

# The University of Western Ontario

## Project Management and Engineering Cases

CEE 3348a Department of Civil and Environmental Engineering

Course Outline – Fall 2017

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**Instructors:** Kevin McGuire, M. Eng., P. Eng. & Salem El Harakeh, M. Eng., P. Eng.

### Description:

This course introduces students to the planning, controlling and management of civil engineering projects. The course covers basic elements of Construction Project Management - the science and engineering of managing and optimizing space, time and resources on construction projects. Through studying and analyzing actual case studies students will be exposed to the complex and multidisciplinary nature of the decisions faced by civil engineers on a daily basis in real world applications.

The general objectives are for the student to become able to:

- Apply knowledge of planning, executing and controlling to the management of construction projects;
- Utilize professional planning and scheduling software to create, schedule and effectively optimize a project activities and resources;
- Identify, formulate, analyse and plan project main elements, specifically time, cost and quality while working individually or functioning on a team;
- Develop an awareness of construction project management from actual life on-site situations;
- Examine, in some depth, the specific management processes applied in utilizing construction resources on the project.
- Recognize the need for life-long learning to keep abreast of new planning and construction methods, enhance one's abilities as a construction project manager, and maintain one's professional competence.

### Course Content: Shown as lessons 1 through 12 including learning outcomes

Lesson One – Introduction to Project Management

Lesson Two - Introduction to Construction and Estimating

Lesson Three - Bidding Law and Bonds

Lesson Four - Construction Contracts and Delivery Methods

Lesson Five - Project Planning and Scheduling & Case Study #1 Overview

Lesson Six - Site Logistics & Case Study #2 Overview

Lesson Seven - Project Cost Management (Cash Flow) & Case Study #3 Overview

Lesson Eight - Term Project Overview

Lesson Nine - LEAN Construction Management

Lesson Ten - Project Human Resources Management

Lesson Eleven - LEED in Construction

Lesson Twelve – Exam preparation & Additional Topics as necessary



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## Class Schedule

Date	Time	Location	Hours
Tuesday, Sep 12, 2017	6:30 pm – 8:30 pm	SEB 2202	2
Tuesday, Sep 19, 2017	6:30 pm – 8:30 pm	SEB 2202	2
Tuesday, Sep 26, 2017	6:30 pm – 8:30 pm	SEB 2202	2
Tuesday, Oct 3, 2017	6:30 pm – 8:30 pm	SEB 2202	2
Tuesday, Oct 17, 2017	6:30 pm – 8:30 pm	SEB 2202	2
Tuesday, Oct 24, 2017	6:30 pm – 8:30 pm	SEB 2202	2
Tuesday, Oct 31, 2017	6:30 pm – 8:30 pm	SEB 2202	2
Tuesday, Nov 7, 2017	6:30 pm – 8:30 pm	SEB 2202	2
Tuesday, Nov 14, 2017	6:30 pm – 8:30 pm	SEB 2202	2
Tuesday, Nov 21, 2017	6:30 pm – 8:30 pm	SEB 2202	2
Tuesday, Nov 28, 2017	6:30 pm – 8:30 pm	SEB 2202	2
Tuesday, Dec 5, 2017	6:30 pm – 8:30 pm	SEB 2202	2
TBD	TBD	TBD	3
<b>Total Teaching Hours not including 4 two hour laboratories</b>			<b>24</b>

*EXAM*

## Tutorial Schedule

	Date	Time	Location	Hours
TUT #1	Oct 5 <sup>th</sup> , 2017	6:30 pm – 9:30 pm	SEB 1004/1012/1015	3
TUT #2	Oct 12 <sup>th</sup> , 2017	6:30 pm – 9:30 pm	SEB 1004/1012/1015	3
TUT #3 (Case Study #1)	Oct 19 <sup>th</sup> , 2017	6:30 pm – 9:30 pm	SEB 1004/1012/1015	3
TUT #4 (Case Study #2)	Oct 26 <sup>th</sup> , 2017	6:30 pm – 9:30 pm	SEB 1004/1012/1015	3
TUT #5 (Case Study #3)	Nov 2 <sup>nd</sup> , 2017	6:30 pm – 9:30 pm	SEB 1004/1012/1015	3
TUT #6 (Project Consultation)	Nov 9 <sup>th</sup> , 2017	6:30 pm – 9:30 pm	SEB 1004/1012/1015	3
TUT #7 (Project Consultation)	Nov 16 <sup>th</sup> , 2017	6:30 pm – 9:30 pm	SEB 1004/1012/1015	3
TUT #8 (Project Consultation)	Nov 23 <sup>rd</sup> , 2017	6:30 pm – 9:30 pm	SEB 1004/1012/1015	3
<b>Term Project Submission</b>	Dec 7 <sup>th</sup> , 2017			



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**NOTE: Project Site Tour – TBD, 2016 during the 2<sup>nd</sup> Project Consultation session**

## **Texts & References:**

Project Management - Gray and Larson 6<sup>th</sup> Edition  
Project Management Body of Knowledge (PMBOK) 5<sup>th</sup> edition

## **Evaluation:**

Laboratories (5):	20%
Project (1)	40%
Final Examination	40%
<b>Total</b>	<b>100%</b>

## **Notes on Projects and Laboratories (papers and reports):**

- Must be academic in style and content
- Must have a clear focus
- Must present ideas in a logical and well thought-out flow
- Arguments, analysis and conclusions must be based on clearly identified research and sources
- Must be in paragraph format
- Must be double-spaced, and typewritten (applies to projects only, not laboratory work)
- Must cite all references from other sources (applies to projects only, not laboratory work)

## **Grading:**

A+	90-100	One could scarcely expect better from a student at this level
A	80-89	Superior work which is clearly above average
B	70-79	Good work, meeting all requirements, and eminently satisfactory
C	60-69	Competent work, meeting requirements
D	50-59	Fair work, minimally acceptable
F	below 50	Fail

## **Policy on Cheating and Academic Misconduct:**

Academic honesty is a cornerstone of conduct at The University of Western Ontario. We cannot have freedom of expression without integrity. Students are responsible for understanding the nature of and avoiding the occurrence of plagiarism and other academic offences; please refer to the section on "Scholastic Offences" in the current University Academic Calendar, or on the web at <http://www.westerncalendar.uwo.ca>. Such offences include plagiarism, cheating on an examination, submitting false or fraudulent assignments or credentials, impersonating a candidate, or submitting for credit in any course any academic work for which credit has previously been obtained or is being sought in another course in this University or elsewhere (without the knowledge and approval of the instructor to



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whom the work is submitted). If you are caught cheating there will be no second warning. Academic penalties will be applied up to and possibly including expulsion from the program.

## **How often will the instructor communicate with me?**

The instructor will be available to meet every evening for ½-1 hour after each lecture either in the classroom or in assigned office space. Any student may raise any issue at this time without the need for an appointment. Students will note the published schedule included herein. Supplemental arranged meetings are possible, but may require several days advance co-ordination.

The instructor will also be available via e-mail. Their addresses can be found on the course web site under the messages tab. The instructor will check e-mail a minimum of 3 times per week and the students should as well. E-mail will be checked at minimum once per weekend, as well as once early in the work week, and once late in the work week. All e-mails will receive a response. For detailed comprehensive responses, bring forward questions that affect the entire group. These are the preferred type of questions to be brought forward. Detailed questions relating to your work specifically will receive individually tailored responses.

Please feel free to initiate supplementary Owl Sakai chats with the instructor by sending an e-mail or arranging a time.

The students will not typically have text or telephone access to the instructor although this can be arranged if the necessity arises.

## **How do I hand in Laboratories?**

All laboratory work will be submitted electronically through Owl Sakai using the assignment tab in the course area. Failure to meet deadlines without the instructor's written permission will result in a reduction of marks. Labs received after the due date will be reduced 25% per day (including weekends). Except in exceptional circumstances, approved by the instructor before the due date, Labs more than 3 days late will not be accepted and a mark of 0% will be assigned.

## **The 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 the improper use of English. In addition, poor written work, with the exception of final examinations may be returned without grading. If resubmission of the work is permitted, it may be graded with marks deducted for poor English and late submission.

## **Attendance**

Any student, who in the opinion of the instructor, is absent too frequently from class or laboratory periods in any course, 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



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taking the regular examination in the course.

## **Conduct**

Students are expected to arrive at lectures on time, and to conduct themselves during class in a professional and respectful manner that is not disruptive to others.

## **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. The student should seek advice from the instructor or Department Chair immediately 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 affect on any appeal.

## **Owl Sakai Help - Who to contact**

### 1) Application Problems

If you have problems with an application on this system please call the Help Desk at **(519) 661-2111 extension 83800**.

### 2) ITS Help Page: [Owl Help and Support](#)

## **Confidentiality and University Indemnification**

The University of Western Ontario, Kevin McGuire & Salem El Harakeh (your instructors), and your classmates take no responsibility for the confidentiality of information that you present in any educational context, such as online, in-class or in your submissions or postings.

It is up to you, the student, to ensure that you are not breaching any confidentiality situations with any information you present including those which might pertain to ongoing research of which you are a part of or have been a part of in the past.



**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. (SEE THE 2017 UWO ACADEMIC CALENDAR).

**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 exam that is worth MORE THAN 10% of your final grade, you will report to the Undergraduate Services Office, SEB 2097. Otherwise, you will report to your department office to request relief.
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 MORE THAN 10% of your final grade you will report to the Undergraduate Services Office, SEB 2097 to request relief. Otherwise, you will report to your department office 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.

**N.B. 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 Associate Dean 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. 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.

## 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 the academic counsellor in your Department or Ms. Karen Murray in the Undergraduate Services Office, if you are in first year.

## 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 2017 Western Academic Calendar available at [www.westerncalendar.uwo.ca](http://www.westerncalendar.uwo.ca).

Absences Due to Illness: <http://westerncalendar.uwo.ca/2017/pg117.html>

Academic Accommodations for Students with Disabilities: <http://westerncalendar.uwo.ca/2017/pg118.html>

Academic Accommodations for Religious or Holy Days: <http://westerncalendar.uwo.ca/2017/pg119.html>

Course Withdrawals: <http://westerncalendar.uwo.ca/2017/pg157.html>

Examinations: <http://westerncalendar.uwo.ca/2017/pg129.html>

Scheduling of Term Assignments: <http://westerncalendar.uwo.ca/2017/pg135.html>

Scholastic Offences: <http://www.westerncalendar.uwo.ca/2017/pg111.html>

Student Medical Certificate: [http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/medicalform.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf)

Engineering Academic Regulations: <http://www.westerncalendar.uwo.ca/2017/pg1442.html>

**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.

### **Drop Deadlines:**

First term half course (i.e. "A" or "F"):	November 5, 2017
Full courses and full-year half courses (i.e. "E", "Y" or no suffix):	November 30, 2017
Second term half or second term full course (i.e. "B" or "G"):	March 7, 2017

### **Contact Information:**

Undergraduate Services Office:	SEB 2097	Telephone: (519) 661-2130	E-mail: <a href="mailto:engugrad@uwo.ca">engugrad@uwo.ca</a>
Dept. of Chemical and Biochemical Engineering & Green Process Engineering:	TEB 477	Telephone: (519) 661-2131	E-mail: <a href="mailto:cbeugrad@uwo.ca">cbeugrad@uwo.ca</a>
Dept. of Civil and Environmental Engineering:	SEB 3005	Telephone: (519) 661-2139	E-mail: <a href="mailto:civil@uwo.ca">civil@uwo.ca</a>
Dept. of Electrical and Computer Engineering, Software Engineering & Mechatronics Engineering:	TEB 279	Telephone: (519) 661-3758	E-mail: <a href="mailto:eceugrad@uwo.ca">eceugrad@uwo.ca</a>
Dept. of Mechanical and Materials Engineering:	SEB 3002	Telephone: (519) 661-4122	E-mail: <a href="mailto:mmeundergraduate@uwo.ca">mmeundergraduate@uwo.ca</a>