

MECH ENG 4B03 – Topics in Product Development

Instructor: Dr. Elizabeth Hassan

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Lecture: Tuesday 1130 BSB 137

Thursday 1130 BSB 137

Friday 1130 BSB 137

Lab: Starting January 13

Section	Time	TA	Contact
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Office hours: TBD ETB 109 (Dr. Hassan's office)

Communication Guidelines:

- Please do not leave voicemails
- Email will be replied to within 24h, but please include the course code (4B03) in the subject line
- You can instant message Dr. Hassan on Slack, your Mac ID should allow you to join the 4b03design.slack team (team name "4b03design"),
- If you need to see Dr. Hassan in person, you can come to open office hours or book an appointment via email

Equipment/Text:

- **There is no textbook for this course**, my notes should be sufficient, posted on Avenue.

Course policies:

- **Attendance at lab sessions is mandatory** so that you can meet with your project TA

- There will be some times when you will work with others in the class, but your assignments are handed in as individual deliverables, the prototype and the final project is handed in as a group.
- You can hand in assignments up to **one week late** with no penalty. If due to illness, you require more time than the **one-week** grace period due for your submissions, contact Dr. Hassan.
- Rubric feedback will be posted on Avenue, if after reviewing the guide you think that your assignment has a grading error, send Dr. Hassan an email.
- Course materials will be posted on Avenue. Please check your McMaster email for updates
- All submissions must be digital, pdf format via Avenue. **Make sure that photos, scans or pdfs of your drawings are legible** so the TAs can grade them
- Peer evaluation will be via ITPmetrics, a peer evaluation link will be shared on Avenue. You will assess and be assessed 3 times during the term by your team members. The first two assessments are worth 0.5% each, complete the evaluation and get full marks. The final peer evaluation will be worth 2%. Your score on this evaluation will be used to assign your grade, for example if your score was 9/10 you would get 1.8% out of a possible 2%.
- Participation [7%] will be assessed through a “choose your own participation” mode, just accumulate 25 points for full marks. If you earn less than 25 marks, you would get a equivalent proportion (e.g. earn 12.5 points, get 50%):

“Choose your Participation”: Earn a total of 25 points for full marks		
<i>Item</i>	<i>Maximum #</i>	<i>Value per</i>
Lab Attendance	12	0.5
In class assignments	12	1.5
Peer feedback in design review	2	2
Write a reflection	1	4

About the project:

- The project is done in **groups of 4**. You may choose your own groups, but you must all be in the same lab section. You may switch lab sections, but you must do so on Mosaic to ensure that there is room.
- Your task is to develop a commercially viable product and prototype it

- Parts can be submitted to via email. Although we will try to respond as quickly as possible; there is no guarantee of prompt service, particularly at the end of term. Submit your parts well in advance to avoid problems.
- Your group's material budget is \$100 at the shop, per the fee schedule posted on Avenue. You must keep track of your own material budget.
- You are welcome to use parts you manufacture or purchase from other sources (e.g. MakerSpace, home).

Course Grade Breakdown:

	<i>Due</i>	<i>Value</i>
Individual Deliverables		
"Choose your participation"	Throughout the term	7 %
2x Design Reviews (part of group project but assessed individually)	In class, early february	10 %
4x Individual Assignments	Submit pdf on avenue	30 %
Peer Evaluation via ITPmetrics		3 %
Final Pitch (part of group project but assessed individually)	In class, early 1 april	10 %
Group Deliverables		
Prototype	At pitch presentation	15 %
Final project report	Submit pdf on avenue by last day of class	25 %
Total		100 %

Assignments:

- Each worth 7.5%.
- Handed in individually as pdf via avenue
- Assignment specification and rubric can be found in the avenue dropbox
- Due at 5pm on Friday on due date, plus a **one week** grace period.

#	Assignment	Due
1	Epipen case study	Mid January
2	Task analysis	early February
3	Redesign case study	mid February
4	Financial modeling	early March

Learning Outcomes:

By the end of the MECHENG 4B03, the student should be able to:

1. Work as an effective team member on a mechanical design project.
2. Generate multiple design alternatives.
3. Seek out and analyze user insights for product development
4. Develop a strong financial justification for their design
5. Use CAD to generate data for manufacturing components using a 3D printer and laser cutter.
6. Present their design solution to an audience, verbally, with images and in writing.

Policy Reminders

Senate and Faculty of Engineering require all course outlines to include the following reminders:

“The Faculty of Engineering is concerned with ensuring an environment that is free of all adverse discrimination. If there is a problem, that cannot be solved by discussion among the persons concerned, individuals are reminded that they should contact the Department Chair, the Sexual Harassment Officer or the Human Rights Consultant, as soon as possible.”

“Students are reminded that they should read and comply with the Statement on Academic Ethics and the Senate Resolution on Academic Dishonesty as found in the Senate Policy Statements distributed at registration and available in the Senate Office.”

"Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g., the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university”.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty, please refer to the Academic Integrity Policy of McMaster located at

<http://www.mcmaster.ca/academicintegrity/students/index.html>

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g., the submission of work that is not one's own or for which other credit has been obtained.
2. Not participating fairly in the group project work.
3. Copying or using unauthorized aids in tests and examinations.

MSAF Policy

In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar “Requests for Relief for Missed Academic Term Work”.

http://academiccalendars.romcmaster.ca/content.php?catoid=18&navoid=3204#Requests_for_Relief_for_Missed_Academic_Term_Work

If a student submits an MSAF, the assignment will be due electronically on Avenue up to two weeks later with no penalty.