



## ENGG\*3280 Machine Design

01, 02

Fall 2020

Section(s): C01, C02

School of Engineering

Credit Weight: 0.75

Version 1.00 - September 08, 2020

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### 1 Course Details

#### 1.1 Calendar Description

This course provides the concepts, procedures, and analysis techniques necessary to design various mechanical elements commonly found in machines. Failure analysis such as yield criteria and fatigue are covered. Component design includes screws, fasteners, shafts, bearings and lubrication, and gears. The emphasis is on the use of readily available materials, standard component, and appropriate design approaches to achieve safe and efficient system design.

**Pre-Requisites:** ENGG\*2120, ENGG\*2160, ENGG\*2230, ENGG\*2340, ENGG\*2450

#### 1.2 Course Description

This course aims at: (1) equipping the students with an understanding of theory and practice of machine design, (2) developing the ability to integrate the knowledge that they have gained earlier in the previous two years in designing machine elements, (3) developing the ability to use analytical skills towards synthesis of solutions by working through the design of a mechanical device.

#### 1.3 Timetable

**Lectures:**

**Section 101, 102, 103, 104, 105, 106, 107, 108:**

Monday, Tuesday, Wednesday 7:00 PM - 8:00 PM - Virtual (zoom)

All tutorials are online, except when presence in THRN 1025 is required for project (dates will be posted on CourseLink).

Section 101: Wed. 12:00PM - 02:50PM  
 Section 102: Wed. 03:30PM - 06:20PM  
 Section 103: Fri. 01:00PM - 03:50PM  
 Section 104: Thu. 02:30PM - 05:20PM  
 Section 105: Tue. 12:00PM - 02:50PM  
 Section 106: Tue. 03:30PM - 06:20PM  
 Section 107: Mon. 12:00PM - 02:50PM  
 Section 108: Mon. 03:30PM - 06:20PM

## 1.4 Final Exam

EXAM Dec. 12, 2020 - 2.30 pm to 4.30 pm

Room Virtual

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## 2 Instructional Support

### 2.1 Instructional Support Team

**Instructor:** Hari Simha  
**Email:** csimha@uoguelph.ca  
**Telephone:** +1-519-824-4120 x 58262  
**Office:** THRN 3502  
**Office Hours:** TBD

**Lab Technician:** Ken Graham  
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**Lab Technician:** David Wright  
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**Office:** THRN 1023

### 2.2 Teaching Assistants

**Teaching Assistant:** Scott Simmons  
**Email:** ssimmons@uoguelph.ca  
**Office:** TBD

**Teaching Assistant:** Andrew Newton  
**Email:** anewto03@uoguelph.ca  
**Office:** TBD

**Teaching Assistant:** Scott Okkema  
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**Office:** TBD

**Teaching Assistant:** Benjamin Maldonado  
**Email:** maldonab@uoguelph.ca  
**Office:** TBD

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## 3 Learning Resources

### 3.1 Required Resources

#### Course Website (Website)

<https://courselink.uoguelph.ca>

Course material, news, announcements, and grades will be regularly posted to the ENGG\*3280 CourseLink site. You are responsible for checking the site regularly.

**Make sure that your profile settings in CourseLink is such that you get an email as items are posted on the site.**

#### Machine Design: An Integrated Approach (Textbook)

R.L. Norton, 6th Ed. Prentice Hall, 2019

#### Lecture videos (Website)

For this offering, I have recorded all lectures, and videos will be posted on CourseLink. You are expected to watch these prior to coming to class. During the lectures, I plan to do a quick review and spend more time on solving problem sets. The videos allow me to discuss items that cannot be treated within the confines of 50-min chunks.

### 3.2 Recommended Resources

#### Shigley's Mechanical Engineering Design (Textbook)

11th Ed. McGraw-Hill, 2019

#### Design of Machine Elements (Textbook)

M.F. Spotts, Pearson; 8 edition (October 24, 2003)

### 3.3 Additional Resources

#### Lecture Information (Notes)

As appropriate, lecture notes will be posted on the course website (CourseLink) throughout the semester. You will be granted access to the website when you register for the course.

#### Assignments (Other)

Download the assignments according to the schedule given in the CourseLink website. All the solutions will be posted as indicated.

#### Miscellaneous Information (Other)

Lectures are the main source of material which includes important discussions and worked examples that might not be found elsewhere. Other information related to Machine Design are also posted on the CourseLink.

### 3.4 Communication and Email Policy

Please use lectures and tutorials as your main opportunity to ask questions about the course. Electronic communication should be limited to the course forum, however topics of a personal and confidential nature (e.g. marks) should be emailed to the instructor: csimha@uoguelph.ca. Please note that all email communication must be made through your University of Guelph email account.

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## 4 Learning Outcomes

### 4.1 Course Learning Outcomes

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

1. Formulate and analyze stresses and strains in machine elements and structures subjected to various loads.
  - (a) Define the most critically stressed point in a machine component.
  - (b) Analyze strains and deflections.
2. Specify appropriate tolerances for machine design applications.
  - (a) Understand and to interpret tolerance on a dimension.
  - (b) Acquaintance with ISO system of tolerances.
  - (c) Specify an appropriate tolerance on machine components.
  - (d) Specify a fit for mating parts considering functional requirements.
3. Apply multidimensional static failure criteria in the analysis and design of mechanical components.
  - (a) Knowledge of various static failure criteria for different materials.
  - (b) Apply static failure criteria in the design and analysis of machine components.
  - (c) Analyze and design components with non-uniform cross sections.
4. Apply fatigue failure criteria in the analysis and design of mechanical components.
  - (a) Knowledge of fatigue failure and load-life relation.
  - (b) Knowledge of various fatigue failure criteria.
  - (c) Apply fatigue failure criteria in the design and analysis of machine components under various loading conditions.
5. Analyze and design structural joints.
  - (a) Acquaintance with the terminology, and types of permanent and detachable joints.
  - (b) Design and analyze bolted joints.
  - (c) Design and analyze power screws.
6. Analyze and design power transmission shafts carrying various elements with geometrical features.

- (a) Acquaintance with different types of shafts.
  - (b) Design and analyze shafts with different geometrical features under various loading conditions.
  - (c) Calculate critical speed of shafts and make the design decisions accordingly.
7. Design/select the material, mechanical condition and configuration of a variety of machine elements under a variety of environmental and service conditions. These would include: shafts, bearings, spur gears, springs, and screws.
8. The acquaintance with standards, safety, reliability, importance of dimensional parameters and manufacturing aspects in mechanical design.
- (a) Knowledge of standards for machine elements.
  - (b) Understanding of safety and reliability concepts in the design of machine elements.
  - (c) Minimize the characteristic dimension of a machine element.
  - (d) An understanding of the influence of manufacturing processes in the design of machine elements.
9. Apply their skills to complete a major design project
- (a) Devise solutions for complex mechanical engineering problem.
  - (b) Design mechanical linkage system including individual components that meet specified needs.
  - (c) Utilize the basic machine shop tools such as lathe, milling, press drill, and welding.
10. Demonstrate their ability to communicate their design ideas through technical reporting and presentation.
- (a) Justify a design project in a formal report.
  - (b) Perform and present design calculations in a neat and organized manner.
  - (c) Present the outcomes of the design in the form of engineering drawings

## 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, 4, 5, 6, 7, 8, 9 |
| 1.1 | Recall, describe and apply fundamental mathematical principles and concepts       | 1, 2, 3, 4, 5, 6, 7, 8, 9 |
| 1.2 | Recall, describe and apply fundamental principles and concepts in natural science | 1, 2, 3, 4, 5, 6, 7, 8, 9 |

| #   | Outcome  | Learning Outcome          |
|-----|--|---------------------------|
| 1.3 | Recall, describe and apply fundamental engineering principles and concepts   | 1, 2, 3, 4, 5, 6, 7, 8, 9 |
| 1.4 | Recall, describe and apply program-specific engineering principles and concepts  | 1, 2, 3, 4, 5, 6, 7, 8, 9 |
| 2   | Problem Analysis   | 1, 2, 3, 4, 5, 6, 7, 8, 9 |
| 2.1 | Formulate a problem statement in engineering and non-engineering terminology   | 1, 2, 3, 4, 5, 6, 7, 8, 9 |
| 2.2 | Identify, organize and justify appropriate information, including assumptions  | 1, 2, 3, 4, 5, 6, 7, 8, 9 |
| 2.3 | Construct a conceptual framework and select an appropriate solution approach   | 1, 2, 3, 4, 5, 6, 7, 8, 9 |
| 2.4 | Execute an engineering solution  | 1, 2, 3, 4, 5, 6, 7, 8, 9 |
| 2.5 | Critique and appraise solution approach and results  | 1, 2, 3, 4, 5, 6, 7, 8, 9 |
| 3   | Investigation  | 8, 9                      |
| 3.1 | Propose a working hypothesis   | 8, 9                      |
| 3.2 | Design and apply an experimental plan/investigative approach (for example, to characterize, test or troubleshoot a system) | 8, 9                      |
| 3.3 | Analyze and interpret experimental data  | 8, 9                      |
| 3.4 | Assess validity of conclusions within limitations of data and methodologies  | 8, 9                      |
| 4   | Design   | 1, 2, 3, 4, 5, 6, 7, 8, 9 |
| 4.1 | Describe design process used to develop design solution  | 1, 2, 3, 4, 5, 6, 7, 8, 9 |
| 4.2 | Construct design-specific problem statements including the definition of criteria and constraints                          | 1, 2, 3, 4, 5, 6, 7, 8, 9 |
| 4.3 | Create a variety of engineering design solutions   | 1, 2, 3, 4, 5, 6,         |

| #   | Outcome  | Learning Outcome          |
|-----|--|---------------------------|
|     |  | 7, 8, 9                   |
| 4.4 | Evaluate alternative design solutions based on problem definition  | 1, 2, 3, 4, 5, 6, 7, 8, 9 |
| 4.5 | Develop and refine an engineering design solution, through techniques such as iteration, simulation and/or prototyping   | 1, 2, 3, 4, 5, 6, 7, 9    |
| 5   | Use of Engineering Tools   | 8                         |
| 5.1 | Select appropriate engineering tools from various alternatives   | 8                         |
| 5.2 | Demonstrate proficiency in the application of selected engineering tools   | 8                         |
| 5.3 | Recognize limitations of selected engineering tools  | 8                         |
| 6   | Individual & Teamwork  | 9                         |
| 6.2 | Understand all members' roles and responsibilities within a team   | 9                         |
| 6.3 | Execute and adapt individual role to promote team success through, for example, timeliness, respect, positive attitude   | 9                         |
| 6.4 | Apply strategies to mitigate and/or resolve conflicts  | 9                         |
| 6.5 | Demonstrate leadership through, for example, influencing team vision and process, promoting a positive team culture, and inspiring team members to excel       | 9                         |
| 7   | Communication Skills   | 10                        |
| 7.1 | Identify key message(s) and intended audience in verbal or written communication as both sender and receiver   | 10                        |
| 7.2 | Interpret technical documentation such as device specification sheets, drawings, diagrams, flowcharts, and pseudocode  | 10                        |
| 7.3 | Construct the finished elements using accepted norms in English, graphical standards, and engineering conventions, as appropriate for the message and audience | 10                        |
| 7.4 | Substantiate claims by building evidence-based arguments and integrating effective figures, tables, equations, and/or references                               | 10                        |
| 7.5 | Demonstrate ability to process oral and written communication by following instructions, actively listening, incorporating feedback, and                       | 10                        |

| #    | Outcome  | Learning Outcome |
|------|--|------------------|
|      | formulating meaningful questions   |                  |
| 11   | Economics and Project Management   | 9                |
| 11.1 | Apply project management techniques and manage resources within identified constraints   | 9                |
| 11.2 | Identify risk and change management techniques, in the context of effective project management   | 9                |
| 11.3 | Estimate economic impact and feasibility of an engineering project or design using techniques such as cost benefit analysis over the life of the project or design | 9                |

### 4.3 Relationships with other Courses & Labs

#### Previous and/or Current Courses:

- **ENGG\*1210:** Mechanical system fundamentals such as force, moments, and free body diagrams
- **ENGG\*1500:** Solving systems of linear equations, matrix algebra, and complex numbers
- **MATH\*1200 & MATH\*1210:** Limits, differentiation, integration, series expansion
- **ENGG\*2120:** Properties of materials
- **ENGG\*2230:** Viscosity, Bernoulli and continuity equation
- **ENGG\*2340:** Kinematics, Dynamics, and gear analysis
- **ENGG\*2400:** Second order system, natural frequency
- **ENGG\*2450:** Fundamental circuit theorems

#### Follow-on Courses:

- **ENGG\*4160:** Application of mechanical design principles
- **ENGG\*4220:** Interdisciplinary Mechanical Engineering Design

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## 5 Teaching and Learning Activities



## 5.1 Lecture

**Mon, Sep 14 - Fri, Sep 18**

**Topics:** Introduction, simple and combined stresses

**Learning Outcome:** 1

**Mon, Sep 21 - Fri, Sep 25**

**Topics:** Static theories of failure

**Learning Outcome:** 3

**Mon, Sep 28 - Fri, Oct 2**

**Topics:** Fatigue failure

**Learning Outcome:** 4

**Mon, Oct 5 - Fri, Oct 9**

**Topics:** Shafts, keys, and couplings

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

**Mon, Oct 12 - Fri, Oct 16**

**Topics:** Material behavior, properties and selection (Fall study week)

**Learning Outcome:** 7

**Mon, Oct 19 - Fri, Oct 23**

**Topics:** Lubrication and bearings

**Learning Outcome:** 7

**Mon, Oct 26 - Fri, Oct 30**

**Topics:** Roller bearings

**Learning Outcome:** 7

**Mon, Nov 2 - Fri, Nov 6**

**Topics:** Gears - spur, helical, bevel and worm

**Learning Outcome:** 7

**Mon, Nov 9 - Fri, Nov 13**

**Topics:** Welds and adhesives

**Learning Outcome:** 5

**Mon, Nov 16 - Fri, Nov 20**

**Topics:** Screws, fasteners, and connections

**Learning Outcome:** 7

**Mon, Nov 23 - Fri, Nov 27**

**Topics:** Design of Springs; Brakes and Clutches (if time permits)

**Learning Outcome:** 7

**Mon, Nov 30 - Wed, Dec 2**

**Topics:** Fits and tolerances

**References:** Notes

**Learning Outcome:** 2

## 5.2 Lab

**Mon, Sep 14 - Fri, Sep 18**

**Topics:** **Week1 Tutorial:** Simple stresses

**Project:** Goup formation and Introduction to use of Excel for design.

**Learning Outcome:** 1

The labs are divided into two parts (the first half is for solving problem sets). The second half will be devoted to project activities. In some of the weeks there will deliverables pertaining to the project; If not, you are expected to work on the project, consult with the instructors and the TAs with regards to your project and its progress.

TAs will note the group members. No more than 4 members in each group and members are to be from the same section.

**You will be expected to attend the lab in person for face-to-face meetings, and activities towards the project. Ensure that you are wearing a mask at all times and maintaining appropriate physical distance when you are in THRN 1025**

**Mon, Sep 16 - Fri, Sep 20**

**Topics:** **Week2 Tutorial:** Combined stresses

**Project:** Project proposal presentation - for the presentation use the project proposal document. No need to create an extra PowerPoint document.

**Learning Outcome:** 1, 2

For the project proposal, upload a 2-3 pager into dropbox. This is the first deliverable.

### **General guidelines on Project proposal**

Organize the document along the lines of

**Concept, Fabrication, Timeline, Costing, and Safety.** Items to be covered include:

- **What?** Drive, housing, shafting, gears, bearings, motor, power supply
- **How?** How will you fabricate (general steps) the proposed device.
- **When?** Approximate timeline ( a bulleted milestone list will do) Make sure to factor in the turnaround time with the machine shop (Ken and Dave will make your designs). You will assemble them.
- **How much?** Your lab fund should provide some budget.
- **Concept:** At least a hand drawn, clearly labelled sketch. If your drawing skills are wanting, use a drawing program.
- **Safety:** There are moving parts in the design. What are the design features for protection of the user and others from injury?

To be efficient - use the project proposal as a running document that you update as the project progresses.

Do not be verbose. Clear, concise points will full sentences should suffice.

In this course, we use sketch to mean the drawing is at least hand drawn, clear and well labelled

### Mon, Sep 23 - Fri, Sep 27

**Topics:**

**Week 3 Tutorial:** Static failure

**Project:** Project activity- with TAs, and instructors.

Tutorial on Project Management - One Page Project Manager  
Tutorial on motor selection

**Learning Outcome:** 3

By this week you should have a concept, identify the loads, free body diagrams, detailed sketches of the assembly and individual components. Identify gaps in your knowledge. For instance, the lecture for shaft design will be later in the course. Indicate to the TAs or instructor that you do not know how to size a component or select materials. **It is your responsibility to seek help.**

***Start preparing the Excel sheets for the stress analysis of component design.***

### Mon, Sep 30 - Fri, Oct 4

**Topics:**

**Week 4 Tutorial:** Fatigue failure

**Project:** Project activity- with TAs, and instructors.

Tutorial on buckling

**Learning Outcome:** 4

By this week, you should have engineering drawings and a solid model. You should have completed the material selection and completed the excel design sheets. The detailed design should be 80% complete by this stage. If the TAs and instructors are satisfied with the design, you may start fabrication - Do not do so without their consent.

**Mon, Oct 7 - Fri, Oct 11**

**Topics:** **Week 5 Tutorial:** Shafts keys and couplings.

**Project:** Interactions with TAs and instructors.

**Learning Outcome:** 6, 7

Detailed design should be complete and documented and uploaded into dropbox by **Oct. 11. This is the second deliverable and due Oct. 11.** Flesh out the project proposal with the work you have done uptill now. Add the assembly model, and engineering drawings, bill of materials and the excel sheets for stress analysis.

Continue fabrication if you have obtained consent from the instructors and TAs.

**Mon, Oct 14 - Fri, Oct 18**

**Topics:** **Week 6 Tutorial:** Thanksgiving week - no tutorials

**Project:** Project activity- with TAs, and instructors.

Continue fabrication if you have obtained consent from the instructors and TAs.

**Mon, Oct 21 - Fri, Oct 25**

**Topics:** **Week 7 Tutorial:** Journal Bearings

**Project:** Interaction with the TAs and instructors

Continue fabrication. This week, the TAs and instructors will inspect the effort so far; be ready for this.

**Learning Outcome:** 7

**Mon, Oct 28 - Fri, Nov 1**

**Topics:**

**Week 8 Tutorial:** Roller Bearings

**Project:** Interaction with TAs and Instructor.

**Continue fabrication. If there are problems with your design and fabrication, seek help. It is your responsibility to do so.**

**Learning Outcome:**

7

**Mon, Nov 4 - Fri, Nov 8**

**Topics:**

**Week 9 Tutorial:** Gears

**Project:** Continue fabrication.

70-80% of the fabrication should be completed.

**Learning Outcome:**

7

**Mon, Nov 11 - Fri, Nov 15**

**Topics:**

**Week 10 Tutorial:** Welds and adhesives.

**Project:** Continue fabrication.

The project should be ready for inspection by TAs, and instructors. Once the safety aspects are checked by the TAs and/or instructors, the device may be turned on.

**Learning Outcome:**

5

**Mon, Nov 18 - Fri, Nov 22**

**Topics:**

**Week 11 Tutorial:** Screws fasteners and connections

**Project:** Interactions with TAs and instructors.

**Learning Outcome:**

5

TAs and instructors inspect the fabricated device. Prepare for the trade show. A poster displaying your design and outcome is required.

**Mon, Nov 25 - Fri, Nov 29**

**Topics:** **Week 12 Tutorial:** Springs, brakes and clutches.

**Project:** Trade Show (Thursday 28th November)

**Learning Outcome:** 7

**Upload the poster and final report into dropbox.** As before, update the detailed design report: drawings, detailed listing of costs and design assembly.

**This is the final deliverable for the project and due on Nov. 29, 2019.**

## 5.3 Important Dates

1. Thursday, September 10, 2020: First day of classes
2. Monday, October 12, 2020: Fall study break
3. **October 3 and November 14, 2020 - Mid terms (both Saturdays)**
4. **Friday, October 23, 2020: Project progress report due.**
5. **Monday, November 30, 2020:** Final report for the project is due.
6. Friday, December 4, 2020: last day to drop classes
7. **Final exam - Sat. 2.30 - 4.30 PM (December 12, 2020).**

## 6 Assessments

### 6.1 Marking Schemes & Distributions

| Name           | Scheme A (%) |
|----------------|--------------|
| Assignments    | 0            |
| In Class Tests | 40           |
| Project        | 30           |
| Final Exam     | 30           |
| Total          | 100          |

### 6.2 Assessment Details

#### Assignments (0%)

9 unmarked assignments

#### Weekly quiz (10%)

**Date:** Weekly

During the tutorials, a 15 min. quiz on the previous week's material will be administered. An

unsolved problem set will be posted every week and in the succeeding week, a problem will be chosen randomly from the set for the quiz.

#### **Midterm 1 (15%)**

**Date:** Sat, Oct 3, 3:00 PM - , 4:30 PM, Virtual

**Learning Outcome:** 1, 3, 4

Mid term 1 - Simple and combined stresses, static and fatigue failure

The exam will be 1.5 hours long.

#### **Midterm 2 (15%)**

**Date:** Sat, Nov 14, 3:00 PM - , 4:30 PM, Virtual

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

Mid term 2 - Shafts, keys, couplings. Journal and roller bearings.

The exam will be 1.5 hours long.

#### **Final Exam (30%)**

**Date:** Sat, Dec 12, 2:30 PM - , 4:30 PM, Virtual

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

#### **Project (30%)**

**Learning Outcome:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

The project is 30% of the course. The break down is as follows.

1. Concept 5%
2. Detailed design 30 %
3. Final Report. 25 %
4. Final device 20 %
5. Quiz on project 10 %

Friday, October 23, Project interim report due

Monday, November 30, Project final report due

### **6.3 Notes on the exam**

**You will need appendices from Norton for the exam.**

**It is your responsibility to bring either the book or the appendices to the exam.**

**All of the mid terms and exams will be open book. You can use the text by Norton during the exams.**

**You may use a formula sheet - one letter-sized sheet with writing on both sides. Be advised that Norton has end-of-chapter compilations of the relevant formulas.**

**The exams will be online and conducted in virtual rooms proctored by the TAs and the instructor. You are expected to work alone and be on camera. If you communicate with, or take help from with another person during the exam it is a violation of the academic integrity policies (see later in the outline).**

## 6.4 Course Grading Policies

**Academic Consideration:** 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>

**Passing Grade:** The exam portion (2 Tests + Final Exam) accounts for 70% of the total mark of the course. The project portion accounts for 30% of the total mark of the course. In order to pass the course, you must meet the following two criteria:

- Score 35% or higher out of the 70% allocated to the exam portion of the course.
- Score 15% or higher out of the 30% allocated to the project portion of the course.

Failure to meet any of the two criteria will result in a failure grade (your total mark or 49%, whichever is less).

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

**Questions Concerning Grades:** If you have questions about the grade of your quiz or test received, please ask your TA within one week of the document being returned. However, all requests for re-marking must be made to the instructor and accompanied by a completed re-marking request form (found on CourseLink). Any item that is re-marked will be re-marked entirely. Therefore it is strongly suggested that you thoroughly review your entire document before making a re-marking request. Pencil-written works will not be re-marked. Re-marking requests will not be honoured more than one week after the document has been returned.

**Project Work:** You must attend oral presentations and submit all project milestone reports. If you miss a project report due to grounds for granting academic consideration or religious accommodation, arrangements must be made with the teaching assistant to submit the missed report. Late submissions of reports will not be accepted.



**Machine Shop Safety Test:** Failure to write and pass this test will result in an automatic loss of privilege to work in the machine shop area and a 0% mark for the project part of the course and failure in the final grade.

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## 7 Course Statements

### 7.1 COVID-Related Disclaimer

#### **Disclaimer**

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings and academic schedules. Any such changes will be announced via CourseLink and/or class email. All University-wide decisions will be posted on the COVID-19 website <https://news.uoguelph.ca/2019-novel-coronavirus-information/> and circulated by email.

#### **Illness**

The University will not require verification of illness (doctor's notes) for the fall 2020 or winter 2021 semesters.

## 8 School of Engineering Statements

### 8.1 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.

### 8.2 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.

### 8.3 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.

#### Note on COVID-19

These are uncertain times and overlaid on lab safety practices are safe practices required on account of the pandemic. Please consult the university website <https://news.uoguelph.ca/return-to-campus/practices/>

for current best practices during the pandemic. You will be expected to follow and implement these during the lab activities in the course.

## 9 University Statements

### 9.1 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.

### 9.2 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>

### 9.3 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>

## 9.4 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.

## 9.5 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>

## 9.6 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>

## 9.7 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.

## 9.8 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>

## 9.9 Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings and academic schedules. Any such changes will be announced via CourseLink and/or class email. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

## 9.10 Illness

The University will not normally require verification of illness (doctor's notes) for fall 2020 or winter 2021 semester courses. However, requests for Academic Consideration may still require medical documentation as appropriate.

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