

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

**ES 4498F – Engineering Ethics, Sustainable Development and the Law  
Course Outline – Summer 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 to become 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 an 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 contracts and risk.

**Prerequisites:** Completion of third year of the Engineering program.

**Contact Hours:** Three lecture hours per week for 6 weeks, 0.5 course.

**Instructor:** Dr. Solomon Asantey P.Eng., Room 3117, SEB, [sasantey@uwo.ca](mailto:sasantey@uwo.ca)

**Required Texts:**

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

**General Learning Objectives:**

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

E=Evaluate, T=Teach

**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 assignment, test or participation marks from previous years. Previously completed assignments 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](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 June 8, 2018.

Final Examination: A 3-hour Closed Book final examination will be held during the final week, Week 6.

### **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.

Late assignments (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](http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_undergrad.pdf)

### **Attendance:**

Due to the compressed nature of the course, **students are not allowed to miss more than one class session.** Any student who misses two or more class sessions 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](http://www.uwo.ca/univsec/handbook/appeals/accommodation_medical.pdf)

**Notice:**

Students are responsible for regularly checking their email, course website (<http://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. Office hours will be arranged for the students to see the instructor and teaching assistants.

**Course breakdown:**

Complementary Studies = 100%

The document “INSTRUCTIONS FOR STUDENTS UNABLE TO WRITE TESTS OR EXAMINATIONS OR SUBMIT ASSIGNMENTS AS SCHEDULED” is part of this course outline.

## Course Schedule:

### Module 1: Professionalism, Ethical Theory, The Engineers Act and Code, Enforcement

Week 1	Course Introduction The nature of Professionalism, Professional Ethics and Basic Ethical Theory <b>Library Resources Presentation</b> Ethical Theory, Ethical Dilemmas, Historical Antecedents, Development of the Code of Ethics, Introduction to Ontario Regulation 941, “The Engineer’s Act” Definition of Negligence, Misconduct, and Incompetence: Regulation and Licensing
Week 2	Discipline and Enforcement: Case Studies - Presentation Professional and Ethical Issues for Engineers in Industry Professional and Ethical Issues for Engineers in Industry 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 3	<b>Position Paper Due 7:00 pm, May 30, 2016</b> Introduction to legal theory, The Canadian legal system, Tort Law development and principles Tort Law cases, Limitation Periods
Week 4	Introduction to Contract Law and Key Elements Discharge, Interpretation, Remedies, Contract Law cases <b>Term Test 7:00 pm, June 8, 2016</b>

### Module 3:

Week 5	<b>The Environment and Sustainable Development</b> Environmental Laws, PEO Environmental Guidelines Sustainable Development, History, Scale of Challenge Ethical Aspects of Risk Assessment, Risk Management, Environmental Ethics <b>Case Study/Sustainability Paper Due 7:00 p.m. June 15, 2016</b>
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### Module 4: Equity

Week 6	Equity, Social Justice, Social Challenge, Racism Equity in Workplace , Course Review <b>Final Examination - 7p.m. June 22, 2016</b>
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\*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 .....	Andrews: ch. 1
Class 2 .....	Andrews: ch. 2 – 5
Class 3 .....	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