

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

**ES 4498G-001: Engineering Ethics, Sustainable Development and the Law
Course Outline – Winter 2016**

This course introduces students to principles of professional engineering practice, ethical conduct, applicable laws, sustainable development and equity. The general objectives are for the student, upon completion, to be able to:

- Identify, analyse and solve ethical dilemmas in accordance with the Engineers Code of Ethics;
- Develop an awareness of good ethical and professional practices, and appreciate professional responsibility issues while working individually or functioning on a team;
- Apply knowledge of PEO’s environmental guidelines to the appraisal of engineering projects and analysis of engineering cases;
- Improve communication skills by presenting a professional view point on ethical and sustainability development issues in a professional and logical manner;
- Develop awareness of equity issues in the workplace, and appreciate professional responsibility issues;
- Recognize the need for life-long learning to keep abreast of applicable ethical, legal sustainability and equity standards and practices.

Calendar Copy: This course will cover professionalism, ethical theory, the code of ethics and enforcement, the environment and sustainable development, and contracts.

Prerequisites: Completion of third year of the Engineering program.

Contact Hours: Three lecture hours per week for 14 weeks, 0.5 course.

Instructors:

Dr. Solomon Asantey P.Eng.
sasantey@uwo.ca
Room SEB 3117
Section 001

Required Texts:

- Andrews, C. Gordon. **Canadian Professional Engineering and Geoscience: Practice and Ethics.** 5th Edition, Toronto: Nelson, 2014.
- Marston, D. L. **Law for Professional Engineers.** 4th edition, Toronto: McGraw-Hill, Ryerson, 2008.
- **ES 4498G 2016 Course Readings.**

General Learning Objectives:

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

Evaluation:	Position Paper	20%
	Term Test (in class)	20%
	Case Study	20%
	Class Participation	10%
	Final Examination	30%

- 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 test or exam conflict with a religious holiday that a student wishes to observe, the student must inform the Department 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. Tests and Examinations:

Term Test: An in-class Closed Book Term Test will be held at 7:00 pm on Feb 29, 2016.

Final Examination: A 3-hour Closed Book final examination will be held during examination week (Week 15).

2. Written Assignments

All written assignments are due by 7:00 p.m. on the date noted on the assignment sheet. The assignments must be submitted in class or to the assigned locker announced in class by 7:00 p.m. of the due date. Assignments must also be submitted online to the New OWL and turnitin.com by the due date.

Assignments submitted late (paper copy or electronic version) will be subject to a penalty of 5 marks per day to a maximum of 4 days. Assignments that are more than 4 days late will receive a mark of zero.

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.

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:

http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_undergrad.pdf

Attendance:

Any student who, in the opinion of the instructor, is absent too frequently from class 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 Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation.

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. Late comers may be asked to wait outside the classroom 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>

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

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 in class or during tutorial sessions. Office 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.

ES 4498G - 001 Course Breakdown:

Complementary Studies = 100%

Tentative Course Schedule:

Module 1:	Professionalism, Ethical Theory, The Code, and Enforcement
Week 1 (Jan 4)	Course Introduction The nature of Professionalism, Professional Ethics and Basic Ethical Theory
Week 2 (Jan11)	Library Resources Presentation Ethical Theory, Ethical Dilemmas, Historical Antecedents, Development of the Code of Ethics, Introduction to Ontario Regulation 941, “The Engineer’s Act”
Week 3 (Jan18)	Definition of Negligence, Misconduct, and Incompetence: Regulation and Licensing Discipline and Enforcement: Case Studies - Presentation
Week 4 (Jan25)	Professional and Ethical Issues for Engineers in Industry
Week 5 (Feb 1)	Professional and Ethical Issues for Engineers in Management, Hiring and Dismissal Managing Discrimination, Harassment, Intellectual Property, Plagiarism Professional and Ethical Issues for Engineers in Private Practice and Consulting
Module2:	The Law
Week 6 (Feb 8)	Position Paper Due 7:00 pm, February 8, 2016 Introduction to legal theory The Canadian legal system, Canadian Constitution Tort Law development and principles
Week7 (Feb 15)	Reading Week/ Winter Break - No class
Week 8 (Feb 22)	Tort Law cases, Limitation Periods
Week 9 (Feb 29)	Term Test (during class) 7:00 pm, Feb 29, 2016 Introduction to Contract Law and Key Elements Discharge, Interpretation, Remedies Contract Law cases
Module 3:	The Environment, Sustainable Development and Risks
Week10 (Mar 7)	Environmental Laws, PEO Environmental Guidelines Sustainable Development, History, Scale of Challenge, Implementation
Week 11 (Mar 14)	Ethical Aspects of Risk Assessment and Risk Management Environmental Ethics
Week 12 (Mar 21)	Case Study/Sustainability Paper Due 7:00 p.m. March 21, 2016
Module 4:	Equity
Week 13 (Mar 28)	Social Justice and Challenge, Racism, Equity in Workplace,
Week 14 (Apr 4)	Course Review
Week 15	Final Examination (TBA)

*The course schedule is approximate and does not list all of the topics that will be covered in class. Due dates are definite; New OWL may show different dates, but the course outline lists the correct dates.

Suggested Readings:

- Class 1 Course notes, Andrews: ch. 1
- Class 2 Course notes, Andrews: ch. 2 – 5
- Class 3 Course notes, Andrews: ch. 6, 12
- Class 4 Andrews: ch. 9, 10, 13
- Class 5 Andrews: ch. 7, 14
- Class 6 Marston: ch 1, 2, 4
- Class 8 Marston: ch 5 – 14, appendix
- Class 9 Marston: ch 15 – 22, 30
- Class 10 Course notes
- Class 11 Course notes, Andrews: ch. 15, 16
- Class 12 Course notes, Andrews: ch 17

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 ACCOMMODATION 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 ACCOMMODATION WILL BE CONSIDERED. DIFFERENT REGULATIONS APPLY TO TERM TESTS, FINAL EXAMINATIONS AND LATE ASSIGNMENTS. READ THE INSTRUCTIONS CAREFULLY. (SEE THE 2015 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 accommodation.
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 accommodation. Otherwise, you will report to your department office to request accommodation.
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 problems, check your course outlines for information regarding attendance requirements and make sure you are not missing a test 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 doctors 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 2015 Western Academic Calendar available at www.westerncalendar.uwo.ca.

Absences Due to Illness: <http://www.westerncalendar.uwo.ca/2015/pg117.html>
Academic Accommodations for Students with Disabilities: <http://www.westerncalendar.uwo.ca/2015/pg118.html>
Academic Accommodations for Religious or Holy Days: <http://www.westerncalendar.uwo.ca/2015/pg118.html>
Course Withdrawals: <http://www.westerncalendar.uwo.ca/2015/pg157.html>
Examinations: <http://www.westerncalendar.uwo.ca/2015/pg129.html>
Scheduling of Term Assignments: <http://www.westerncalendar.uwo.ca/2015/pg97.html>
Scholastic Offences: <http://www.westerncalendar.uwo.ca/2015/pg113.html>
Student Medical Certificate: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf
Engineering Academic Regulations: <http://www.westerncalendar.uwo.ca/2015/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, 2015
Full courses and full-year half courses (i.e. "E", "Y" or no suffix):	November 30, 2015
Second term half or second term full course (i.e. "B" or "G"):	March 7, 2016

Contact Information:

Undergraduate Services Office:	SEB 2097	Telephone: (519) 661-2130	Fax: (519) 661-3757
Dept. of Chemical and Biochemical Engineering & Green Process Engineering:	TEB 477	Telephone: (519) 661-2131	Fax: (519) 661-3498
Dept. of Civil and Environmental Engineering:	SEB 3005	Telephone: (519) 661-2139	Fax: (519) 661-3779
Dept. of Electrical and Computer Engineering, Software Engineering & Mechatronics Engineering:	TEB 279	Telephone: (519) 661-3758	Fax: (519) 850-2436
Dept. of Mechanical and Materials Engineering:	SEB 3002	Telephone: (519) 661-4422	Fax: (519) 661-3020