COURSE INFORMATION

Course Name:	Steel Structures — Course Code: CIV ENG 4N04
Session Offered:	Fall 2024
Calendar Description:	Introduction to structural design in steel: gravity and lateral loads and load paths in buildings, tension members, bolted and welded connections, compression members, braced and unbraced beams, combined axial and flexural loading.
Pre-Requisites:	Structural Analysis (3G04), Civil Engineering Materials & Design
Instructor:	(3P04) Ramla K. Qureshi, PhD (quresr11@mcmaster.ca)
Teaching Assistants:	Anirban Kundu (kundua6@mcmaster.ca) Georgios Efstathopoulos (efstathg@mcmaster.ca) Majdi Flah (flahm@mcmaster.ca) Monjee Almustafa (almustm@mcmaster.ca)
Lectures:	Tuesday, Wednesday, and Friday 12:30PM - 1:20PM
Tutorials:	Tuesday 8:30AM - 10:20AM
Course Materials:	I have designed this course using Universal Design for Learning (UDL) principles, providing multiple ways to engage with the course content. You'll have opportunities to interact directly with me and the TAs during in-person lecture and tutorial sessions, and will have access to recorded materials that you can review at your own pace. All lecture slides, notes, and examples will be available on the course website after class to support different learning preferences. These materials are meant to enhance your in-class experience, not replace it. Active participation during lectures is key to deepening your understanding and achieving success in this course. If you miss a class, connect with your classmates first, then review the online materials, and use instructor and TA office hours for additional support. I'm committed to providing a flexible and inclusive learning environment, so please reach out if you need any additional accommodations or support.
Website:	On Avenue to Learn (http://avenue.mcmaster.ca). Please sign up immediately because important information and course documents will be posted there. It is your responsibility to check the course website regularly.
Email:	**The general email address for this course is CE4N04@mcmaster.ca.** You can expect a response from TAs within 1 business day, or from the instructor within 3 business days. **Please start the subject line with "4N04:" to make your email stand out.**
TA Office Hours:	Monday 1:30PM-2:30PM in TA office or Zoom – Use this time for questions about lecture topics from the previous week, or for assistance with project deliverables due within the current week.
Instructor Office Hours:	Thursday 1:00PM-2:00PM in office or Zoom – This is a backup for general questions about the course or concepts that were not clear from lecture or tutorial.
Accommodations:	In line with university policy, I'm committed to providing the necessary accommodations to help you succeed. If you need adjustments, such as extended deadlines or alternative formats, please reach out early so we can make arrangements. If you have an accommodation plan through the university, sharing it with me in a timely manner will help us implement it effectively. For more information or to arrange an accommodation plan, you can contact Student Accessibility Services at sas@mcmaster.ca.

1. COURSE OBJECTIVES

As a Civil Engineer, you'll be tasked with designing essential civic and critical infrastructure, ranging from high-rise buildings and long-span bridges to telecommunication towers and off-shore wind farms. To ensure all these structures are safe and functional, you need to understand how to design them for strength and serviceability. You will also need to understand building code stipulations and the science behind them.

We'll start by focusing on fundamental aspects of structural design common to all materials: understanding how structures carry loads, calculating these loads using the National Building Code of Canada (NBC 2020), and applying the principles of Limit States Design.

The majority of the course will then concentrate on the behavior and design of steel members according to the Canadian steel standard CSA S16:19. We'll cover tension members, including bolted and welded connections, then move on to compression members, bending members, and situations involving combined flexural and axial loading. If time permits, we may also explore design variations considering fire safety and earthquake engineering principles.

Throughout the duration of the course, you will complete a term project involving the design of a low-rise steel structure and conduct technical peer review of another project.

2. COURSE SPECIFIC POLICIES

This course is designed to provide an engaging environment that supports all students in becoming proficient structural engineering professionals. To achieve this, we will approach the course as a real-world engineering design office, with the following expectations to ensure a productive and collaborative learning experience:

- **Be punctual.** Just as in a professional setting, arriving on time demonstrates respect for colleagues and ensures you don't miss important information. If late, minimize disruption by quietly taking the first available seat.
- **Come prepared to work.** Preparation is key in engineering practice. Review course materials beforehand and bring necessary stationary and a calculator to engage actively in each session.
- **Apply critical thinking.** Approach problems with an open mind, applying critical thinking to solve engineering challenges and innovate solutions.
- **Keep communication professional:** Communicate clearly and respectfully with peers and instructors, reflecting the professionalism expected in the field. This includes respecting diverse perspectives and approaches in discussions and project work.
- **Submit assignments on time.** Meeting deadlines is a standard expectation in professional practice, and a similar expectation is upheld in this class.
- **Submit original work.** Do not present someone else's work, ideas, or words as your own. Use of any form of GenAI, unless discussed in the classroom and assigned as part of homework, is considered plagiarism.
- **Collaborate effectively.** Engineering projects often require teamwork. Share responsibilities and support your peers, similar to how you would in a professional team setting.
- **Minimize disruption.** Maintain a focused learning environment by silencing or turning off mobile phones and electronic devices during class. If you must, only use electronic devices for class purposes. Studies* show lower grades for students who sit near others who are distracted with their devices. If you are disrupting the class, you may be asked to leave, and a meeting with the Chair of the Department may be required. If you are affected by the behavior of other students, please inform me via email so that I can address your concerns.

* For example, see: Sana, Weston, Cepeda. 2013. Laptop multitasking hinders classroom learning for both users and nearby peers. *Computers and Education*, 62: 24-31. DOI: https://doi.org/10.1016/j.compedu.2012.10.003; and:
Carter, Greenberg, Walker. 2017. The impact of computer usage on academic performance: evidence from a randomized trial at the United States Military Academy. Economics of Education Review, 56: 118-132. DOI: http://dx.doi.org/10.1016/j.econedurev.2016.12.005

Books

Required: *Handbook of Steel Construction, 12th Edition*. Canadian Institute of Steel Construction, Markham ON.

A Student Discount Code is now available for this handbook.

Link to purchase: https://steelstore.cisc-icca.ca/collections/cisc-publications-for-nbcc-2020-series-codes/products/handbook-of-steel-construction-12th-edition-2nd-printing-2023

Promo code: **Y3XZXTP471QZQUR**
Quantity Limit: one publication per student
Code Active Date: August 30, 2024
Code Expiry Date: September 27, 2024 (promo code will not be extended beyond this date)

Important Note from CISC:
"To purchase the hardcopy Handbook publication, students must use the link above and use the promo code at checkout. Electronic publications or products (courses) are non-refundable.
Please note, students must use their school email address in order to qualify. The order will be automatically cancelled if a general email address is provided. Please stress on your students the importance of providing a full and correct shipping address, including apartment or unit numbers while placing the order. In case the order is returned to the fulfillment warehouse due to incomplete or incorrect shipping address, all charges associated with this process will be deducted from the refund. Please refer to "Refund Policy" on the CISC Steel Store web site."

Note from Instructor: Neither the Digital Subscription nor the 11th Edition will suit your needs for this class.

Recommended: Kulak GL, Grondin GY. 2021. *Limit States Design in Structural Steel. 11th Edition*. Canadian Institute of Steel Construction, Markham ON.

Recommended: Metten AWF, Driver RG. 2015. *Structural Steel for Canadian Buildings. 3rd Ed*. Structured Solutions.

Extreme Circumstances and Other Modifications
In accordance with McMaster Policy, I may adjust the lecture and assessment schedule during the term. If this happens, the class will be given reasonable notice, an explanation, and an opportunity to comment, although I will not necessarily make changes in response to comments received. It is your responsibility to stay informed of changes by attending all lectures and by checking the course website regularly.

Equity, Diversity, and Inclusion
In keeping with the university's Anti-Discrimination Policy, I want to note that you have a right to an environment that is free of discrimination and harassment. If you have any concerns, please do not hesitate to contact me or the Equity and Inclusion Office (https://equity.mcmaster.ca/contact-us/). Like many people, I am still in the process of learning about diverse perspectives and identities. If something was said in class (by anyone, including me) that made you feel uncomfortable, it is always an option to speak to me about it or to send anonymous feedback.

3. APPROXIMATE SCHEDULE

Week		Lecture Topics (subject to change without notice)	Project Due Dates (subject to change)
1	3 Sep	Welcome to 4N04	
	4 Sep	The Design Process	
	6 Sep	Limit States Design	
2	10 Sep	Structural Steel	Project Report 0 (PR 0)
	11 Sep	Introduction to Tension Members	
	13 Sep	Net Area Calculations	
3	17 Sep	Block Shear	PR 1
	18 Sep	Other Failure Surfaces	
	20 Sep	Bolted Connections	
4	24 Sep	Analysis of Bolted Connections	Technical Peer Review 1 (TPR 1)
	25 Sep	Slip-Critical & Bearing-Type Connections	
	27 Sep	Bolted Connections in Shear & Tension	
5	1 Oct	Introduction to Welded Connections	PR 2
	2 Oct	Fillet Welds	
	4 Oct	Shear Lag in Welded Connections	
6	8 Oct	Introduction to Compression Members: Column Theory	TPR 2
	9 Oct	Local Stability	
	11 Oct	Effective Length	
	15 Oct		
	16 Oct	**Midterm Recess: No Lectures or Tutorial**	
	18 Oct		
7	22 Oct	Torsional Buckling	PR 3
	23 Oct	Base Plate Design	
	25 Oct	Column Design Example	
8	**29 Oct**	Introduction to Beams	**Mid-term Exam (will be held in Tutorial sessions)**
	30 Oct	Flexural Strength and LTB	
	1 Nov	Sheer Strength and Deflections in Beams	
9	5 Nov	Axial Tension & Flexure	PR 4
	6 Nov	Beam Design Example	
	8 Nov	Beam Design Example	
10	12 Nov	Introduction to Beam-Columns	TPR 3
	13 Nov	Braced Frames and Local Buckling	
	15 Nov	Example	
11	19 Nov	Unbraced Frames	PR 5
	20 Nov	Sway & P-Delta	
	22 Nov	Example	
12	26 Nov	Fire Resistance of Steel	TPR 4
	27 Nov	Seismic hazard	
	29 Nov	Fire & EQ, continued.	
13	3 Dec	Course Wrap-up & Review	
	4 Dec	Course Wrap-up & Review	Final Project Report (PR 6) submission
Final Exam		Scheduled during the regular University Final Examination period established by the Registrar's Office	

4. ASSESSMENT OF LEARNING	WEIGHT
Final Exam (to be scheduled by the Registrar's Office)	up to 40%[1]
Midterm Exam **(October 29 during Tutorial Time)**	up to 25%[1]
Project Deliverables There will be approximately 6 Project Reports (PR) and 4 Technical Peer Reviews (TPR) to be completed throughout the term. Each PR and TPR will include both individual (80% of each submission) and group work (20% of each submission) components. Most project deliverables will involve components of the design project, which involves the design of a low-rise steel structure. All group members will receive the same grade for the group work portion only.	up to 30%[4]
Final Group Design Project Report In addition to the final project deliverables, the final group design project report will comprise structural drawings and a technical discussion on your design. It will be a direct extension to your submissions throughout the term.	up to 5%[4]
Lecture Participation (Optional)	up to 10%[1]

Notes:

1. **Lecture Participation Grade:** One or more poll questions will be asked during every lecture, with a limited time for you to respond. Each lecture where you answer every poll will count as "attended," regardless of whether your answers are correct. The percentage of lectures "attended" will be multiplied by 10% to produce your participation grade, and the weight of the other course components will be reduced proportionally.
   Example: *You almost always attend lecture, but your phone sometimes doesn't work so your responses are not always registered. You end up qualifying as having "attended" 80% of lectures. In this case, your participation grade will be 8%, your final exam will be worth 36.8% of your final grade, your midterm will be worth 23.0% of your final grade, your assignments will be worth 27.6% of your final grade, and the final group design project report will be worth 4.6% of your final grade.*

2. **Late Submissions:** If a project deliverable will be accepted after the regular deadline, the deadline for late submissions will be listed on the assignment. A deduction of 20% will apply (e.g., a student who scores 80% on the assignment will receive 60% if it is submitted late).

3. **Discussions of Feedback:** You are encouraged to discuss the feedback that you receive on any project deliverable or exam with your TAs or the course instructor. If you believe that you have received an incorrect grade on any piece of assessment, you must return it to the person who marked it, together with a written explanation of why you believe the grade was incorrect, within one week of the day that the assessment was returned. This may result in the grade increasing, decreasing, or remaining the same.

4. **MSAFs:** In accordance with university policy, the McMaster Student Absence Form (MSAF) may be used to request relief for missed work, and must be followed promptly by an email from the student. For project deliverables, the accommodation for a Type A MSAF (Self-Report) will be to waive the late penalty for the individual component of the assignment and defer the weight of the group component to the final exam, unless the group attests that the student submitting the MSAF has contributed sufficiently to receive the group grade. It is the responsibility of the student requesting the MSAF to arrange for the group's written attestation. Accommodations for other situations will be determined on a case-by-case basis. When accommodations are made, they will be confirmed by email from the course instructor; any grades that are missing on the course website will be counted as zero when calculating your final grade unless you have received email confirmation otherwise.

5. **Submission:** All assignments will be submitted in the designated dropboxes on the course website.

5. LEARNING OUTCOMES

When you have successfully completed this course, you will be able to:

- identify key elements of steel structures, such as braces, columns, and beams [CEAB Indicator 1.4]
- calculate the forces in these members using fundamental principles of engineering statics, including strategies for solving trusses and for drawing shear force and bending moment diagrams [CEAB Indicators 1.3 and 1.4]
- describe the limit states of these elements and their connections using words, sketches, and calculations [CEAB Indicators 1.4 and 7.2]
- navigate the CISC Handbook of Steel Construction [CEAB Indicators 1.4, 5.2, and 8.2]
- apply this fundamental and specialized engineering knowledge to solve unfamiliar problems in steel design [CEAB Indicators 3.1 and 3.2]
- design steel elements using the current Canadian steel specification, S16:19, to resist the loading conditions specified in the latest National Building Code of Canada, NBC 2020 [CEAB Indicators 1.4, 2.1, 2.2, 4.2, 4.3, 4.4, and 8.2]
- identify the assumptions that are required to design these elements, the limitations of the equations that are used for analysis and design, and the limitations of your own knowledge in this area [CEAB Indicators 2.1, 2.2, and 12.1]
- work in a team to synthesize and evaluate designs [CEAB Indicators 3.2, 4.2, 4.3, 4.4, 6.1, and 6.2]
- integrate the design of individual structural elements into a larger project, and communicate the design, including its context and limitations, using writing and drawings [CEAB Indicators 4.2, 4.3, 4.4, and 7.2]

If you achieve these objectives, you will be able to contribute meaningfully to the work that structural engineers do, whether in a design office or in academia.

Graduate Attributes and CEAB Indicators

Through this course, you will develop in the following graduate attributes and indicators:

1. A knowledge base for engineering (Demonstrated competence in university level mathematics, natural sciences, engineering fundamentals, and specialized engineering knowledge appropriate to the program.)
   - *1.3† Competence in Engineering Fundamentals*
   - *1.4† Competence in Specialized Engineering knowledge*
2. Problem analysis (An ability to use appropriate knowledge and skills to identify, formulate, analyze, and solve complex engineering problems in order to reach substantiated conclusions.)
   - *2.1† Identifies and states reasonable assumptions and suitable engineering fundamentals, before proposing a solution path to a problem.*
   - *2.2 Proposes problem solutions supported by substantiated reasoning, recognizing the limitations of the solutions*.
3. Investigation (An ability to conduct investigations of complex problems by methods that include appropriate experiments, analysis and interpretation of data, and synthesis of information in order to reach valid conclusions.)
   - *3.1 Selects appropriately from relevant knowledge base to plan appropriate data collection methods and analysis strategies.*
   - *3.2 Synthesizes the results of an investigation to reach valid conclusions.*
4. Design (An ability to design solutions for complex, open-ended engineering problems and to design systems, components or processes that meet specified needs with appropriate attention to health and safety risks, applicable standards, and economic, environmental, cultural and societal considerations.)
   - *4.2 Explores a breadth of potential solutions, considering their benefits and trade-offs as they relate to the project requirements.*
   - *4.3 Develops models/prototypes; tests, evaluates, and iterates as appropriate.*

†Denotes an indicator that is measured in this course for CEAB Accreditation purposes.

4.4† Justifies and reflects on design decisions, giving consideration to limitations, assumptions, constraints and other relevant factors.

5. Use of Engineering Tools (An ability to create, select, apply, adapt, and extend appropriate techniques, resources, and modern engineering tools to a range of engineering activities, from simple to complex, with an understanding of the associated limitations.)
   5.2 Successfully uses engineering tools.
6. Individual and Teamwork (An ability to work effectively as a member and leader in teams, preferably in a multidisciplinary setting.)
   6.1 Actively contributes to the planning and execution of a team project.
   6.2 Manages interpersonal relationships, taking leadership responsibilities as needed.
7. Communication Skills (An ability to communicate complex engineering concepts within the profession and with society at large. Such abilities include reading, writing, speaking and listening, and the ability to comprehend and write effective reports and design documentation, and to give and effectively respond to clear instructions.)
   7.2† Composes an effective written document for the intended audience.
8. Professionalism (An understanding of the roles and responsibilities of the professional engineer in society, especially the primary role of protection of the public and the public interest.)
   8.2 Integrates appropriate standards, codes, legal and regulatory factors into decision making.
12. Life-Long Learning (An ability to identify and to address their own educational needs in a changing world in ways sufficient to maintain their competence and to allow them to contribute to the advancement of knowledge.)
   12.1† Critically assesses one's own educational needs and opportunities for growth.

6. LABORATORY SAFETY

The Faculty of Engineering is committed to McMaster University's Workplace and Environmental Health and Safety Policy which states: "Students are required by University policy to comply with all University health, safety and environmental programs and policies". It is your responsibility to understand McMaster University's Risk Management system, which is supported by a collection of Risk Management Manuals (RMMs) that contain programs and policies in support of the Risk Management System. The RMMs are available from https://hr.mcmaster.ca/employees/health_safety_well-being/our-safety/risk-management-manuals-rmms/.

It is also your responsibility to follow any specific Standard Operating Procedures (SOPs) provided for specific experiments (see course lab manuals) and the laboratory equipment https://www.eng.mcmaster.ca/sites/default/files/civil_lab_health_and_safety_manual.pdf

Additionally, McMaster University's workplace health and safety guidance related to COVID-19 must always be followed (available from https://hr.mcmaster.ca/resources/covid19/workplace-health-and-safety-guidance-during-covid-19/).

The safety requirements for the ADL are listed below. Students not abiding by these safety requirements will be given one warning. Second offences will result in the student being asked to vacate the laboratory and receiving a grade of zero for that particular lab.

- Green Patch safety boots, hard hats, and safety glasses must be worn at all times. Note that students supply their own safety boots. Hard hats and safety-glasses are available in the lab. Prescription eye-glasses are only considered as safety glasses if they have side shields.
- Maintain a safe distance from the universal tester while the sample is being loaded.
- No one will create a situation that could compromise or jeopardize the safety of themselves or anyone else in the lab. Obey all instructions given to you by the Teaching Assistant and/or lab technical staff.
- No running is allowed.

7. COMMUNICATIONS

It is the student's responsibility to:

- Maintain current contact information with the University, including address, phone numbers, and emergency contact information.
- Use the University provided e-mail address or maintain a valid forwarding e-mail address.
- Regularly check the official University communications channels. Official University communications are considered received if sent by postal mail, by fax, or by e-mail to the student's designated primary e-mail account via their "@mcmaster.ca" alias.
- Accept that forwarded e-mails may be lost and that e-mail is considered received if sent via the student's @mcmaster.ca alias.
- Check the McMaster/Avenue email and course websites on a regular basis during the term.

8. POLICIES

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*, 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

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".

The McMaster Student Absence Form is a self-reporting tool for **Undergraduate Students** to report absences that last up to 5 days and provides the ability to request accommodation for any missed academic work. Please note, this tool cannot be used during any final examination period. You may submit a maximum of 1 Academic Work Missed requests per term. It is **your** responsibility to follow up with your Instructor immediately regarding the nature of the accommodation. If you are absent more than 5 days or exceed 1 request per term you **must** visit your Associate Dean's Office (Faculty Office). You may be required to provide supporting documentation. This form should be filled out immediately when you are about to return to class after your absence.

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.

PROTECTION OF PRIVACY ACT (FIPPA)

The Freedom of Information and Protection of Privacy Act (FIPPA) applies to universities. Instructors should take care to protect student names, student numbers, grades, and all other personal information at all times. For example, the submission and return of assignments and the posting of grades must be done in a manner that ensures confidentiality – see http://www.mcmaster.ca/univsec/fippa/fippa.cfm.

ANTI-DISCRIMINATION

The Faculty of Engineering is concerned with ensuring an environment that is free of all discrimination. If there is a problem, individuals are reminded that they should contact the Department Chair, the Sexual Harassment Officer, or the Human Rights Consultant, as soon as possible. https://www.mcmaster.ca/policy/General/HR/Discrimination_and_Harassment.pdf

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.

9. MCMASTER GRADING SCALE

Grade	Equivalent Grade Point	Equivalent Percentages
A+	12	90-100
A	11	85-89
A-	10	80-84
B+	9	77-79
B	8	73-76
B-	7	70-72
C+	6	67-69
C	5	63-66
C-	4	60-62
D+	3	57-59
D	2	53-56
D-	1	50-52
F	0	0-49