

Western University
Faculty of Engineering
John M. Thompson Centre for Engineering Leadership and Innovation

ELI 9400 – Engineering Leadership

COURSE OUTLINE 2025-2026

DESCRIPTION

This course addresses topics unique to engineering leadership: technology impact, challenges of interdisciplinarity, factors and outcomes related to engineering design and the disruption of existing norms. Students engage in case studies; reflective, analytic, synthesis writing and presentations throughout the term; and a mini-inquiry project to explore a topic of choice.

ENROLLMENT RESTRICTIONS

Enrollment in this course is restricted to graduate students registered in an M.Eng. program at Western University

INSTRUCTOR CONTACT INFORMATION

Course instructor:

Email address:

Office:

Office hours: By appointment

COURSE FORMAT

In-person (location available on course OWL site)

TOPICS

Topic #	Description	Learning Activities	Tentative timeline
1	Introduction to Engineering Leadership Multi-Modal Framework vs. Reductionism	<ul style="list-style-type: none">• Lectures• Practice quiz• Case study• Reflection Assignment	Weeks 1-3
2	Approach to Organizational Leadership: Leader Character, Discourse, Sociotechnical Systems Design Principles	<ul style="list-style-type: none">• Lectures• Case studies• Additional reading material• Team presentation	Week 4-7
3	Competing Paradigms Regarding Technology & Implications for Engineering Leadership	<ul style="list-style-type: none">• Lectures• Writing workshop• Essay Assignment	Weeks 5-10

4	Conceptual Integration and Original Insights	<ul style="list-style-type: none"> • Video presentations • Collective insight generation activity • Post-course survey 	Weeks 11-13
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SPECIFIC LEARNING OUTCOMES

Degree Level Expectation	Weight	Assessment Tools	Outcomes
Depth and breadth of knowledge	20%	<ul style="list-style-type: none"> • Quizzes • All Assignments and Presentations 	<ul style="list-style-type: none"> • Provide a working definition of leadership in and through engineering, challenging reductionistic views of technology, people, and engineering impact • Describe how leader character impacts leadership approaches and decision making during crisis situations and in driving change • Select and adapt leadership approach or strategies appropriate to particular situations, appropriately addressing the visible and hidden aspects of organizational culture
Research & scholarship	5%	<ul style="list-style-type: none"> • Module 3 Assignment 	<ul style="list-style-type: none"> • Provide a working definition of leadership in and through engineering, challenging reductionistic views of technology, people, and engineering impact
Application of knowledge	40%	<ul style="list-style-type: none"> • All Assignments and Presentations 	<ul style="list-style-type: none"> • Apply the analytic frameworks in case studies, reflection assignments, and engineering leadership philosophy statement • Generate actionable insights, and develop concrete practice strategies for reasonable, contextually-sound implementation
Professional capacity / autonomy	10%	<ul style="list-style-type: none"> • Project 	<ul style="list-style-type: none"> • Identify the influence of, and ways to work well with, diversity in personality traits as they bear upon communication, conflict management and performance • Determine action strategies to enhance one's capability for engineering leadership, building on greater awareness of self and others • Select and adapt leadership approach or strategies appropriate to particular situations, appropriately addressing the visible and hidden aspects of organizational culture
Communication skills	20%	<ul style="list-style-type: none"> • Class Participation & Contribution • Module 2 and Module 4 Presentations 	<ul style="list-style-type: none"> • Ability to communicate (oral and/or written) ideas, issues, results and conclusions clearly and effectively

Awareness of limits of knowledge	5%	<ul style="list-style-type: none"> Module 2 and Module 4 Presentations 	<ul style="list-style-type: none"> Identify one's own strengths and limitations in engineer leader competencies and leader character; develop an awareness of the factors behind one's own actions and responses Describe how leader character impacts leadership approaches and decision making during crisis situations and in driving change
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ASSESSMENTS

Assessment Type	Material Covered	Tentative Due Date	Weight
Quizzes (three best of four)	Topics 1-4	Weeks 2, 5, 8, 11	18%
Module 1 Reflection Essay	Topic 1	Week 3	15%
Module 2 Case Study Presentation (team)	Topic 2	Week 7	15%
Module 3 Engineering Leadership Philosophy statement	Topic 3	Week 10	20%
Module 4 Presentation & Collective Insight/Feedback	Topic 4	Weeks 12-13	20%
Participation and Contribution	Topics 1-4	Weeks 1-13	12%
Total			100%

Activities in which collaboration is permitted:

- Case studies: peer discussion, presentation development, presentation delivery
- Collective Insight activity in Module 4

Activities in which students must work alone (collaboration is not permitted):

- All quizzes (Modules 1-4)
- All individual written assignments (Modules 1, 3)
- 3-Minute Presentation (recorded video) in Module 4

REQUIRED TEXTBOOK

There is no required textbook for this course. Lecture materials and references will be made available on OWL.

OPTIONAL COURSE READINGS

Available through Western Libraries:

- Schön, D. A. (1983). *The reflective practitioner : how professionals think in action*. Basic Books.

- Pasmore, W., Winby, S., Mohrman, S. A., & Vanasse, R. (2019). Reflections: Sociotechnical Systems Design and Organization Change. *Journal of Change Management*, 19(2), 67–85. <https://doi.org/10.1080/14697017.2018.1553761>
- Patterson, K. (2013). *Crucial accountability: tools for resolving violated expectations, broken commitments, and bad behavior* (Second Edition.). McGraw-Hill.
- Crossan, M. M., Seijts, G. H., & Gandz, J. (2016). *Developing leadership character*. Routledge.
- Poel, I. van de, & Royakkers, L. M. M. (2011). *Ethics, Technology, and Engineering : An Introduction*. Wiley-Blackwell.

Other resources will be made available according to the class progress and topics of inquiry.

EXTRA COURSE INFORMATION

1. The instructor reserves the right to adjust individual marks on group assessments based on (a) team documentation, and (b) collective observations of student contributions to group assignments and participation in class.
2. The instructor reserves the right to adjust course content, due dates and/or delivery if required to meet Faculty, program and course academic objectives or to respond to unanticipated events.

COURSE-SPECIFIC POLICIES

1. **LATE PENALTIES. In ELI 9400, all submissions except quizzes and presentations will have a grace period of 48 hours from the original due date. This accounts for academic consideration circumstances; no separate Academic Consideration Requests will be accepted.** After the grace period, late submissions will be penalized per the list below.
 - a. Up to 24 hrs late after grace period: 20% Penalty
 - b. Beyond 24 hrs late after grace period: Submissions will not be accepted; score of 0 will be assigned
2. **MISSED IN-CLASS ASSESSMENTS.** Presentations must be given on the assigned dates, and quizzes must be completed on the assigned dates. Any **academic consideration requests** for these **synchronous** assessments must be **approved by the student's home department**.
3. **REQUIRED FOR COURSE CREDIT (Essential Assessments).** **A student will not earn the course credit for ELI 9400 without a passing grade (after any necessary adjustments) in at least one essay assignment, and at least two quizzes.** Failure to satisfy these essential course assessments will result in students receiving a final grade that does NOT exceed 48%.

CHEATING, PLAGIARISM/ACADEMIC OFFENCES

Academic integrity is an essential component of learning activities. Students must have a clear understanding of the course activities in which they are expected to work alone (and what working alone implies) and the activities in which they can collaborate or seek help; see information above and ask instructor for clarification if needed. Any unauthorized forms of help-seeking or collaboration will be considered an academic offense. University policy states that cheating is an academic offence. If you are caught cheating, there will be no second warning. Students must write

their essays and assignments in their own words. Whenever students take an idea or a passage of text from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence. Academic offences are taken seriously and attended by academic penalties which may include expulsion from the program. Students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence at the following website: https://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_grad.pdf

All required papers may be subject to submission for textual similarity review to the commercial plagiarism-detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

CONDUCT

Students are expected to follow proper etiquette to maintain an appropriate and respectful academic environment. Any student who, in the opinion of the instructor, is not appropriately participating in course activities and/or is not following the rules and responsibilities associated with the course activities, will be reported to the Associate Dean (Graduate) (after due warning has been given). On the recommendation of the Department concerned, and with the permission of the Associate Dean (Graduate), the student could be debarred from completing the assessment activities in the course as appropriate.

HEALTH/WELLNESS SERVICES

As part of a successful graduate student experience at Western, we encourage students to make their health and wellness a priority. Western provides several health and wellness related services to help you achieve optimum health and engage in healthy living while pursuing your graduate degree. Information regarding health- and wellness-related services available to students may be found at <http://www.health.uwo.ca/>.

Students seeking help regarding mental health concerns are advised to speak to someone they feel comfortable confiding in, such as their faculty supervisor, their program director (graduate chair), or other relevant administrators in their unit. Faculty of Engineering has a Student Wellness Counsellor. To schedule an appointment with the counsellor, contact Kristen Edwards (khunt29@uwo.ca) via confidential email and you will be contacted by our intake office within 48 hours to schedule an appointment.

Students who are in emotional/mental distress should refer to Mental Health Support at <https://www.uwo.ca/health/psych/index.html> for a complete list of options about how to obtain help.

SICKNESS

Students should immediately consult with the Instructor (for a particular course) or Associate Chair (Graduate) (for a range of courses) if they have problems that could affect their performance. The student should seek advice from the Instructor or Associate Chair (Graduate) regarding how best to deal with the problem. Failure to notify the Instructor or the Associate Chair (Graduate) immediately

(or as soon as possible thereafter) will have a negative effect on any appeal. Obtaining appropriate documentation (e.g., a note from the doctor) is valuable when asking for accommodation due to illness.

Students who are not able to meet certain academic responsibilities due to medical, compassionate or other legitimate reason(s), could request for academic consideration. The Graduate Academic Accommodation Policy and Procedure details are available at:

<https://www.eng.uwo.ca/graduate/current-students/academic-support-and-accommodations/index.html>

Please note that any academic considerations granted in this course will be determined by the instructor, in consultation with the academic advisors in your Faculty of Registration, in accordance with information presented in this course outline.

ACCESSIBLE EDUCATION WESTERN (AEW)

Western is committed to achieving barrier-free accessibility for all its members, including graduate students. As part of this commitment, Western provides a variety of services devoted to promoting, advocating, and accommodating persons with disabilities in their respective graduate program. Graduate students with disabilities (for example, chronic illnesses, mental health conditions, mobility impairments) are strongly encouraged to register with Accessible Education Western (AEW): http://academicsupport.uwo.ca/accessible_education/index.html

AEW is a confidential service designed to support graduate and undergraduate students through their academic program. With the appropriate documentation, the student will work with both AEW and their graduate programs (normally their Graduate Chair and/or Course instructor) to ensure that appropriate academic accommodations to program requirements are arranged. These accommodations include individual counselling, alternative formatted literature, accessible campus transportation, learning strategy instruction, writing exams and assistive technology instruction.

STATEMENT ON GENDER-BASED AND SEXUAL VIOLENCE

Western is committed to [working to end gender-based and sexual violence on campus and in our community](#) and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced gender-based or sexual violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts, [here](#). To connect with a case manager or set up an appointment, please contact support@uwo.ca.

USE OF GENERATIVE ARTIFICIAL INTELLIGENCE (AI)

The use of generative AI tools is strictly prohibited for the writing of individual assignments. GenAI tools may be used for broad research of topics, but the students are responsible to check original sources and judging the quality of sources before using them as supportive evidence. Slide design and grammatical revision for small portions of your individual or group work may be permissible; detailed disclosure of used prompts is required.

You should keep date-stamped drafts of all your work, which may be required for submission should there be questions about the authenticity of your work.