Western University - Faculty of Engineering
Department of Civil and Environmental Engineering
CEE 4478 – Case Studies in Civil Engineering - Course Outline 2020/2021

This rev 00 syllabus reflects southwestern Ontario being presently in Red state covid-19 response mode. If the community status goes back to Orange or better throughout the semester, the syllabus will be updated to reflect. The major difference between these 2 states as CEE-4478 students are impacted is that Red state is fully online. Alternatively, Orange is fully in class for students, and a mixed offering for weekly guests.

This course introduces students to selected engineering case studies covering a range of disciplines and problems. Through studying and analysing the outcomes of these engineering projects, students will be exposed to the complex and multidisciplinary challenges facing civil engineers on a daily basis. The effects of a number of non-technical issues, e.g. legal, managerial, financial, environmental, ethical, political and social, will be addressed. Students will be familiarized with well-known engineering failures, the lessons to be learnt from these cases and subsequent changes in the engineering profession. A participative mode of learning will be used where all students will be expected to actively contribute during group and Zoom discussion. The students will also prepare their own case study based on information collected and present their findings in both written and oral formats.

Calendar Copy:
Students will examine a number of "cases" in which some critical engineering decisions must be made. These decisions may be influenced by technical, social, economic, political, legal, ethical, health and safety or regulatory considerations. (0.5 course).

Online Contact Hours:
3 online lecture hours/week (recommended extra personal study: 3 hours). Attendance at the lectures is mandatory. Lectures are Wednesdays from 2:30-5:30 p.m. and are primarily case study in format.

Pre-requisites: Completion of third year of the ‘Civil and Environmental Engineering Program’.

Corequisites: None.

Anti-requisites: 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 Anti-requisite. 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 Anti-requisite conditions.

Instructor:
Kevin L. McGuire M. Eng., P. Eng., PMP, email: kmcgui5@uwo.ca. Administrative Support: Room 3005. Office hours: Wed. 1:30 - 2:30 upon request by Zoom appointment only (Tentative – final by Jan 11/21)

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Textbook:
Custom Course Material containing the various case studies will be available on OWL. Other relevant material will be distributed throughout the term.

Units:
SI units will be used in lectures and examinations.

Specific Learning Objectives:
Course participants will:

- learn how to assess information presented or collected to identify key points.
- learn how to develop key arguments and decisions, and present them in written and oral formats.
- develop problem-solving skills whilst working alone and in groups.
- develop an understanding of the impact of engineering on non-technical issues and vice-versa.
- develop an appreciation of the impact of engineering solutions in a global and societal context.
- be introduced to well-known engineering failures and decision making processes, and thereby understand the effects they have had on the engineering profession.
- be made aware of the need for life-long learning in engineering practice.
- learn to prepare a case study based on a review of the literature, collection of data, interpretation and analysis, and group/personal discussion.

General Learning Objectives:

<table>
<thead>
<tr>
<th>Problem Analysis</th>
<th>Teamwork</th>
<th>E</th>
<th>Ethics and Equity</th>
<th>E</th>
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</thead>
<tbody>
<tr>
<td>Investigation</td>
<td>Communication</td>
<td>E</td>
<td>Economics and Project Management</td>
<td>E</td>
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<tr>
<td>Design</td>
<td>Professionalism</td>
<td>E</td>
<td>Life-Long Learning</td>
<td>I</td>
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<tr>
<td>Engineering Tools</td>
<td>Impact on Society</td>
<td>E</td>
<td></td>
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Evaluation:
The final course mark will be determined as follows:

<table>
<thead>
<tr>
<th></th>
<th>Individual</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written analysis of case studies (group effort)</td>
<td>16%</td>
<td>16%</td>
</tr>
<tr>
<td>Participation in Zoom discussions (individual mark)</td>
<td>16%</td>
<td></td>
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<tr>
<td>Group case study project (group effort)</td>
<td>4%</td>
<td>24%</td>
</tr>
<tr>
<td>Presentation (individual mark)</td>
<td>40%</td>
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<tr>
<td>Final Exam (individual mark)</td>
<td>60%</td>
<td>40%</td>
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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 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. 

(c) Should any of the course requirements conflicts 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: accommodation_religious.pdf (uwo.ca)

1. Examinations:
Programmable calculators will be permitted in the final exam. The final examination will be AN OPEN BOOK TAKE HOME EXAM: Calculators or other external sources of information, including books, notes or crib sheets, are permitted.

2. Weekly Assignments:
Each weekly assignment must be turned in to Owl by the group (one copy only please) at the beginning of each class. Group membership will be assigned by the instructor. A weekly minutes template will be distributed and students are expected to detail individual contributions fairly and accurately. Late assignments will receive a grade of zero. Extensions are to be negotiated with the course instructor, not the teaching assistants.

3. 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.

4. Group Case Study Project:
Details to be announced in class.

5. Individual Presentations:
Each group member must participate as a Zoom presenter for at least 4 minutes duration in a group presentation during the course. The evaluation of the oral presentation shall be based on the organization and completeness of the presentation, the content, the use of time available, the quality of visual aids, the cleanliness of the technical co-ordination, and the quality of the oral delivery.

Plagiarism Checking:
The University of Western Ontario uses software for plagiarism checking. Students are required to submit their Laboratory Reports in electronic form to Turnitin.com for plagiarism checking.

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: cheating2018.pdf (uwo.ca)
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 concerned, and with the permission of the Dean, the student will be debarred from taking the regular final examination in 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 Accessible Education at 661-2111 x 82147 for any specific question regarding an accommodation.

Conduct:
Students are expected to arrive in Zoom on time, and to conduct themselves during class in a professional and respectful manner that is not disruptive to others. Late comers may be asked to wait in the Zoom waiting room until being invited in by the Instructor. Please turn off your cell phone before coming to a class, tutorial, quiz or exam. On the premises of the University or at a University-sponsored program, students must abide by the Student Code of Conduct: http://www.uwo.ca/univsec/board/code.pdf

Use of Recordings:
All of the remote learning sessions for this course will be recorded. The data captured during these recordings may include your image, voice recordings, chat logs and personal identifiers (name displayed on the screen). The recordings will be used for educational purposes related to this course, including evaluations. The recordings may be disclosed to other individuals under special circumstances. Please contact the instructor if you have any concerns related to session recordings. Participants in this course are not permitted to record the sessions, except where recording is an approved accommodation, or the participant has the prior written permission of the instructor.

Sickness and Other Problems:
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 attached). 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, please see: http://www.uwo.ca/univsec/handbook/appeals/accommodation_medical.pdf

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: Academic Accommodation for Students with Disabilities.

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Notice:
Students are responsible for regularly checking their email, course website (https://owl.uwo.ca) and notices posted outside the Civil and Environmental Engineering Department Office.

Consultation:
Students are encouraged to discuss problems with their teaching assistant and/or instructor in tutorial sessions. Zoom hours will be arranged for the students to see the instructor and teaching assistants. Other individual consultation can be arranged by appointment with the appropriate instructor.

Course breakdown:
Natural Science = 0% ; Engineering Science = 30% ; Engineering design = 30% ; Complementary Studies = 40%; Mathematics = 0%.

Western University - Faculty of Engineering
2018-2019

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, SEB 2097, for all instances.

2. If you are an upper year student and you are missing a test/assignment/lab or examination that is worth LESS THAN 10% of your mark, you should report to your department office to request relief. If your course work is MORE THAN 10% of your final grade, you will report to the Undergraduate Services Office, SEB 2097.

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 TESTS

1. If you are in first year and you are unable to write a 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 term test, inform your instructor PRIOR to the scheduled date of the test. 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, you should report to your department office to request relief. If the test is worth MORE THAN 10% of your final grade you will report to the Undergraduate Services Office, SEB 2097 to request relief.

3. Be prepared to provide supporting documentation to the Department Chair and/or the Undergraduate Services Office (see next page for information on documentation).

4. Discuss with the instructor if and when the test can be rescheduled. N.B. The approval of the Chair or the Undergraduate Services Office is required when rescheduling 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 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, 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 sign a "Recommendation for a Special Examination Form" available in the Undergraduate Services Office. 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 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 may want 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 2018 Western Academic Calendar available at www.westerncalendar.uwo.ca.

Absences Due to Illness:  
http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page12

Academic Accommodations for Students with Disabilities:  
http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page10

Academic Accommodations for Religious or Holy Days:  
http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page16

Course Withdrawals:  
http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=6&SelectedCalendar=Live&ArchiveID=#Page15

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=#SubHeading78

Scholastic Offences:  
http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page20

Student Medical Certificate:  
https://www.eng.uwo.ca/files/undergraduate/forms/smc.pdf

Engineering Academic Regulations:  
http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=4&SelectedCalendar=Live&ArchiveID=#Page86

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 14, 2018  
Full courses and full-year half course (i.e. “E”, “Y”)  
September 14, 2018  
Second term half course (i.e. “B” or “G”)  
January 15, 2019

Drop Deadlines:  
First term half course (i.e. “A” or “F”)  
12, 2018  
Full courses and full-year half courses (i.e. “E,Y” or no suffix)  
November 12, 2018  
Second term half or second term full course  
(i.e. “B” or “G”)  
November 30, 2018  
March 7, 2019

Contact Information:
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**Document Control:** This syllabus was created, and distributed by Kevin McGuire P. Eng.

Rev 00 – Released December 13, 2020 to the undergraduate associate-chair for CEE.