

## Mechanical Engineering 4M06: Senior Project

**Coordinator:** Dr. M. K. Jain Course Web Site: <http://avenue.mcmaster.ca>

**Lectures:** See the last page on Lectures from the Department faculty and external speakers for details. All lectures will be given in Term 1 only and will be online on MS-Teams. First introductory class by Dr. Jain will be held on Tuesday, September 7<sup>th</sup> at 10:30 AM.

**Design Build:** Department of Mechanical Engineering is planning to open the design build related Project Laboratories of the Department for Winter 2022 term. Some project supervisors will also allow students to access their research labs as well for design build in Terms 1 and 2.

Lecture Days	Time period	Term	Location
Mondays and Thursdays	9:30 AM - 10:20 PM	I	Virtual Classroom
Tuesdays	10:30 AM - 11:20 PM	I	Virtual Classroom
<u>Note: No lectures in Term II</u>			

### Important Dates:

Dates	Events
Tuesday, September 7	Introductory Lecture; Project List is posted on the course web site
Thursday, September 9	Introduction to some projects by interested 4M06 faculty members
Monday, September 13	<u>Avenue</u> submission of completed Project Selection Sheet ( <u>last day for submission</u> ) – submission in Avenue drop box of Dr. Jain
Thursday, September 16	List of project teams and their project allocations as well as list of two faculty evaluators for each project will be posted on Avenue
Thursday, September 16	Start of 4M06 online (live) lectures (as per the above class timetable) (see the list of lectures at the end of this document)
Thursday, October 28	Multiple Choice Test on Avenue based on posted 4M06 Lectures (except Dr. Jain's)
Monday, November 1	<u>Avenue</u> drop box submission of Scope of Work (SW) document by teams to assigned evaluator and Dr. Jain
Tuesday, November 2	Term 1 <u>presentation abstracts</u> to be submitted on <u>Avenue</u> drop boxes of <u>team's</u> two Presentation Evaluators
<u>Period:</u> Nov. 8 – Nov. 23	Term 1 <u>online</u> oral presentations (presentation date/time and specific virtual meeting platform to be set by the <u>project supervisors</u> in consultation with their project teams and faculty presentation evaluators)
Wednesday, December 1	<u>Avenue</u> drop box submission of Design Concept (DC) document by teams to assigned evaluator and Dr. Jain
Tuesday, December 7	<u>Last date</u> for submission of project funding application
Tuesday, February 15	<u>Avenue</u> drop box submission of Progress Report document by teams to Project Supervisor and Dr. Jain
Thursday, March 24	Term 2 <u>presentation abstracts</u> to be submitted on <u>Avenue</u> drop box of <u>team's</u> two Presentation Evaluators
<u>Period:</u> March 28 – April 11	Term 2 <u>online</u> oral presentations (presentation date/time and virtual meeting platform to be set by the <u>project supervisors</u> in consultation with their project

	teams and faculty presentation evaluators)
Monday, April 11	<u>Avenue</u> drop box submission of Final Design – Development, Analysis and Optimization (FD-DAO) document to your project Supervisor and Dr. Jain
Tuesday, April 5	A short video submission by each 4M06 team of 4-6 minutes length a week prior to Capstone Showcase Day
Tuesday, April 12	Capstone Showcase Day
Tuesday, April 12	Submission of self-reflection document <u>individually by each student</u> reflecting on their experience with 4M06 course to Avenue dropbox of Dr. Jain

**Evaluation:**

- Evaluation will be based on the following scheme:

Term	Component	Group mark (max)	Individual mark (max)	Evaluation by
1	Multiple choice test (based on in-class lectures)	Not applicable	5%	Dr. Jain
	Technical writing (Dr. Wohl's 2 lectures)	Not applicable	1% (bonus)	Dr. Wohl
	Scope of Work (SW) document <sup>1</sup>	15%	Group mark* IE factor <sup>2</sup>	Designated (team-specific) Project Evaluator
	Group Presentation 1	10%	Group mark* IE factor <sup>2</sup>	Two designated (team-specific) Project Evaluators
2	Design Concept (DC) Document <sup>1</sup>	10%	Group mark* IE factor <sup>2</sup>	Project Evaluator <sup>1</sup>
	Progress Report <sup>1</sup>	15%	Group mark* IE factor <sup>2</sup>	Project Supervisor
	Group Presentation 2	20%	Group mark* IE factor <sup>2</sup>	Two designated (team-specific) Project Evaluators
	Final Design – Development, Analysis and Optimization (FD-DAO) document <sup>1</sup>	25%	Group mark* IE factor <sup>2</sup>	Project Supervisor

Note: Rubrics will be provided to the students on the course web site (Avenue) ahead of time for all requested documents and presentations (with the exception of Multiple Choice Test).

<sup>1</sup>Avenue drop box submissions.

<sup>2</sup> Group mark will be multiplied by initiative & effort, IE, factor for each student in the group, taking values between 0.0 for no participation in group project initiative and effort or report/presentation and 1.0 for full initiative and effort. The IE factor for individual contribution to the group effort will be determined by peer review by students themselves and /or by the supervisor.

- **Multiple Choice Test** (on October 28<sup>th</sup>, 9:30 AM)

There will be 50 minutes long (1 lecture period) Multiple Choice test on Avenue, scheduled for October 28, 9:30 AM, based on in-class synchronous and asynchronous lectures. All lecture material covered by participating faculty and invited speakers during the period Sept. 13 – October 21 will be on the test (with the exception of Dr. Jain's lecture on September 20). The test will be worth 5% of the course grade. All lecture slides will be posted on course web site in advance of the test. Effort will be made to also post videos of most of the lectures given by the participating lecturers and last year's slides and videos for asynchronous lectures. There will be an additional bonus mark of 1% for submission of Technical Writing document in Dr. Wohl's two technical writing lectures (on September 23 and 27).

- **Scope of Work document** (due Monday, November 1<sup>st</sup>, 11.59 PM, Avenue)

A comprehensive Scope of Work (SW) document with well-defined and quantifiable objectives and deliverables is to be prepared by the team in consultation with the Project Supervisor as per the template to be provided on the course web site. Note that a special lecture on SW document preparation will be given by Dr. Jain on September 20. SW document should include, (i) project-specific background research, (ii) project problem analysis used to quantifying project related objectives and deliverables, (iii) identification of numerical tools for design analysis and optimization, (iv) available and applicable lab infrastructure (if applicable), (v) objectives and deliverables of project in clear and quantitative terms (suitable for engineering action) by reassessment of the project's original broader objectives as stated on the Project List, and (vi) detailed timelines for achieving the objectives and deliverables of the project. Challenges based on new research and knowledge should also be presented in this document. SW should include names of all team numbers including the Project Supervisor, McMaster e-mail addresses, and e-signatures of all team members and Project Supervisor. SW will constitute 15% of the final course grade.

A template for the SW document will be made available on Avenue ahead of time. Also, a sample SW document will be posted on Avenue for guidance. SW document evaluation will be carried out by an assigned 4M06 faculty member (so-called Project Evaluator) other than the Project Supervisor, and based on a rubric. A copy of the rubric for SW document will be made available on Avenue 4M06A ahead of the due date. SW document must be submitted to Avenue drop box of the assigned 4M06 Project Evaluator and Dr. Jain.

- **Term 1 Presentation** (Period: Nov. 8 – 23)

Term 1 Presentation will be a 20-minute online presentation (plus 10 minutes for questions and discussion) over a two-week period to allow flexibility in scheduling of the presentations. The presentation should include content similar to the SW document and any additional progress since the submission of SW document. The online presentation will be evaluated by 2 participating Project Evaluators (i.e., these will be participating 4M06 faculty members other than your team's Project Supervisor). A list of Presentation Evaluators for projects will be made available on the course web site by September 17 or so. The list will likely remain unchanged for Term 1 and 2 presentations unless special circumstances arise. A rubric for Term 1 presentation will be made available to the students on the course web site well ahead of the presentation period. Term 1 presentation will constitute 10% of the final course grade.

A one-page presentation **abstract** must be submitted in Avenue drop boxes of your team's two Presentation Evaluators by November 2<sup>nd</sup>. This abstract should be brief (about 1 page in length) and summarize (i) what the project is all about (introduction to the design problem), (ii) why is the project significant (i.e., significance of the design problem), (iii) how is the project expected to unfold (key steps in the design process), and (iv) what progress towards the project objectives has been made.

- **Design Concept document** (due Wednesday, December 1, 11.59 PM, Avenue)

Design Concept (DC) document will include a well-defined and justified concept selection criterion, concept sketches of various feasible and valid designs, rankings of the individual design concepts, and selection of the final design concept based on the concept selection criterion and rankings. This document should also provide an update of the project status with reference to the objectives, deliverables and timelines. DC will constitute 10% of the final course grade.

A template for the DC document will be made available on Avenue ahead of time. Also, a sample DC document will be posted on Avenue for guidance. Similar to the SW document, DC evaluation will be carried out by the assigned 4M06 faculty member other than the Project Supervisor, based on a rubric. A copy of the rubric for DC document will be made available on the course web-site ahead of due date. DC document must be submitted directly on Avenue drop box of the assigned 4M06 Project Evaluator as well as to Avenue drop box of Dr. Jain.

- **Department Funding for Design Build** (application last date: Tuesday, December 7)

For projects that require funding, Department will be requesting **project funding applications** for the build portion of projects on a competitive basis. A project funding application form with instruction to complete the form and to prepare supporting documents will be available to the students on the course web site by October 4<sup>th</sup>. The last date for the submission of the funding application is Tuesday, December 7. The applications are to be submitted in the Avenue 4M06 dropbox of John Colenbrander, a senior member of the Department's technical staff. John and his team of technical staff members will be evaluating the project funding applications as they are received and meet with the student teams for any clarifications and modifications to the application prior to their approval of funding. John will also be giving a lecture on how to properly complete the project funding application on October 19. John will also be involved in the funding budget administration in Term 2 and ordering of materials and components for student teams, if feasible. The student teams are encouraged to submit their projects funding applications earlier and as soon as their design is finalized.

- **Progress Report** (due February 15, 2022, 11.59 PM, Avenue)

A design project progress report should include as much details of the final design as possible prior to quantitative design analysis and optimization phase of the design. Completed final CAD drawing of the final design should be included in this report. This document will be worth 15% of the grade and reviewed by your Project Supervisor. Progress Report must be submitted to Avenue drop box of your Project Supervisor and also to Avenue drop box of Dr. Jain.

- **Term 2 Presentation** (Period: March 28- April 11<sup>th</sup>)

Term 2 Presentation will be a 20-minute online presentation (plus 10 minutes for questions and discussion). The presentation should include content similar to the FD-DAO document, as discussed below. As in Term 1, this online presentation will be evaluated by your team's two

Presentation Evaluators (and not by your project supervisor). A rubric for Term 2 presentation will be made available on Avenue ahead of the presentation. Term 2 presentation will constitute 20% of final course grade.

A one-page Term 2 presentation **abstract** must be submitted in Avenue drop boxes of your team's Presentation Evaluators by March 24<sup>th</sup>. This abstract should be brief (about 1 page in length) and briefly summarize (i) what the project is all about (introduction to the design problem), (ii) state the key objectives, and (iii) state what progress towards the project objectives has been made.

- **Final Design–Development, Analysis & Optimization document** (due April 11<sup>th</sup>, 11.59 PM, Avenue)

Final Design – Development, Analysis and Optimization (FD-DAO) document will include presentation and detailed discussion of the final design including the details of applicable design theory utilized to carry out analysis and optimization of the final design. This document should also discuss how the final design meets the project objectives and deliverables. For projects that involve design build, all fabrication details and costs should be included as well as how the design build meets the fabrication objectives and deliverables. FD-DAO document will constitute 25% of the final course grade.

A template for the FD-DAO document will be made available on Avenue ahead of time. Also, a sample FD-DAO document will be posted on Avenue for guidance. This document will be evaluated by the Project Supervisor based on a rubric. A copy of the rubric for FD-DAO document will be made available on the course web-site ahead of time. FD-DAO document must be submitted directly to Avenue drop box of your Project Supervisor and also to the Avenue drop box of Dr. Jain.

- **Faculty-wide Capstone Showcase Day** (April 12, 2022)

All Mechanical Engineering 4M06 groups (including all its members) are required to participate in Faculty of Engineering Capstone Showcase Day. A short video of length 4-6 minutes about Team's project topic and design work is to be submitted online on showcase platform by April 5. This Video should be intended for a wider audience from both academia and industry. A live discussion by each team with the industry judges and other attendees on showcase day is to be expected by all teams. Overall format and much of the details of 2022 Faculty-wide Capstone Showcase are yet to be worked out.

- **Student self-reflection document** (due April 12, Avenue)

All Mechanical Engineering 4M06 students are also expected to individually provide a self-reflection document as part of the Strategic Management Experience (SME), an agreement between the province of Ontario and the University. The intent of this document is to objectively assess the project-based experience gained in 4M06 course including the achievement of objectives of the project work, and where objectives are not met, a reflection on what the reasons were and how they could be better addressed in the future. Format of this document is being discussed by a Capstone Faculty of Engineering Committee and a template for this document will be provided to the students in Term 2.

**Submission of Reports, Presentation Abstracts & other documents (Summary Table):**

Item	Evaluator(s)	Document/Abstract submission location (Online)	Test and document submission dates & times
Multiple Choice Test	Automatic Evaluation on Avenue	Avenue Drop box	October 28, 2021, 9:30 AM – 10:20 AM
Scope of Work document	<u>One</u> assigned Project Evaluator	Avenue Drop boxes of your team's designated Evaluator and Dr. Jain	November 1, 2021, 11:59 PM
Term 1 Presentation Abstract	<u>Two</u> Assigned Project Evaluators	Avenue Drop box of your team's two designated Evaluators and Dr. Jain's box	November 2, 2021, 11:59 PM
Term 1 Presentation (online)	<u>Two</u> Assigned Project Evaluators	Avenue Drop box of your team's two designated Evaluators	Period: Nov. 8 <sup>th</sup> – 23 <sup>rd</sup>
Design Concept document	<u>One</u> assigned Project Evaluator	Avenue Drop boxes of your team's designated Evaluator and Dr. Jain	December 7, 2021, 11:59 PM
Progress Report	Project Supervisor	Avenue Drop boxes of Project Supervisor and Dr. Jain	February 15, 2022, 11:59 PM
Term 2 Presentation Abstract	<u>Two</u> Assigned Project Evaluators	Avenue Drop box of your team's two designated Evaluators and Dr. Jain's box	March 24, 2022, 11:59 PM
Term 2 Presentation (online)	<u>Two</u> Assigned Project Evaluators	Avenue Drop box of your team's two designated Evaluators	Period: March 28 <sup>th</sup> -April 11 <sup>th</sup>
Faculty-wide Capstone Video	Industry/Engineering judges	Faculty-wide Capstone web platform	April 5
Final Design – Development, Analysis & Optimization document	Project Supervisor	Avenue Drop box of your Project Supervisor and Dr. Jain	April 11, 11:59 PM
Faculty-wide Capstone Showcase Day	Industry/Engineering judges	Participation by all 4M06 groups (& all members in each group)	April 12
Self-reflection document	Not Applicable	Online submission, details to be provided later	April 12 <sup>th</sup> , 11:59 PM

**Additional Information:**

- Average project effort per person must be 6 hrs/week in Term 1 & 12 hrs/week in Term 2.
- All written documents must be prepared using the standardized template/form while adhering to the maximum space requirements for each of the boxes on the form.
- **Documents** are to be formal engineering reports and need to be prepared to a professional standard. A logical, concise and well-organized report is far better than a voluminous, rambling, one. The Project Evaluators and Supervisors are expected to timely read and provide feedback to the students and submit completed rubrics to Avenue drop box of Dr. Jain.
- **Presentations** are to be prepared to professional standards by each group. The students should directly approach the Presentation Evaluators for any feedback soon after the marks have been posted on Avenue.

- Good **Communication** with your supervisor is critical for the success of the project. Schedule regular online meetings, at least once a week, and all group members must attend them. Your supervisor may assign you demerit marks for poor project meeting attendance.
- When the Project List becomes available on September 7<sup>th</sup>, it is advisable that you setup online meetings with supervisors of projects you are interested in, to make sure you have a good and shared understanding of what the project entails.
- If your project leads to the creation of new **Intellectual Property (IP)**, you have certain rights regarding the ownership of that IP. See McMaster's policies on IP located at the following address:

<http://www.mcmaster.ca/mufa/handbook/ippolicyJoint.html>

#### ACCREDITATION LEARNING OUTCOMES

The Learning Outcomes defined in this section are measured for Accreditation purposes only and will not be directly taken into consideration in determining a student's grade in the course.

Outcomes	Indicators
<b>Problem Analysis, Design, Use of Engineering Tools, Individual and Team Work,</b>	2.01, 2.02, 4.01-4.06, 5.01,5.02, 6.01-6.03
<b>Communication skills, Professionalism, Impact on Society &amp; Environment,</b>	7.01-7.02, 8.01, 9.01
<b>Economics and lifelong learning</b>	11.02, 12.01

For more information on Accreditation, please visit: <https://www.engineerscanada.ca>

#### EQUITY, DIVERSITY, AND INCLUSION

Every registered student belongs in this course. Diversity of backgrounds and experiences is expected and welcome. You can expect your Instructor to be respectful of this diversity in all aspects of the course, and the same is expected of you.

The Department of Mechanical Engineering is committed to creating an environment in which students of all genders, cultures, ethnicities, races, sexual orientations, abilities, and socioeconomic backgrounds have equal access to education and are welcomed and treated fairly. If you have any concerns regarding inclusion in our Department, in particular if you or one of your peers is experiencing harassment or discrimination, you are encouraged to contact the Chair, Associate Undergraduate Chair, Academic Advisor or to contact the [Equity and Inclusion Office](#).

#### PHYSICAL AND MENTAL HEALTH

For a list of McMaster University's resources, please refer to the [Student Wellness Centre](#).

#### 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:

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

#### COURSES WITH AN ON-LINE ELEMENT

McMaster is committed to an inclusive and respectful community. These principles and expectations extend to online activities including electronic chat groups, video calls and other learning platforms.

**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.

#### 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, MS Teams, 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](mailto:sas@mcmaster.ca) to make arrangements with a Program Coordinator. For further information, consult McMaster University's [Academic Accommodation of Students with Disabilities](#) policy.

#### COURSE POLICY ON MISSED WORK, EXTENSIONS, AND LATE PENALTIES

It is the students' responsibility to regularly check the course webpage (ex. Avenue to Learn) for updates and announcements.

#### SUBMISSION OF REQUEST FOR RELIEF FOR MISSED ACADEMIC WORK

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".

1. **Relief for missed academic work worth less than 25% of the final grade resulting from medical or personal situations lasting up to three calendar days:**
  - Use the [McMaster Student Absence Form](#) (MSAF) on-line self-reporting tool. No further documentation is required.
  - Students may submit requests for relief using the MSAF once per term.
  - An automated email will be sent to the course instructor, who will determine the appropriate relief. Students must immediately follow up with their instructors. Failure to do so may negate the opportunity for relief.
  - The MSAF cannot be used to meet a religious obligation or to celebrate an important religious holiday.
  - The MSAF cannot be used for academic work that has already been completed attempted.

- An MSAF applies only to work that is due within the period for which the MSAF applies, i.e. the 3-day period that is specified in the MSAF; however, all work due in that period can be covered by one MSAF.
  - The MSAF cannot be used to apply for relief for any final examination or its equivalent. See *Petitions for Special Consideration* above.
2. **For medical or personal situations lasting more than three calendar days, and/or for missed academic work worth 25% or more of the final grade, and/or for any request for relief in a term where the MSAF has been used previously in that term:**
- Students must report to their Faculty Office to discuss their situation and will be required to provide appropriate **supporting documentation**.
  - If warranted, the Faculty Office will approve the absence, and the instructor will determine appropriate relief.

#### 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.

## Student Supports

### Student Wellness Centre

On-Campus Support for Medical and Mental Health Concerns. Doctors and Counsellors available. Located in PGCL, 2nd Floor.

Mon-Fri 9AM-5PM 905-525-9140 ext. 27700

<https://wellness.mcmaster.ca/contact-us/>

### Main St. West Urgent Care Centre

For immediate health concerns that do not require the emergency room.

690 Main St W - Mon-Sun 9AM-9PM

Emergency Rooms

For immediate, serious health concerns.

St. Joseph's Healthcare Hamilton 50 Charlton Ave E

McMaster Children's Hospital Students 17 and under

### **Telehealth Ontario**

Telehealth Ontario is a free, confidential service you can call to get health advice or information. A Registered Nurse will take your call 24 hours a day, seven days a week.

Toll-free: 1-866-797-0000; Toll-free TTY: 1-866-797-0007

Phone Lines

Good2Talk

Confidential helpline providing professional counselling, info and referrals for mental health, addiction, and well-being

1-866-925-5454

### **LGBT Youthline**

Confidential, non-judgemental & informed LGBTQQ2SI peer support.

Sun-Fri, 4-9:30 PM, Text 647-694-4275

### **SACHA (SEXUAL ASSAULT CENTRE - HAMILTON AREA)**

Confidential, anonymous 24-hour nonjudgmental telephone support for adults who have experienced sexual violence at any point in their lives; will provide accompaniment to hospital or police station for survivors wishing to seek medical attention or report; counselling services & public education

905-525-4162

### **Empower Me (Graduate Students)**

24/7 accessible counselling services to empower you to thrive, crisis support, mental health and well-being services.

1-844-741-6389

### **Bounceback**

CBT skills-building for mild to moderate depression and anxiety for people 15 or older. If accessed through self-referral, the client's primary care provider will be notified.

1-866-345-0224

### **Indigenous Student Services**

Academic & social counselling, employment aid LRW 1010

ext. 23788

indigenous.admin@mcmaster.ca; indigenous.mcmaster.ca

### **International Student Services**

Advising services for international students and exchange students GH 104

ext. 24254

[iss@mcmaster.ca](mailto:iss@mcmaster.ca); iss.mcmaster.ca

### **Student Success Centre**

Academic skills assistance, job search, volunteering GH 110

ext. 24254

studentsuccess@mcmaster.ca

### **Student Accessibility Services**

Disability services, assistive technology support MUSC B107

ext. 28652, sas@mcmaster.ca

### **TutorOcean**

Student to Student Tutoring Services

<https://mcmaster.tutorocean.com/>

### **Office of Student Financial aid and Scholarships**

Emergency funding, government funds, OSAP assistance, scholarships, work programs GH 120

ext. 24319

<https://registrar.mcmaster.ca/aid-awards/>

### **Food Collective Centre (FKA Mac Bread Bin)**

The Food Collective Centre is a service run by students dedicated to cultivating stronger food systems in the McMaster and surrounding community. (MSU Service)

macbreadbin@msu.mcmaster.ca

<https://www.msumcmaster.ca/services-directory/14-food-collective-centre>

### **Neighbour 2 Neighbour**

Food bank, community kitchen, community counselling, help with paying for utilities, and more. Hamilton Mountain.

905-574-1334, <http://www.n2ncentre.com/>

**Barrett Centre for Crisis Support**

Provides a safe environment in the community and responds to the needs of individuals, 16 years of age or older, who experience a mental health crisis and do not require a hospital stay.

Confidential and free services 24/7/365

24 Hour Crisis Line: 905-529-7878, Toll Free: 1-844-777-3571

**COAST (Crisis Outreach and Support Team)**

Hamilton's crisis line is answered 24 hours a day, 7 days a week. The COAST mobile team, consisting of a mental health worker, and a police officer, will respond to crisis calls between the hours of 8 a.m. and 1 a.m. daily.

905-972-8338

**Oakville Distress Centre**

Distress Centre Halton provides telephone and online support to people to better cope with crisis, loneliness, and emotional stress. Also serves the Hamilton area.

905-849-4541

**Assaulted Women's Helpline**

Free, anonymous and confidential telephone and TTY crisis telephone line to all women in the province of Ontario who have experienced any form of abuse. Provides crisis counselling, safety planning, emotional support, information and referrals accessible 24/7/365.

Toll-free: 1-866-863-0511 TTY: 1-866-863-7868

Crisis Resources in the GTA

The CAMH Distress Crisis Resources web page lists a number of phone lines, response teams and hospitals in the GTA.

<https://www.camh.ca/en/health-info/crisis-resources>

**Student Assistance Plan (Undergraduate)**

Psychological counseling (offered in-person, over the phone, or over secure video) and academic-life services (legal consultation, financial consultation, life coaching, nutrition consultation and wellness resources offered virtually or in-person)

<https://www.msumcmaster.ca/services-directory/36-health-and-dental-insurance/student-assistance-plan>

**Ombuds Office**

Advice for students, staff, and faculty regarding academic and non-academic concerns.

MUSC 210

ext. 24151

ombuds@mcmaster.ca

mcmaster.ca/ombuds

### **SWHAT - Walk Safe Program**

The Student Walk Home Attendant Team (SWHAT) is a volunteer service within the McMaster Students Union that will walk or bus with students during the evening hours 7 days a week, in all kinds of weather!(MSU Service)

Ext. 27500

[swhat@msu.mcmaster.ca](mailto:swhat@msu.mcmaster.ca)

### **Student Support and Case Management**

Student rights & responsibilities

GH 207, ext. 23845

studentconduct.mcmaster.ca

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McMaster University: 905-525-9140

## ME4M06 Project Selection Sheet – Individual Submission

Student Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

Note: This form is to be used by students who do not have a group. This form is also available on Avenue.

List (in decreasing order of preference) five different supervisors and the project codes on which you would like to work. It is mandatory to list all 5 choices. Each choice must be with a different project supervisor. When you submit this form, it is understood that you do not have a group and will not be part of any group project selection sheet submission. Submit your completed form to the Avenue drop box of Dr. Jain by September 13<sup>th</sup>, 11.59 PM.

Last Name of Supervisor <sup>1</sup>	Project codes (from Project List)	Did you meet with supervisor (yes/no)?	Brief Comments
1.			
2.			
3.			
4.			
5.			

<sup>1</sup> Each of the five project choices must be with a different supervisor

## **ME4M06 Project Selection Sheet – Group Submission**

Note: This form is also posted on Avenue. This Project Selection Sheet – Group Submission form is to be filled by those students who have already formed a group (i.e., have already agreed to work together on a 4M06 project). Minimum and maximum group sizes are three and four students respectively. Submit your completed Project Selection Sheet (only one sheet per group with e-signatures) to the Avenue drop box of Dr. Jain by September 13<sup>th</sup>, 11.59 PM. The submission should be made by the tentative group leader. When a group submits this form, it is understood that the group members will not be making an individual Project Selection Sheet submission.

Student Names	Student ID:	Student e-signatures ( <u>required</u> )
1.		
2.		
3.		
4.		

List (in decreasing order of preference) five different supervisors and five project codes (one from each supervisor) on which you would like to work. It is mandatory to list all 5 choices. Each choice must be with a different project supervisor. Your group size must be consistent with the group size required for each of the chosen projects in the Project List provided on Avenue.

Last Name of Supervisor <sup>1</sup>	Project code (from Project List)	Did you meet with supervisor (yes/no)?	Brief Comments
1.			
2.			
3.			
4.			
5.			

<sup>1</sup> Each of the five project choices must be with a different supervisor

## 4M06 Lectures

(Online, Mondays, Wednesdays and Thursdays at 5:30 PM in Term 1 only)

A multiple choice test based on the lectures noted below (worth 5% of the mark towards the course grade) will be conducted online via Avenue on October 28<sup>th</sup>, 9:30 AM – 10:20 AM. Tentative lecture dates, names of speakers and lecture topics are given in the table below. A MS-Teams link to join the lectures has been set-up for the students and participating lecturers. Note that three of the lectures are asynchronous and the lecture material will be posted on Avenue for students to learn on their own.

Date	Speaker	Topic
Sept. 7	Mukesh Jain	Overview of 4M06 Course Structure and Expectations
Sept. 9	Participating 4M06 project Supervisors	Overview of 4M06 projects
Sept. 13	Slides and Video on Avenue from Dr. Cotton	Sustainability ( <i>Asynchronous</i> )
Sept. 14	Video on Avenue from Dr. Koshy	Machining for Manufacturing ( <i>Asynchronous</i> )
Sept. 16	Katie Harding	Library Instruction
Sept. 20	Dr. Mukesh Jain	Scope of Work document preparation (material is <u>not</u> included on the Multiple Choice Test)
Sept. 21	No lecture	No lecture
Sept. 23	Dr. Greg Wohl	Technical Writing I
Sept. 27	Dr. Greg Wohl	Technical Writing II
Sept. 28	Kathryn Leistner	Never apply to a job posting again
Sept. 30	Dr. John MacKinnon	Success in the workplace, time management and professionalism
Oct. 4	John Colenbrander	Safety in the Project Labs
Oct. 5	Brad Coughlan	Soft Skills
Oct. 7	Dr. Stuart Fraser	Human factors in design in the nuclear industry
Oct. 18	Tracey Caruana (PEO)	Professionalism
Oct. 19	John Colenbrander	Design project funding application preparation
Oct. 21	Kavin Tanaka	(Topic to be determined)
Oct. 25	Dr. Don Metzger	Design consulting in the Canadian nuclear industry
-	Dr. Wajih Hamouda	Engineers in the real world ( <i>Asynchronous</i> )
Oct. 28	Multiple Choice Test	Online test on Avenue

Note: The order of lectures may change depending upon any changes in schedules of the speakers. The list will be updated with new information and reposted on Avenue in such cases. Please check the course web site regularly for any changes/updates. There will be no lectures in Term 2.

# STUDENT SUPPORTS

## WELLNESS

### Student Wellness Centre

On-Campus Support for Medical and Mental Health Concerns. Doctors and Counsellors available. Located in PGCL, 2nd Floor.

**Mon-Fri 9AM-5PM 905-525-9140 ext. 27700**  
<https://wellness.mcmaster.ca/contact-us/>

### Main St. West Urgent Care Centre

For immediate health concerns that do not require the emergency room.

**690 Main St W - Mon-Sun 9AM-9PM**

### Emergency Rooms

For **immediate, serious** health concerns.

**St. Joseph's Healthcare Hamilton**  
50 Charlton Ave E

**McMaster Children's Hospital**  
Students 17 and under

### Telehealth Ontario

Telehealth Ontario is a free, confidential service you can call to get health advice or information. A Registered Nurse will take your call 24 hours a day, seven days a week.

**Toll-free: 1-866-797-0000 Toll-free TTY: 1-866-797-0007**

### Phone Lines

#### Good2Talk

Confidential helpline providing professional counselling, info and referrals for mental health, addiction, and well-being

**1-866-925-5454**

#### LGBT Youthline

Confidential, non-judgemental & informed LGBTQQ2SI peer support.

**Sun-Fri, 4-9:30 PM, Text 647-694-4275**

#### SACHA (SEXUAL ASSAULT CENTRE - HAMILTON AREA)

Confidential, anonymous 24-hour nonjudgmental telephone support for adults who have experienced sexual violence at any point in their lives; will provide accompaniment to hospital or police station for survivors wishing to seek medical attention or report; counselling services & public education

**905-525-4162**

#### Empower Me (Graduate Students)

24/7 accessible counselling services to empower you to thrive, crisis support, mental health and well-being services.

**1-844-741-6389**

#### Bounceback

CBT skills-building for mild to moderate depression and anxiety for people 15 or older. If accessed through self-referral, the client's primary care provider will be notified.

**1-866-345-0224**

## INDIGENOUS STUDENTS

### Indigenous Student Services

Academic & social counselling, employment aid  
LRW 1010

**ext. 23788**

**indigenous.admin@mcmaster.ca**  
**indigenous.mcmaster.ca**

## INTERNATIONAL STUDENTS

### International Student Services

Advising services for international students and exchange students  
GH 104

**ext. 24254**

**iss@mcmaster.ca**  
**iss.mcmaster.ca**

# STUDENT SUPPORTS

## ACADEMIC

### Student Success Centre

Academic skills assistance, job search, volunteering  
GH 110

ext. 24254  
[studentsuccess@mcmaster.ca](mailto:studentsuccess@mcmaster.ca)

### Student Accessibility Services

Disability services, assistive technology support  
MUSC B107

ext. 28652  
[sas@mcmaster.ca](mailto:sas@mcmaster.ca)

### TutorOcean

Student to Student Tutoring Services  
<https://mcmaster.tutorocean.com/>

## FINANCIAL

### Office of Student Financial aid and Scholarships

Emergency funding, government funds, OSAP assistance, scholarships, work programs  
GH 120

ext. 24319  
<https://registrar.mcmaster.ca/aid-awards/>

## FOOD

### Food Collective Centre (FKA Mac Bread Bin)

The Food Collective Centre is a service run by students dedicated to cultivating stronger food systems in the McMaster and surrounding community. (MSU Service)

[macbreadbin@msu.mcmaster.ca](mailto:macbreadbin@msu.mcmaster.ca)  
<https://www.msumcmaster.ca/services-directory/14-food-collective-centre>

### Neighbour 2 Neighbour

Food bank, community kitchen, community counselling, help with paying for utilities, and more. Hamilton Mountain.

905-574-1334 <http://www.n2ncentre.com/>

## CRISIS SUPPORT

### Barrett Centre for Crisis Support

Provides a safe environment in the community and responds to the needs of individuals, 16 years of age or older, who experience a mental health crisis and do not require a hospital stay. Confidential and free services 24/7/365

24 Hour Crisis Line: 905-529-7878, Toll Free: 1-844-777-3571

### COAST (Crisis Outreach and Support Team)

Hamilton's crisis line is answered 24 hours a day, 7 days a week. The COAST mobile team, consisting of a mental health worker, and a police officer, will respond to crisis calls between the hours of 8 a.m. and 1 a.m. daily.

905-972-8338

### Oakville Distress Centre

Distress Centre Halton provides telephone and online support to people to better cope with crisis, loneliness, and emotional stress. Also serves the Hamilton area.

905-849-4541

### Assaulted Women's Helpline

Free, anonymous and confidential telephone and TTY crisis telephone line to all women in the province of Ontario who have experienced any form of abuse. Provides crisis counselling, safety planning, emotional support, information and referrals accessible 24/7/365.

Toll-free: 1-866-863-0511 TTY: 1-866-863-7868

### Crisis Resources in the GTA

The CAMH Distress Crisis Resources web page lists a number of phone lines, response teams and hospitals in the GTA.

<https://www.camh.ca/en/health-info/crisis-resources>

# STUDENT SUPPORTS

## OTHER

### **Student Assistance Plan (Undergraduate)**

Psychological counseling (offered in-person, over the phone, or over secure video) and academic-life services (legal consultation, financial consultation, life coaching, nutrition consultation and wellness resources offered virtually or in-person)

<https://www.msumcmaster.ca/services-directory/36-health-and-dental-insurance/student-assistance-plan>

### **Ombuds Office**

Advice for students, staff, and faculty regarding academic and non-academic concerns.

MUSC 210

ext. 24151

[ombuds@mcmaster.ca](mailto:ombuds@mcmaster.ca)

[mcmaster.ca/ombuds](http://mcmaster.ca/ombuds)

### **SWHAT - Walk Safe Program**

The Student Walk Home Attendant Team (SWHAT) is a volunteer service within the McMaster Students Union that will walk or bus with students during the evening hours 7 days a week, in all kinds of weather! (MSU Service)

Ext. 27500

[swhat@msu.mcmaster.ca](mailto:swhat@msu.mcmaster.ca)

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