

## ESC301Y: Engineering Science Option Seminar 2015-16

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Wednesdays 5-6PM

The Option Seminar, which is a full-year course, supports discipline-specific discussions of the following six themes:

- ethics and equity
- sustainability
- professionalism
- safety, codes and standards
- research
- design

A series of program-wide lectures and activities will support three key assignments in the course, while students will also attend option-specific sessions throughout the year, as scheduled by the option chair (see the schedule below, and please note your option chair will correspond with you directly about your option-specific sessions and any updates to the schedule).

This course is offered on a credit/no credit basis and the assessment will be through a combination of short assignments and attendance.

### Course Coordinator:

Matthew Strohack (Engineering Communications Program)

[m.strohack@utoronto.ca](mailto:m.strohack@utoronto.ca)

Option-specific activities are coordinated by the Option Chairs (see Table 2 below)

### Course Activities:

Please note that attendance will be taken at all sessions. In the table below, the bolded sessions are program-wide (all Engineering Science students enrolled in ESC301). Locations for the option-specific sessions are located in Table 2. Option-specific sessions will be scheduled by the Option Chair.

**Table 1: ESC301 Schedule of Activities**

Fall	Session Theme	Location
<b>Wed Sep 16</b>	<b>Introduction to the Option Seminar Course</b>	<b>WB 116</b>
Wed Sep 23	Option-specific (lead by your option chair)	
<b>Wed Sep 30</b>	<b>Life-long Learning with Professor Bryan Karney</b>	<b>WB116</b>
Wed Oct 7	Option-specific (lead by your option chair)	
Wed Oct 14	Option-specific (lead by your option chair)	
Wed Oct 21	Option-specific (lead by your option chair)	
<b>Wed Oct 28</b>	<b>Ethics with Applications to the EngSci Options</b>	<b>TBA</b>
<b>Wed Nov 4</b>	<b>Equity with Applications to the EngSci Options</b>	<b>TBA</b>
Wed Nov 11	Option-specific (lead by your option chair)	
Wed Nov 18	Option-specific (lead by your option chair)	

<b>Wed Nov 25</b>	<b>Sustainability in the EngSci Options</b>	<b>TBA</b>
<b>Wed Dec 2</b>	<b>Sustainability in the EngSci Options</b>	<b>TBA</b>
Wed Dec 9	Option-specific (lead by your option chair) *Last day of classes	
<b>Winter</b>	<b>Session Theme</b>	<b>Location</b>
<b>Wed Jan 6</b>	<b>Engineering and the Law</b>	<b>WB116</b>
Wed Jan 13	Option-specific (lead by your option chair)	
Wed Jan 20	Option-specific (lead by your option chair)	
<b>Wed Jan 27</b>	<b>Preparing for Thesis</b>	<b>WB 116</b>
Wed Feb 3	Option-specific (lead by your option chair)	
Wed Feb 10	Option-specific (lead by your option chair)	
<b>Wed Feb 17</b>	<b>No Sessions. Reading Week.</b>	
Wed Feb 24	Option-specific (lead by your option chair)	
Wed Mar 2	Option-specific (lead by your option chair)	
<b>Weeks of March 9/16/23</b>	<b>Literature Review Workshop with Peer Review (1-hour sessions)</b>	<b>TBA</b>
<b>Wed March 30</b>	<b>Engineering Design: Bridging Foundation to Option</b>	<b>WB 116</b>
Wed April 6	Option-specific (lead by your option chair)	

**Table 2: Option Chairs and Option-Specific Room Numbers**

<b>Options</b>	<b>Option Chair</b>	<b>Room Number</b>
TUT #: Aerospace	Davis, Jim	TBA
TUT #: Biomedical	Truong, Kevin	TBA
TUT #: Electrical and Computer	Sheikholeslami, Ali	TBA (Fall) TBA (Spring)
TUT #: Infrastructure	Collins, Michael	TBA
TUT #: Physics	Bailey, David	TBA
TUT #: Energy	Karney, Bryan	TBA
TUT #: Math, Stats, and Finance	Kwon, Roy	TBA
TUT # Robotics	Nejat Goldie, and Barfoot Tim	TBA

### **Course Assessment:**

Credits are earned in ESC 301 on a pass/fail basis. However, assignments will receive a grade that will be used to determine pass/fail status. A cumulative grade below 50% will receive a fail; any grades above 50% will pass. Transcripts will show credit or non-credit only. Assigned grades will not appear.

To pass the course, students must also complete and submit all three assignments, and attend a minimum of 70% of all sessions.

Students will be assessed in three key areas, which are directly linked to the new Engineering Graduate Attributes from the Canadian Engineering Accreditation Board (CEAB). Assignments will be submitted directly to Turnitin.com. Support for the assignments will be offered by Matthew Strohack and the course TAs (TBA). A description of the course assignments can be found in Table 3, along with their associated Graduate Attributes and learning objectives.

### **Assignments:**

Assignment	Weight	Due Date
Ethics and Equity Response Paper	30%	TBA
Environmental Impact Analysis	30%	TBA
Literature Review	40%	TBA

**Assignment Policies:**

All assignments must be submitted by the date and time indicated. With the exception of medically certified illness (doctor’s note), late assignments will receive a 20% deduction per day, including weekends and holidays.

Students are reminded that they are expected to adhere to the “Code of Behaviour on Academic Matters”, available online at:

[http://www.undergrad.engineering.utoronto.ca/Advising\\_Support/Code\\_of\\_Behaviour\\_on\\_Academic\\_Matters.htm](http://www.undergrad.engineering.utoronto.ca/Advising_Support/Code_of_Behaviour_on_Academic_Matters.htm)

They are also expected to adhere to the “Code of Student Conduct”, available online at:

<http://www.viceprovoststudents.utoronto.ca/publicationsandpolicies/codeofstudentconduct.htm>

Students are also encouraged to explore and consult with the University of Toronto Academic Integrity Office or course coordinator if they have any questions or concerns regarding academic integrity, and in particular plagiarism. Further information on the Integrity Office can be found online at: <http://sites.utoronto.ca/academicintegrity/resourcesforstudents.html>. A particularly helpful resource is the “Academic Integrity” volume of the “Students Rights & Responsibilities Series”. This resource outlines different types of academic offences, describes the process by which an academic offence is resolved, and informs students of their rights and responsibilities with respect to the procedures outlined in the Code of Behaviour on Academic Matters.

**Table 3: Course Assignments and Learning Objectives**

Topic/Attribute	Graduate Attribute Learning Objectives	Assessment
Ethics and Equity	<ul style="list-style-type: none"> <li>-Articulate the issues involved in ethical case studies (given a case study)</li> <li>-Analyze a case, describe and defend an appropriate response in which the Code of Ethics is applied</li> <li>-Articulate the issues involved in case studies involving equity problems</li> </ul>	A. Written response to an option-relevant ethics case and an equity question (Due Wed Nov 12)
Impact of Engineering on the Environment	<ul style="list-style-type: none"> <li>-Identify and evaluate the potential risks (likelihood and consequences) to human health and the environment of an engineering product or activity relevant to the student's discipline</li> <li>-Identify the possible social, cultural, environmental and human-health related impacts over the life-cycle of an engineering product or activity relevant to the student's discipline</li> <li>-Apply principles of sustainability to an engineering activity or product relevant to the student's discipline</li> </ul>	B. Written piece about environmental impact and human protection considerations in a recent development relevant to the option (Due Wed, Dec 3)
Professionalism	<ul style="list-style-type: none"> <li>-Identify and describe various engineering roles; particularly as pertains to protection of the public and public interest</li> <li>-Identify the possible social, cultural, environmental and human-health related impacts over the life-cycle of an engineering product or activity relevant to the student's discipline</li> <li>-Consider the entire life cycle within such an explanation including risk to the public, and the environment</li> <li>-Identify relevant viewpoints and stakeholders in an engineering activity</li> </ul>	
Professionalism Communication Life-Long Learning	<ul style="list-style-type: none"> <li>-Demonstrate RAGAGEP (Recognized as Generally Accepted Good Engineering Practice) appropriate to the discipline, including regulations, standards, guidelines, quality of written work</li> <li>-Recognize credible evidence in support of claims, whether the evidence is presented in written, oral or visual form (reading)</li> <li>-Organize written or spoken material– to structure overall elements so that their relationship to a main point and to one another is clear</li> <li>-Create “flow” in a document or presentation – flow is a logical progression of ideas, sentence to sentence and paragraph to paragraph</li> <li>-Summarize the key points in an assigned reading</li> </ul>	D. Conduct a 1-2 page literature review on 3-4 papers in an option-related research area. This may serve as an effective introduction to the fourth year thesis or a capstone design project. (Due Fri, Apr 10)