ENGG*1070 Occupational Health and Safety

Fall 2019
Section(s): C01

School of Engineering
Credit Weight: 0.25
Version 1.00 - September 04, 2019

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1 Course Details

1.1 Calendar Description

This course presents the legal implications of occupational health and safety as expressed in the Environmental and Occupational Health and Safety Act, and exposes students to methodologies designed to ensure compliance with the Act. The course stresses safety initiatives and deals with specific safety issues such as noise levels, biosafety, hazardous waste management, safety in the workplace, radiation safety and industrial safety.

Restrictions: Registration in the BENG Program

1.2 Timetable

Lectures:
Mon, Fri 3:30pm - 4:20pm ALEX, Room 100

1.3 Final Exam

Thursday 2019-12-05 2:30-4:30 pm

Room TBA on Webadvisor

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2 Instructional Support

Instructor: Amin Komeili, Ph.D., PEng
Office: Richards Building Rm. 1509
Email: akomeili@uoguelph.ca
Office hours: Tuesday 10-11am or by appointment

2.1 Teaching Assistants

Teaching Assistant:	Stephen Vanderburgt
Email:	svanderb@uoguelph.ca
Office:	TBD in Courselink
Office Hours:	TBD in Courselink

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3 Learning Resources

3.1 Recommended Resources

Textbook (Textbook)
Brauer, R., Safety and Health for Engineers, 3th edition, Wiley, 2016.

3.2 Additional Resources

CourseWebsite: Course material, news, announcements, and grades will be regularly posted to the ENGG*1070 Courselink site. You are responsible for checking the site regularly.

Lecture Information: All the lecture notes are posted on Courselink. The lecture is the primary source of information for the course and certain topics will be more elaborated than presented in the textbook. Discussion and examples that may not be available from the textbook and posted lecture slides will also be presented during the lecture time to help you further understand the subject matter of the various topics. As such it is highly recommended that you attend the lectures.

Miscellaneous Information: Other information related to the course, assignments, and exams will be posted on the Courselink.

3.2 Communication and Email Policy

Please use lectures as your main opportunity to ask questions about the course. Assignment related questions should be directed to the TA, however, topics of a personal and confidential nature (e.g. marks) should be emailed to the instructor. Please note that all email communications must be made through your University of Guelph email account.

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4 Learning Outcomes

This course will provide an introduction to occupational health and safety (OHS) legislation, workplace hazards, and the administration of organizational health and safety practices. This course gives students the basic knowledge required to develop, and implement OHS regulations and programs that keep people safe on the job and maintain operational

equipment. This course provides exposure to different facets of the OHS profession, including:

- hazard anticipation, recognition, evaluation, and control
- risk management
- ergonomics
- construction safety
- emergency management
- incident investigation

4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Explain the importance of occupational health and safety.
2. Demonstrate an understanding of occupational health and safety legislation and standards in Ontario.
3. Understand the duties and responsibilities of the workplace parties in reporting and investigating incidents.
4. Identify, categorize, and discuss the various sources of workplace hazards and determine how to
   mitigate these hazards through engineering controls, administrative controls and personal protective
   equipment.
5. Analyze and illustrate the factors that contribute to incidents.
6. Explain methods and controls to prevent specific occupational safety and health calamities.
7. Compare the strategies and methods used to evaluate occupational safety and health.

4.2 Engineers Canada - Graduate Attributes (2018)

Successfully completing this course will contribute to the following:

#	Outcome	Learning Outcome
1	Knowledge Base	1, 2, 3
1.4	Recall, describe and apply program-specific engineering principles and concepts	1, 2, 3
2	Problem Analysis	3, 4, 5

#	Outcome	Learning Outcome
2.2	Identify, organize and justify appropriate information, including assumptions	3, 5
2.4	Execute an engineering solution	4
2.5	Critique and appraise solution approach and results	3, 4, 5
3	Investigation	4
3.1	Propose a working hypothesis	4
4	Design	4, 6
4.4	Evaluate alternative design solutions based on problem definition	4, 6
5	Use of Engineering Tools	3, 4
5.1	Select appropriate engineering tools from various alternatives	3, 4
7	Communication Skills	2, 7
7.1	Identify key message(s) and intended audience in verbal or written communication as both sender and receiver	7
7.4	Substantiate claims by building evidence-based arguments and integrating effective figures, tables, equations, and/or references	2
7.5	Demonstrate ability to process oral and written communication by following instructions, actively listening, incorporating feedback, and formulating meaningful questions	7
8	Professionalism	1, 7
8.1	Demonstrate an understanding of what it means to be a professional engineer and distinguish between legislated and non-legislated professions	1, 7
9	Impact of Engineering on Society and the Environment	2, 5, 6, 7
9.1	Analyze the safety, social, environmental, and legal aspects of engineering activity	2, 5, 7
9.2	Evaluate the uncertainties and risks associated with engineering activities	5, 6
9.3	Anticipate the positive and negative impacts of introducing innovative technologies to solve engineering problems	5
10	Ethics & Equity	2, 5, 6

#	Outcome	Learning Outcome
10.2	Determine an ethical course of action by applying ethical theories and the PEO Code of Ethics	5, 6
10.3	Demonstrate values consistent with good ethical practice, including equity, diversity, and inclusivity	2

5 Teaching and Learning Activities

5.1 Lecture

Week 1

Topics: Introduction & OHS Act

References: Ch 1, 2, 3

Learning Outcome: 1

Week 2

Topics: Hazards in the Workplace & Tools and Machines

References: Ch 9 & 13

Learning Outcome: 1, 4, 6

Week 3

Topics: Working at Heights (1) & (2)

References: extra

Learning Outcome: 3, 4, 6, 7

Week 4

Topics: Electrical Safety & Fire Protection

References: CH 12 & 16

Learning Outcome: 5, 6, 7

Week 5

Topics: Transportation Safety & **Midterm1**

References: Ch 14

Learning Outcome: 3, 4, 6

Week 6

Topics: Heat and Cold & Non-Ionizing Radiation

References: Ch 18 & Ch 21

Learning Outcome: 2, 3, 4, 5, 6

Week 7

Topics: Ionizing Radiation

References: Ch 22

Learning Outcome: 2, 3, 4

Week 8

Topics: Noise & PPE

References: Ch 23 & CH 27

Learning Outcome: 2, 3, 4, 6

Fri Nov 8 Midterm2

Week 9

Topics: Waste Management & **Midterm2**

References: Ch 28

Learning Outcome: 2, 3, 4, 5

Week 10

Topics: Ventilation & Confined & Restricted Spaces

References: Ch 25

Learning Outcome: 2, 3, 4, 5

Week 11

Topics: Safety Inspection

References: extra

Learning Outcome: 2, 3, 4, 5, 6

Week 12

Topics: Final Review

Learning Outcome: 3

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6 Assessments

Course Grading Policies:

If you are unable to meet an in-course requirement due to medical, psychological, or compassionate reasons, please email the course instructor. See the undergraduate calendar for information on regulations and procedures for Academic Consideration: http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml Accommodation of Religious Obligations: If you are unable to meet an in-course requirement due to religious obligations, please email the course instructor within two weeks of the start of the semester to make alternate arrangements. See the undergraduate calendar for information on regulations and procedures for Academic Consideration of Religious Obligations: http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-accomrelig.shtml

Missed term test: If you miss any of term tests due to grounds for granting academic consideration or religious accommodation, the weight of the missed term test will be added to the final exam weight. There will be no makeup term test.

Late Assignments: **Late submissions of assignments will not be accepted.**

Passing Grade: As per University policy, the minimum passing grade is 50%.

6.1 Marking Schemes & Distributions

Assignments 30%

Midterms 30%

Final exam 40%

6.2 Assessment Details

Assignments 1 (15%)
Date: Sun, Oct 13
The due date for assignment 1 is on Oct 13th at 11:00pm.

Assignment 2 (15%)
Date: Tue, Sep 17
The due date for assignment 2 is on Nov 17th at 11:00pm.

Term Test 1 (15%)
Date: Fri, Oct 11, 3:30 PM, ALEX100

Term Test 2 (15%)
Date: Fri, Nov 8, 3:30 PM, Alex 100

Final exam (40%)
Date: Thu, Dec 5, 2:30 AM, TBD on Webadvisor

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7 School of Engineering Statements

7.1 Instructor's Role and Responsibility to Students

The instructor’s role is to develop and deliver course material in ways that facilitate learning for a variety of students. Selected lecture notes will be made available to students on Courselink but these are not intended to be stand-alone course notes. Some written lecture notes will be presented only in class. During lectures, the instructor will expand and explain the content of notes and provide example problems that supplement posted notes. Scheduled classes will be the principal venue to provide information and feedback for tests and labs.

7.2 Students' Learning Responsibilities

Students are expected to take advantage of the learning opportunities provided during lectures and lab sessions. Students, especially those having difficulty with the course content, should also make use of other resources recommended by the instructor. Students who do (or may) fall behind due to illness, work, or extra-curricular activities are advised to keep the instructor informed. This will allow the instructor to recommend extra resources in a timely manner and/or provide consideration if appropriate.

7.3 Lab Safety

Safety is critically important to the School and is the responsibility of all members of the School: faculty, staff and students. As a student in a lab course you are responsible for taking all reasonable safety precautions and following the lab safety rules specific to the lab you are working in. In addition, you are responsible for reporting all safety issues to the laboratory supervisor, GTA or faculty responsible.

8 University Statements

8.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

8.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml

Graduate Calendar - Grounds for Academic Consideration
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions
https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml

8.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml

Graduate Calendar - Registration Changes
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml

Associate Diploma Calendar - Dropping Courses
https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml

8.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance and not later than the 40th Class Day.

For Guelph students, information can be found on the SAS website
https://www.uoguelph.ca/sas

For Ridgetown students, information can be found on the Ridgetown SAS website
https://www.ridgetownc.com/services/accessibilityservices.cfm

8.6 Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity, and it is the responsibility of all members of the University community-faculty, staff, and students-to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff, and students have the responsibility of supporting an environment that encourages academic integrity. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Undergraduate Calendar - Academic Misconduct
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml

Graduate Calendar - Academic Misconduct

https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml

8.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

8.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars
https://www.uoguelph.ca/academics/calendars
