policy for missed tests, examinations, late assignments or attendance.
4. Documentation must be provided as soon as possible. If no one is available in your department office or the Undergraduate Services Office, leave a message clearly stating your name & student number and reason for your call. The department telephone numbers are given at the end of these instructions.
5. If you decide to write a test or an examination, you should be prepared to accept the mark you earn. Rewriting tests or examinations or having the value of a test or examination reweighted on a retroactive basis is not permitted.

#### **B. TERM/MIDTERM TESTS**

1. If you are in first year and you are unable to write a midterm/term test, contact the Undergraduate Services Office, SEB 2097 PRIOR to the scheduled date of the test.
2. If you are an upper year student and you are unable to write a midterm/term test, inform your instructor PRIOR to the scheduled date of the test and request relief through the [Academic Consideration Request Form](#). If the instructor is not available, leave a message for him/her at the department office. If the test is worth LESS THAN 10% of your mark, your request for relief will be processed by your department office. If the test is worth MORE THAN 10% of your final grade your request for relief will be processed by the Undergraduate Services Office.
3. Be prepared to attach supporting documentation to the Department Chair and/or the Undergraduate Services Office through the online form (see next page for information on documentation).
4. Discuss with the instructor if and when the test can be rescheduled. The approval of the Chair or the Undergraduate Services Office is required when rescheduling midterm/term tests.



### C. **FINAL EXAMINATIONS**

1. If you are unable to write a final examination, contact the Undergraduate Services Office PRIOR TO THE SCHEDULED EXAMINATION TIME to report your absence using the [Academic Consideration Request Form](#) and request permission to write a Special Final Examination. If no one is available in the Undergraduate Services Office, leave a message clearly stating your name & student number.
2. Be prepared to provide the Undergraduate Services Office with supporting documentation (see next page for information on documentation) the next day, or as soon as possible (in cases where students are hospitalized). The following circumstances are not considered grounds for missing a final examination or requesting special examinations: common cold, headache, sleeping in, misreading timetable and travel arrangements.
3. In order to receive permission to write a Special Examination, you must obtain the approval of the Chair of the Department **and** the Associate Dean and in order to apply you must submit an "[Application for a Special Exam](#)" form. The Undergraduate Services Office will then notify the course instructor(s) and reschedule the examination on your behalf.

***PLEASE NOTE: It is the student's responsibility to check the date, time and location of the Special Examination.***

### D. **LATE ASSIGNMENTS**

1. Advise the instructor if you are having problems completing the assignment on time (**prior** to the due date of the assignment).
2. Be prepared to submit the [Academic Consideration Request Form](#) and provide documentation if requested by the instructor (see reverse side for information on documentation).
3. If you are granted an extension, establish a due date. The approval of the Chair of your Department (or the Assistant Dean, First Year Studies, if you are in first year) is not required if assignments will be completed prior to the last day of classes.
4.
  - i) Extensions beyond the end of classes must have the consent of the instructor, the department Chair and the Associate Dean, Undergraduate Studies. Documentation is mandatory.
  - ii) A Recommendation of Incomplete Form must be filled out indicating the work to be completed and the date by which it is due. This form must be signed by the student, the instructor, the department Chair and the Associate Dean, Undergraduate Studies.

### E. **SHORT ABSENCES**

If you miss a class due to a minor illness or other problem, check your course outlines for information regarding attendance requirements and make sure you are not missing a test, laboratory or assignment. Cover any readings and arrange to borrow notes from a classmate.

### F. **EXTENDED ABSENCES**

If you are absent more than one week or if you get too far behind to catch up, you should consider reducing your workload by dropping one or more courses. (Note drop deadlines listed below). You are strongly encouraged to seek advice from your Academic Counsellor in the Undergraduate Services Office.

#### G. **DOCUMENTATION**

If you consulted an off-campus doctor or Student Health Services regarding your illness or personal problem, you **must provide the doctor with a Student Medical Certificate** to complete at the time of your visit and then bring it to the Department (or the Undergraduate Services Office). **This note must contain the following information: severity of illness, effect on academic studies and duration of absence. Regular doctor's notes will not be accepted; only the Student Medical Certificate will be accepted.**

**In Case of Serious Illness of a Family Member:** Provide a Student Medical Certificate to your family member's physician to complete and bring it to the Department (or the Undergraduate Services Office if you are in first year).

**In Case of a Death:** Obtain a copy of the death certificate or the notice provided by the funeral director's office. You must include your relationship to the deceased and bring it to the Department (or the Undergraduate Services Office if you are in first year).

**For Other Extenuating Circumstances:** If you are not sure what documentation to provide, ask the Departmental Office (or the Undergraduate Services Office if you are in first year) for direction.

**Note: Forged notes and certificates will be dealt with severely. To submit a forged document is a scholastic offence (see below).**

## H. **ACADEMIC CONCERNS**

1. You need to know if your instructors have a policy on late penalties, missed tests, etc. This information may be included on the course outlines. If not, ask your instructor(s).
2. **You should also be aware of attendance requirements in some courses. You can be debarred from writing the final examination if your attendance is not satisfactory.**
3. If you are in academic difficulty, check out the minimum requirements for progression in the calendar. If in doubt, see your Academic Counsellor.

**Calendar References:** Check these regulations in your 2023 Western Academic Calendar available at [www.westerncalendar.uwo.ca](http://www.westerncalendar.uwo.ca).

### **Absences Due to Illness:**

[https://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page\\_135](https://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_135)

### **Academic Accommodations for Students with Disabilities:**

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page\\_10](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_10)

### **Academic Accommodations for Religious or Holy Days:**

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page\\_16](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_16)

### **Course Withdrawals:**

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=6&SelectedCalendar=Live&ArchiveID=#Page\\_75](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=6&SelectedCalendar=Live&ArchiveID=#Page_75)

### **Examinations:**

<http://www.westerncalendar.uwo.ca/PolicyPages.cfm?PolicyCategoryID=5&command=showCategory&SelectedCalendar=Live&ArchiveID=#>

### **Scheduling of Term Assignments:**

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=5&SelectedCalendar=Live&ArchiveID=#SubHeading\\_78](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=5&SelectedCalendar=Live&ArchiveID=#SubHeading_78)

### **Scholastic Offences:**

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page\\_20](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_20)

### **Student Medical Certificate:**

<https://www.eng.uwo.ca/files/undergraduate/student-medical-certificate.pdf>

### **Engineering Academic Regulations:**

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=4&SelectedCalendar=Live&ArchiveID=#Page\\_86](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=4&SelectedCalendar=Live&ArchiveID=#Page_86)

**Note:** These instructions apply to all students registered in the Faculty of Engineering regardless of whether the courses are offered by the Faculty of Engineering or other faculties in the University.

**Add Deadlines:**

First term half course (i.e. “A” or “F”): September 15, 2023

Full courses and full-year half course (i.e. “E”, “Y” or no suffix): September 15, 2023

Second term half course (i.e. “B” or “G”): January 16, 2024

**Drop Deadlines:**

First term half course without penalty (i.e. “A” or “F”): November 13, 2023

Full courses and full-year half courses without penalty (i.e. “E”, “Y” or no suffix): November 30, 2023

Second term half or second term full course without penalty (i.e. “B” or “G”): March 7, 2024

**Contact Information:**

Undergraduate Services Office: SEB 2097, Phone: 519-661-2130, E-mail: [engugrad@uwo.ca](mailto:engugrad@uwo.ca)

Chemical & Green Process Engineering: TEB 477, Phone: 519-661-2131, E-mail: [cbeugrad@uwo.ca](mailto:cbeugrad@uwo.ca)

Civil Engineering: SEB 3005 Phone: 519-661-2139, E-mail: [civil@uwo.ca](mailto:civil@uwo.ca)

Computer, Electrical, Mechatronic Systems & Software Engineering, TEB 279, Phone: 519-661-3758, E-mail: [cceugrad@uwo.ca](mailto:cceugrad@uwo.ca)

Integrated Engineering: ACEB 2410, Phone: 519-661-6725, E-mail: [engceli@uwo.ca](mailto:engceli@uwo.ca)

Mechanical Engineering: SEB 3002, Phone: 519-661-4122, E-mail: [mmeundergraduate@uwo.ca](mailto:mmeundergraduate@uwo.ca)