Western University - Faculty of Engineering Department of Civil and Environmental Engineering

CEE 2220a – Introduction to Structural Engineering - Course Outline 2023

This course introduces structural analysis and design as applications of the principles of static equilibrium. The general objectives are for the student to become able to:

- identify, formulate, analyse and solve structural analysis and design problems while working individually or functioning on a team.
- conduct experiments, analyse and interpret data, synthesise results to rationally account for differences between predicted and observed structural responses, and communicate the findings effectively in concise and complete laboratory reports;
- apply knowledge of mathematics and statics to the analysis of two dimensional trusses, beams and frames;
- appreciate the importance of natural loads and evaluate structural loading from wind and snow;
- understand structural engineering drawings and create simple drawings using AutoCAD;
- proportion simple compression and tension members and design, fabricate, and test to destruction a model truss;
- improve communication skills by documenting design decisions in coherent and legible design calculations;
- develop an awareness of contemporary structures, and appreciate professional responsibility issues;
- recognize the need for life-long learning to keep abreast of new design and construction methods, enhance one's abilities as a designer, and maintain one's professional competence.

Calendar Copy:

A first course in Structural Theory and Design, including a consolidation of material concerning static equilibrium. Free body diagrams; behaviour, analysis and design of trusses and statically determinate steel and wooden beams; Euler buckling; force effect envelopes; snow and static wind loads.

Prequisites: ES 1022a/b/y, NMM 1412A/B or the former AM 1412A/B

<u>Corequisites:</u> NMM 2270A/B, CEE 2202A or registration in Integrated Engineering

Antirequisites: None

Note: It is the **student's responsibility** to ensure that all Prerequisite and Corequisite conditions are met or that special permission to waive these requirements has been granted by the Faculty. It is also the **student's responsibility** to ensure that they have not taken a course listed as an Antirequisite. The student may be dropped from the course or not given credit for the course towards their degree if they violate the Prerequisite, Corequisite or Antirequisite conditions.

Contact Hours:

3 lecture hours/week

Lectures are organized into weekly learning modules, including both online lectures and in-person discussion. Students should review the online lectures in the week they are posted, and be prepared to discuss and apply during the weekly lecture sessions. Review of lecture material and attendance at lecture sessions should take approximately 6 hours per week.

2 tutorial hours/week

A 2-hour tutorial session will be delivered each week. Students will be organized into teams of four at the beginning of the year. Each week, students will work on an assignment with two parts. Part A is a group assignment which will be submitted by the end of the tutorial session. Part B is an individual assignment which will be submitted at the beginning of the following week.

2 laboratory sessions/term

Two laboratory sessions will be conducted during the course. These laboratories will take place in the Structures Lab (SEB 22). Student groups will conduct measurements, complete required calculations and prepare a laboratory report. Proper PPE in the form of steel-toed boots will be required for any students interacting directly with the laboratory equipment.

Contingency plan for an in-person class pivoting to 100% online learning

In the event of a COVID-19 resurgence during the course that necessitates the course delivery moving away from face-to-face interaction, affected course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will **not** change. Any remaining assessments will also be conducted online as determined by the course instructor.

Instructor:

Dr. Jon Southen, P.Eng., SEB 3116, email: jsouthen@uwo.ca. Office Hours: by appointment.

Textbook:

Course notes (with gaps) will be provided. These should be downloaded from the course OWL site in advance of watching/attending the lecture. The gaps will be filled in during the lectures and should be done by the student in their own set of notes while watching the lecture; this will promote active learning. Solutions to some example problems and gap-filled notes, will <u>not</u> be posted on the course OWL site. Other References:

Structural Analysis, A. Kassimali, CENGAGE Learning, 5th Edition, 2015. (optional) Structures or Why Things Don't Fall Down, by J. E. Gordon, Penguin, 1979. (optional) Mechanics of Materials (9th Edition in SI Units), R.C. Hibbeler, Pearson Prentice Hall (optional)

Computing:

Students are required to use personal computers running a Windows environment. Assignments may require the use of structural analysis programs West Point Bridge Designer (http://bridgecontest.usma.edu/) and Analysis (http://www.cuylaerts.net/) and the drafting package AutoCAD (http://www.autodesk.ca/en). It is the student's responsibility to ensure that they have access to a computer capable of running these programs.

<u>Specific Learning Objectives [GA Indicator – bold denotes evaluated indicator]:</u>

- 1. <u>Introduction: The Eye of a Structural Engineer.</u>
 - a) Recognise potential to learn about structures by looking at them critically [KB3, PA1]
 - b) Determine load paths by visual inspection of simple structures [KB3, PA1]

2. Equilibrium.

- a) Apply equations of equilibrium for plane and 3-dimensional structures [PA2]
- b) Idealise applied loads and restraint conditions for structural analysis [PA1]
- c) Experimentally investigate the statics and geometry of cables [11, 13]

3. Free Body Diagrams

- a) Draw free body diagrams for structures, members, or parts of members [PA1, PA2]
- b) Compute external reactions or internal force effects by solving equations of equilibrium and condition, derived using free body diagram [PA2]

4. Stability and Determinacy

- a) Check stability and determinacy of beams, trusses and frames [PA1]
- b) Recognise that instability occurs when the structure has too few members or restraints to satisfy the equations of equilibrium [PA1]
- c) Draw the collapse mode for an unstable plane structure [PA1]
- d) Identify geometric instability due to poor arrangement of internal members or external supports [PA1]

5. Trusses

- a) Identify common truss configurations [KB3, PA1]
- b) Rapidly compute tension and compression forces in members using the method of joints [PA2, PA3]
- c) Rapidly compute tension and compression forces in members using the method of sections [PA2, PA3]
- d) Apply both the method of sections and the method of joints to the analysis of compound trusses [**PA2**, PA3]
- e) Rapidly identify zero force members in trusses [PA1]
- f) Determine deflections due to axial deformations in simple trusses [PA3]
- g) Idealise truss for analysis by computer software analysis package [PA1, PA2, ET1, ET2]
- h) Check by hand calculation results obtained from computer analysis software package [PA3, ET2]
- i) Experimentally investigate the behaviour of trusses and verify the principle of superposition [I1, I3]
- i) Design, construct, and test to failure a model truss [D1, D2, D3, D4. ITW2]

6. <u>Introduction to Structural Design</u>

- a) Identify essential design requirements at serviceability and ultimate limit states [D1]
- b) Carry out structural design as a 5-step process: (1) problem definition, (2) preliminary design of alternative solutions, (3) evaluation of alternatives, (4) final design, (5) implementation (including drawings). [D4]
- c) Classify limit states as ultimate, fatigue or serviceability limit states [D1]

7. Structural Loads

- a) Recognize the sources of loads on structures [D1]
- b) Recognize the significance of natural loads [D1]
- c) Calculate design static wind loads [D1]
- d) Calculate design snow loads [D1]

8. Structural Drawings

- a) Understand the importance of drawing as a communication tool for engineers [CS2]
- b) Recognize and interpret essential elements of a structural drawing [CS2]
- c) Use AutoCAD to create basic drawings [CS2, ET2]

9. Design of Tension Members

- a) Classify materials as brittle, ductile, stiff or flexible based on their behaviour [D1]
- b) Analyse tension members to determine capacity based on yield of the gross section or fracture of the net section, accounting for staggered holes [PA3, D4]
- c) Design tension members for factored loads at Ultimate Limit States [PA3, D4]

10. Behaviour and Design of Compression Members

- a) Determine the capacity of compression members that fail by crushing of the cross section or by Euler buckling of the member [PA3, D4]
- b) Calculate the Euler buckling load of columns with various end restraints using effective length factors [PA3, D4]

11. Beams and Frames:

- a) Draw axial force, shear force, and bending moment diagrams by any of the following methods:
 - Evaluate force effects at many locations using the method of sections
 - Derive equations for the internal force effects
 - Derive the relationships between the load, shear, and bending moment diagrams using the equations of equilibrium [PA1, PA2, PA3]
- b) Determine force effect envelopes for simple beams. [PA3]

12. Force Effect Envelopes

a) Use superposition to create force effect envelopes representing the combined effects of dead and live loads. [PA3]

13. Professional Engineering

- a. Recognize the professional obligations of structural engineers as prescribed by legislation.
 [PR1, PR2, PR3]
- b. Demonstrate awareness of, and application of, professional ethics and principles of equity. [EE1, EE2, EE3, EE4]

The instructor may expand or revise material presented in the course as appropriate. Students should refer to the posted schedule for details about lecture and tutorial sessions.

General Learning Objectives

E=Evaluate, T=Teach, I=Introduce (*Introductory Level*)

Problem Analysis	E(I)	Team Work	T	Ethics and Equity	E(I)
Investigation	E(I)	Communication	Т	Economics and Project Management	
Design	E(I)	Professionalism	E(I)	Life-Long Learning	I
Engineering Tools	T	Impact on Society	I	Knowledge Base for Engineering	Т

Evaluation:

The final course mark will be determined as follows:

Assignments and Participation:	25 %
Lab Reports	5 %
Truss Model Design Project	15 %
Quizzes:	15 %
Final Exam:	40 %
Total	100%

Note:

- (a) **Students must pass the final examination to pass this course**. Students who fail the final examination will be assigned the aggregate mark, as determined above, or 48%, whichever is less.
- (b) Students must turn in all laboratory reports, and achieve a passing grade in the laboratory component, to pass this course. Students who do not satisfy this requirement will be assigned 48% or the aggregate mark, whichever is less.
- (c) Students who have failed this course previously 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.
- (d) Should any of the quizzes conflict with a religious holiday that a student wishes to observe, the student must inform the instructor of the conflict no later than two weeks before the scheduled test.

(For further information on Accommodations for Religious Holidays see http://www.uwo.ca/univsec/handbook/appeals/accommodation-religious.pdf)

1. Quizzes and Examinations:

Two 50-minute quizzes will be scheduled during lecture times, tentatively on Thursday, October 12 and Thursday, November 16.

A three-hour written final examination will be held during the regular examination period in December.

2. Assignments

Assignments will be given weekly during the tutorial sessions. One solution to Part A of each weekly assignment must be turned in by each group by the end of the tutorial period. Group membership will be assigned by the instructor, and may be revised during the term. All group members must sign the cover page of group submissions.

Each student must turn in one solution to Part B of each weekly assignment by 9:00 am Monday morning by electronic submission to OWL. Late assignments will receive a penalty of 10%/day. Extensions are to be negotiated with the course instructor, not the teaching assistants.

In some circumstances, only a selection of questions from an assignment will be marked – the questions worth marks will not be determined or announced in advance. The intention is for students to complete the entire assignment in order to maximize learning the course material.

3. Laboratories

Laboratory reports will be prepared by teams of students assigned by the course instructor. Details regarding the laboratory report requirements will be posted to OWL.

4. Truss Design Project

In this project, teams of students will design, construct and test to failure a truss bridge structure fabricated from popsicle sticks. Students may select their own teams of 1-4 students for this project. Testing will be conducted during the tutorial session on November 29, with the final report due at the end of classes on December 8. Further details about the project will be posted to the course Owl site and discussed during a lecture.

5. Use of English

In accordance with Senate and Faculty Policy, students may be penalised up to 10% of the marks on all assignments, tests, and examinations for the improper use of English. Additionally, poorly written work with the exception of 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.

Cheating:

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

For more information on scholastic offenses, please see:

http://www.uwo.ca/univsec/handbook/appeals/scholastic discipline undergrad.pdf

Attendance:

Any student who, in the opinion of the instructor, has not engaged sufficiently in class, laboratory, or tutorial periods will be reported to the Dean (after due warning has been given). On the recommendation of the Department concerned, and with the permission of the Dean, the student will be debarred from taking the regular final examination in the course.

Accommodation:

Students with disabilities work with Accessible Education (formerly SSD) which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The accommodation policy can be found here: <u>Academic Accommodation for Students with Disabilities.</u>

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 Accessible Education at

http://academicsupport.uwo.ca/accessible_education/index.html

if you have any questions regarding accommodations.

Sickness and Other Problems:

If you are unable to meet a course requirement due to illness or other serious circumstances, please follow the procedures below.

Assessments worth less than 10% of the overall course grade:

Tutorial Assignments:

In determining the final grade, the lowest 3 assignment marks will be excluded from the calculation. Students missing more than 3 assignments due to illness should contact the course instructor for appropriate accommodation. This will take the form of reweighting the assignment mark to account for the absence.

Lab Reports:

If a student is unable to attend a scheduled lab session or assist their team with the completion of the lab report due to illness, appropriate extension of the due date for the lab report will be given.

Quizzes:

If a student is unable to attend a scheduled quiz due to illness, the final grade will be reweighted to account for this absence.

Students should arrange for these accommodations by contacting the course instructor directly.

Assessments worth 10% or more of the overall course grade:

For work totalling 10% or more of the final course grade, you must provide valid medical or supporting documentation to the Faculty of Engineering Undergraduate Services Office as soon as possible. For further information, please consult the University's medical illness policy at

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

The Student Medical Certificate is available at

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

Absences from Final Examinations

If you miss the Final Exam, please contact Western Engineering Undergraduate Services as soon as possible. They will assess your eligibility to write the Special Examination.

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (e.g., more than 2 exams in 23-hour period, more than 3 exams in a 47-hour period).

If a student fails to write a scheduled Special Examination, the date of the next Special Examination (if granted) normally will be the scheduled date for the final exam the next time this course is offered. The maximum course load for that term will be reduced by the credit of the course(s) for which the final examination has been deferred. See the Academic Calendar for details (under Special Examinations).

Academic Policies:

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

In accordance with policy,

https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf,

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 their official university address is attended to in a timely manner.

Use of electronic devices during quizzes or examinations is restricted to non-programmable calculators. No other aids are permitted.

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.

Support Services:

Please visit the Western Engineering Undergraduate Services webpage for information on adding/dropping courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: https://www.eng.uwo.ca/undergraduate/index.html

Students who are in emotional/mental distress should refer to Mental Health@Western (https://uwo.ca/health/) for a complete list of options about how to obtain help.

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 sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at

https://www.uwo.ca/health/student_support/survivor_support/get-help.html.

To connect with a case manager or set up an appointment, please contact support@uwo.ca.

Learning-skills counsellors at the Student Development Centre (https://learning.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.

Additional student-run support services are offered by the USC, https://westernusc.ca/services/.

Course breakdown:

Engineering Science = 50%; Engineering design = 50%.

The document "INSTRUCTIONS FOR STUDENTS UNABLE TO WRITE TESTS OR EXAMINATIONS OR SUBMINT ASSIGNMENTS AS SCHEDULED" is part of this course outline



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.

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. <u>GENERAL REGULATIONS & PROCEDURES</u>

- 1. All first-year students will report to the Undergraduate Services Office by submitting the <u>Academic Consideration Request Form</u>, 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 <u>Academic Consideration Request Form</u>. 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 <u>clearly</u> 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. <u>TERM/MIDTERM TESTS</u>

- 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 <u>PRIOR</u> to the scheduled date of the test and request relief through the <u>Academic Consideration Request Form</u>. 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 <u>Academic Consideration Request Form</u> and request permission to write a Special Final Examination. If no one is available in the Undergraduate Services Office, leave a message <u>clearly</u> 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 <u>must</u> obtain the approval of the Chair of the Department **and** the Associate Dean and in order to apply you <u>must</u> submit an "<u>Application for a Special Exam</u>" 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. <u>LATE ASSIGNMENTS</u>

- 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 <u>Academic Consideration Request Form</u> 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 <u>must</u> 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.

<u>In Case of Serious Illness of a Family Member:</u> 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).

<u>In Case of a Death:</u> 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.

Absences Due to Illness:

https://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_13_5

Academic Accommodations for Students with Disabilities:

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

Course Withdrawals:

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

Scholastic Offences:

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

<u>Note:</u> 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 Chemical & Green Process Engineering: TEB 477 Phone: 519-661-2131 E-mail: cbeugrad@uwo.ca Civil Engineering: SEB 3005 Phone: 519-661-2139 E-mail: civil@uwo.ca Computer, Electrical, Mechatronic Systems & Software Engineering E-mail: eceugrad@uwo.ca TEB 279 Phone: 519-661-3758 Integrated Engineering ACEB 2410 Phone: 519-661-6725 E-mail: engceli@uwo.ca Mechanical Engineering: SEB 3002 Phone: 519-661-4122 E-mail: mmeundergraduate@uwo.ca