



# ENGG\*1070 Occupational Health and Safety

01

Fall 2022

Section(s): C01

School of Engineering

Credit Weight: 0.25

Version 3.00 - October 31, 2022

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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 Course Description

This course focuses on different topics related to Health and safety. Among the topics covered will be: Introduction & Occupational Health and Safety (OHS) Act, Joint Health and Safety (JHS) right of workers, Hazards in the Workplace & Working at Heights, Tools and Machines- Electrical Safety & Fire Protection, Transportation Safety, Heat and Cold & Non-ionizing Radiation, Noise, Personal Protection Equipment (PPE), Waste Management, Ventilation & Confined & Restricted Spaces, and Safety Inspection.

### 1.3 Timetable

Lectures:  
Mon, Wed 12:30 PM - 1:20 PM, MCLN, Room 102.

### 1.4 Final Exam

Thursday 11:30 AM - 01:30 PM (12/06/2022)

Room TBA on Webadvisor

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## 2 Instructional Support

Instructor: Abdelkrem Eltaggaz, Ph.D.  
Office: THRN Rm. 1009  
Email: aeltagga@uoguelph.ca  
Office hours: by appointment

### 2.1 Teaching Assistants

<b>Teaching Assistant (GTA):</b>	Stephen Vanderburgt
<b>Email:</b>	svanderb@uoguelph.ca
<b>Office Hours:</b>	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 include an introduction to occupational health and safety (OHS) legislation, workplace hazards, and the administration of organizational health and safety practices. This course provides students the fundamental knowledge needs to understand, and apply the OHS regulations and programs that maintain people and equipment safe in the workplace.

This course will cover:

- 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
4	Design	4
4.4	Evaluate alternative design solutions based on problem definition	4
7	Communication Skills	2
7.4	Substantiate claims by building evidence-based arguments and integrating effective figures, tables, equations, and/or references	2
9	Impact of Engineering on Society and the Environment	1, 2, 3, 4, 5, 6, 7
9.1	Analyze the safety, social, environmental, and legal aspects of engineering activity	1, 2, 3
9.2	Evaluate the uncertainties and risks associated with engineering activities	4, 5, 6, 7
9.3	Anticipate the positive and negative impacts of introducing innovative technologies to solve engineering problems	4, 5, 6, 7

## 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:** OHS Act & JHS-right of workers

**Learning Outcome:** 1, 4, 6

#### Week 3

**Topics:** Hazards in the Workplace & Working at Heights

**References:** CH 9 and 13

**Learning Outcome:** 3, 4, 6, 7

**Week 4**

**Topics:** Tools and Machines- Electrical Safety & Fire Protection

**References:** CH 12 & 16

**Learning Outcome:** 5, 6, 7

**Week 5**

**Topics:** Transportation Safety

**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 & Personal Protective Equipment (PPE)

**References:** Ch 23 & CH 27

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

Fri Nov 8 Midterm2

**Week 9**

**Topics:** Waste Management

**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

## 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 15 %

Midterms 45 %

Final exam 40 %

## 6.2 Assessment Details

### Assignment 1 (15%)

**Date:** Mon, Oct 17, 11:00 PM - Wed, Nov 2

**Learning Outcome:** 1, 2, 3, 4, 5, 6, 7

The due date for the assignment is on Nov 2nd at 11:00 pm.

### Term Test 1 (20%)

**Date:** Wed, Oct 19, 11:30 AM, In class

**Learning Outcome:** 1, 2, 3, 4, 5, 6

-Open Notes Exam

-If you miss the midterm due to grounds for granting academic consideration or religious accommodation, the weight of the missed midterm will be added to the final exam. There will be no make-up midterm exams.

### Term Test 2 (25%)

**Date:** Wed, Nov 16, 11:30 AM, In Class

**Learning Outcome:** 1, 2, 3, 4, 5, 6

- Open Notes Exam

-If you miss the midterm due to grounds for granting academic consideration or religious accommodation, the weight of the missed midterm will be added to the final exam. There will be no make-up midterm exams.

### Final exam (40%)

**Date:** Tue, Dec 6, 11:30 AM - 1:30 PM, TBD on Webadvisor

**Learning Outcome:** 1, 2, 3, 4, 5, 6

- Open Notes Exam.

## 6.3 Note

-For the exams, students are not allowed to use the course textbook, lecture notes, internet, or any other resources. If any material, except the exam material, is used during the exam, the case will be considered as academic misconduct.

- Each student works on the assignment individually.

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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 make a booking at least 14 days in advance, and no later than November 1 (fall), March 1 (winter) or July 1 (summer). Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time.

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>

## 8.9 Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings, changes in classroom protocols, and academic schedules. Any such changes will be announced via CourseLink and/or class email.

This includes on-campus scheduling during the semester, mid-terms and final examination schedules. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

## **8.10 Illness**

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g.. final exam or major assignment).

## **8.11 Covid-19 Safety Protocols**

For information on current safety protocols, follow these links:

- <https://news.uoguelph.ca/return-to-campusess/how-u-of-g-is-preparing-for-your-safe-return/>
- <https://news.uoguelph.ca/return-to-campusess/spaces/#ClassroomSpaces>

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives.

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