

MECH ENG 4B03– Topics in Product Development

Instructor: Dr. Elizabeth Hassan

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The information in this course outline is accurate at the time of writing but may be modified at the instructor's discretion. Also, please note the policy for "extreme circumstances" on the final page.

Lecture: Monday 1430-1530, Friday 1530-1730 Microsoft Teams

Tutorial/Lab: Starting September 14 on Microsoft Teams

Section	Time
T01	Mon 930
T02	Mon 1530
T03	Thu 1030

You may attend any tutorial section you wish, regardless of your Mosaic enrollment, but your entire group needs to attend the same tutorial every week.

Office hours: 1330-1520 Friday Microsoft Teams

"Office hours" are when I am planning to be there and available to work with students. You can come for feedback on an assignment before you submit, ask questions about something we covered in lecture, get help with a design problem with your project, get advice on problems with your group, or anything else that you would like my help with.

Communication Guidelines:

- Email will be replied to within 24h, but please include the course code (4B03) in the subject line, and follow these guidelines:

Topic	Contact
General Inquiries	Dr Hassan email or Teams General channel
In class questions	Teams meeting chat
Mark adjustments, grading questions	Dr. Hassan email only, please do not use Microsoft Teams

Technical help with project	Your TA via Microsoft Teams during your lab
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- If you need to see Dr. Hassan directly, you can come to open office hours on Microsoft Teams (see page 1) or make an appointment via email.
- During a video call/meeting/class the instructor's camera will always be on, but your camera never needs to be, there's no need to show your face unless you want to.

Equipment/Text:

- **There is no textbook for this course**, my notes should be sufficient, posted on Avenue.
- For producing your prototype, you may use your own device with Autodesk Inventor 2021 (download for free at autodesk.ca). If you cannot use the software due to system limitations, you can access the Mechanical Engineering computer lab remotely; instructions will be posted on Avenue to Learn.
- Participation in lecture will be assessed by in-class small assignments using Avenue. This will often require hand sketching of some kind, either on paper with pencil or a digital tablet (e.g. iPad, Wacom tablet). As long as the drawing is legible, either paper or digital is acceptable. Please have the equipment required to hand sketch ready for each lecture session.
- Course materials will be posted on Avenue. Please check your McMaster email for updates.
- Lectures and tutorial will be hosted on Microsoft Teams. Please download the Microsoft Teams software on your device and join the team (link posted on Avenue).

Course policies:

- It is YOUR responsibility to ensure that you are available with your team for design reviews. **Attendance at your team's design review sessions DR1, DR2, DR3 is mandatory.** The particular day your review occurs will be chosen by the groups on a first come, first served basis, you have no guarantee of your choice of day.

- **Attendance at lab sessions is mandatory** so that you can meet with your project TA for weekly design reviews. You can miss one design review per term without penalty.
- In class assignments will be graded as 0/1= poor, 0.5/1: marginal, 1/1: good
- You will have 24 hours after lecture to hand in these assignments to accommodate poor internet, or periodic schedule conflicts.
- No extensions or grace period will be granted for these in class assignments, but your lowest 20% of in-class assignments will be dropped. For example, if 15 assignments are handed in during the term, I will drop your worst 3.
 - The purpose of this scale to reward consistent participation. Even if you are not always correct or present, you can still achieve a high participation grade (since “perfect” is actually 80%)

Assignment Policies:

- This class is a mix of group and individual work.
- There are no exams in this class, therefore it is imperative that you treat the projects and assignments with the same care and attention as you would an exam since they are worth similar amounts to exams.
- 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. Illegible work will receive a grade of 0.
- **Grace period:** You can hand in assignments **up to one week late** with no penalty and no need to contact Dr. Hassan, the Avenue dropbox will simply remain open. If due to serious illness, you require more time than the one-week grace period due for your submissions, contact Dr. Hassan.
 - I implemented this policy because I want to grade your best work and I care about your stress level.
 - Use the grace period for any reason, no questions asked. If you think it’s a good reason to hand in up to a week late, it probably is.
 - This is intended for the big and little things that happen in all our lives from time to time: you have a minor illness, you don’t want to miss your mom’s birthday, you have to work at your job, your varsity team has a game, you have a midterm in another class, your laptop breaks etc.

- Things that affect our ability to hand in work happen to all of us at some point, so I'm extending you a bit of "grace" with this policy. In return, I ask that you do the same to your teammates and treat each other kindly as you work together.
- Please note: At the end of the grace period (1 week for assignment and project work, 24h for in class assignments), the dropbox will close, any assignment not submitted will be considered late and will receive a zero.
- Rubric feedback will be posted on Avenue, if after reviewing the guide you think that your assignment has a grading error, send me (Dr. Hassan) an email **detailing the error specifically** and I will re-grade your work. Keep in mind that I will re-grade the entire assignment, not just the criteria that you have identified. If that re-grading yields a lower grade, I will not adjust your grade, but if it yields a higher one I will. Questioning your grade will never result in a penalty for you.
- A MSAF results in an additional one week to complete your work, not cancellation of that work.
- All course work **MUST** be handed in by the end of day (midnight) one week after the last day of classes, which is December 15, 2020, no extensions.

About the project:

- The 4B03 project is done in **groups of 3 or 4**. You may choose your own groups. It does not matter what lab section you are in on Mosaic, but you must be all available for the same tutorial session every week (your choice) to meet with the TA.
- Your task is to develop a commercially viable product based on customer insights, test it, "prototype" it digitally and develop a business model for it.
- You will present the stages of your work at 3 design reviews in class, and weekly design reviews with your TA. Your work will be evaluated on each of these occasions.

Teamwork:

- Teamwork is a critical part of this class and a critical part of engineering practice.
- Insufficient contributions to your team project **are a form of academic dishonesty** and will be dealt with accordingly.
- Harassing or abusive conduct is prohibited by your student code of conduct. There is zero tolerance for harassment or abusive conduct in my class.

Course Grade Breakdown:

The due dates listed are the EARLIEST possible date the deliverable will be due, dropboxes close at 1130pm on due date + 1 week grace period. I may adjust the due dates during the term to better allow you to complete your work, those will be reflected on Avenue.

	<i>Due</i>	<i>Value</i>
Individual Deliverables		
In class assignments	in class on avenue + 24h	5%
Individual Project :	Submit pdf on avenue	
A1 - Problem Finding	Sept 25	5%
A2 – Form, concept selection	Oct 9	10%
A3 – Validation, final form	Nov 6	20%
A4 - Financial model, business canvas	Dec 8	15%
Group Deliverables		
Weekly design reviews with TA	Weekly in tutorial	10%
Design Reviews:		
DR1 – Problem and customer	In class, Sep 25, Oct 2, Oct 9	5%
DR2 – Form and function	In class, Oct 30, Nov 6, Nov 13	5%
DR3 - Final Pitch, business model	In class, Nov 27-Dec7	10%
Final project report and prototype	Submit pdf on avenue, due Dec 8	15%
Total		100 %

Learning Outcomes:

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

1. Work as an effective team member on a 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. Present their design solution to an audience, verbally, with images and in writing.

ACADEMIC INTEGRITY

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. **It is your responsibility to understand what constitutes academic dishonesty.**

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour 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. For information on the various types of academic dishonesty please refer to the [Academic Integrity Policy](https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/), located at <https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/>

The following illustrates only three forms of academic dishonesty:

- plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.
- improper collaboration in group work.
- copying or using unauthorized aids in tests and examinations.

AUTHENTICITY / PLAGIARISM DETECTION

[NOTE: MECHENG 2A03 uses Turnitin.com for written assignments]

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. A2L, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software. **All submitted work is subject to normal verification that standards of academic integrity have been upheld** (e.g., on-line search, other software, etc.). For more details about McMaster’s use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

COURSES WITH AN ON-LINE ELEMENT

Some courses may use on-line elements (e.g. e-mail, Avenue to Learn (A2L), LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in a course that uses on-line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

ONLINE PROCTORING

Some courses may use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

CONDUCT EXPECTATIONS

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the [Code of Student Rights & Responsibilities](#) (the “Code”). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, **whether in person or online**.

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g. use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students’ access to these platforms.

ACADEMIC ACCOMMODATION OF STUDENTS WITH DISABILITIES

Students with disabilities who require academic accommodation must contact [Student Accessibility Services](#) (SAS) at 905-525-9140 ext. 28652 or sas@mcmaster.ca to make arrangements with a Program Coordinator. For further information, consult McMaster University’s [Academic Accommodation of Students with Disabilities](#) policy.

REQUESTS FOR RELIEF FOR MISSED ACADEMIC TERM WORK

McMaster Student Absence Form (MSAF): 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”.

ACADEMIC ACCOMMODATION FOR RELIGIOUS, INDIGENOUS OR SPIRITUAL OBSERVANCES (RISO)

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the [RISO](#) policy. Students should submit their request to their Faculty Office normally ***within 10 working days of the beginning of term*** in which they anticipate a need for accommodation or to the Registrar’s Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

COPYRIGHT AND RECORDING

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, **including lectures** by University instructors.

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

EXTREME CIRCUMSTANCES

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email.