

COURSE INFORMATION

Course Name: Reinforced Concrete Design **Course Code:** CIV ENG 3J04

Session Offered: Winter 2024

Calendar Description: Design by limit states methods to ensure adequate capacities for bending moment, shear and diagonal tension, axial force, bond and anchorage; and design to satisfy serviceability requirements for deflection and cracking; practical design requirements; interpretation of building code and design standards for behaviour of structures.

Pre-Requisites: Structural Analysis (CIV ENG 3G04), Civil Eng. Materials & Design (CIV ENG 3P04)

Instructor: Wael El-Dakhkhni, Ph.D., P.Eng., P.E., F.ASCE (eldak@mcmaster.ca) JHE 303

Teaching Assistants: Lily Wilson <wilsol13@mcmaster.ca>
Ahmed Moussa <moussa1@mcmaster.ca>
TBA <??@mcmaster.ca>

Lectures: Mondays, Wednesdays, Thursdays 10:30AM - 11:20AM

Tutorials: Mondays 8:30AM - 10:20AM
(Tutorial start date/week will be announced during the lectures. See further instructions on A2L course website as applicable)

Laboratory: Sec. 1: Fr 8:30AM- 11:20AM, Sec. 2: Tu 2:30PM- 5:20PM, Sec. 3: Fr 2:30PM-5:20PM
(Laboratory start date/ and student group schedule will be discussed during the lectures. See further instructions on A2L course website)

Website: On Avenue to Learn (A2L) (<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.

TA Office Hours: TBA (see instructions on course website)– Please contact XXX for questions regarding already-marked assignments and XXX for questions regarding upcoming assignments due.

Instructor Office Hours: The instructor will be available following each lecture to answer general questions related to course concepts that could not be adequately addressed during lectures or tutorials. This time shall not be used to repeat missed information during the tutorial or lectures.

Books/material:

Recommended: CAC, "Concrete Design Handbook", Canadian Portland Cement Association", 4th Edition, Ottawa, ON, 2016 (This contains A23.3-14, Design of Concrete Structures. <https://www.cement.ca/technical-publications/>)

Required: The CSA A23.3-14 or -19 can be accessed freely through the McMaster library website. **In all cases, a hard copy of the relevant pages of CSA A23.3-14 or -19 is a must for the class.**

Recommended: Omar Chaallal "Reinforced Concrete Structures, Design According to CSA A23.3-14" Pearson Education Canada Inc., 2nd edition, 2018. ISBN 978-2-7605-4997-5.
<https://www.puq.ca/catalogue/livres/reinforced-concrete-structures-2nd-edition-3637.html>

1. COURSE OBJECTIVES

Please refer to Section 5 for the Learning Outcomes of this course. The course will first focus on reviewing some key aspects pertaining to structural analysis and material behavior; explaining key building system behavior and limit state design concepts; and outlining loading provisions of the National Building Code of Canada (NBC 2020). Following this introduction, the primary objective of this course is to empower students with the foundation to: a) understand the behavior of key reinforced concrete structural components (beams and one-way slabs, columns, beam-columns); and b) successfully analyze and design such reinforced concrete components, satisfying strength and serviceability limit states in accordance with CSA-A23.3 "Design of Concrete Structures".

2. COURSE SPECIFIC POLICIES

Background: There is a lack of mechanics-focused and recent-standards-conforming (e.g., CSA A23.3-19) textbooks in Canada. As such, the instructor and Mr. Yasser Elleathy spent six months in 2020 developing highly visual course notes, lectures and tutorials specifically to you. A course mobile app to help you review course materials is also being finalized and the details of which will be provided in due time.

The course instructor is a registered professional engineer in Canada and USA and has been a reinforced concrete designer and site supervisor for more than 28 years. The TA's have in-depth understanding of structural analysis and mechanics and hands-on experience in reinforced concrete design. The instructor's and the TA's professional experience is key to ensure real-life relevance to the course and is a valuable resource.

Great effort has been undertaken to make your learning experience during this course not only technically interesting, but also exciting, inspiring and enjoyable. If after you have attended the lectures and tutorials and studied the course notes, you still have questions, please reach out to any member of the teaching team and we will do our best to help. Design courses, such as 3J04, highly depends on the instructor's design experience and their work within standards and code committees. Our goal is to provide you with in-depth knowledge of reinforced concrete design to become competent design professionals and a fellow practicing engineer in the near future.

To facilitate such experience transfer, please ensure adherence to the [Code of Student Rights & Responsibilities](#) during lectures, tutorials, and office hours, both during online (as applicable) and physical interactions. For example, whether you are participating in-person or online (e.g., during TA office hours and lectures as applicable):

- **Speak (write) with respect.** Do not say or write something online that would be inappropriate to say in person.
- **Show with respect.** If you choose to turn on your video or share your screen, ensure that the video does not show anything that would be inappropriate to show in person. Dress in a way that would be acceptable for an in-person class, and do not show anything (e.g., your background) that would be considered offensive.
- **Be prepared to work.** Check the course website before coming and expect to participate actively in every class, including having a calculator with you.
- **Participate in class** like you would in person. Do not try to multi-task. If you disrupt the class, the instructor/TA will remove you from the session without warning. Violations to the [Code of Student Rights & Responsibilities](#) will be reported Student Support and Case Management Office for investigation.

If you are bothered by the behaviour of other students, please let the instructor know to address your concerns.

Virtual Synchronous Lectures

The course will be delivered in-person. In extreme/rare situations, some lectures may be offered on-line (live). In such cases, the course will use Zoom.us as the sole Virtual platform for any possible live/synchronous activities. Lecture videos will not be posted following their live delivery. Please note that:

- Please create a McMaster Zoom account (free) – <https://mcmaster.zoom.us>
- Login to all 3J04 Zoom meetings using your @mcmaster.ca e-mail. Only students logging in using their McMaster Zoom accounts will be allowed in class. Zoom invitations and passwords will be posted on A2L.
- The meeting hosts (Course instructor & TA's) have access to the chat transcript for all messages during the meetings. Therefore, please **avoid sending any personal information through the Zoom chat function**.
- Students will be muted during the lecture unless they have questions.

Communication, Discussion, and Feedback

All formal communications regarding this course will be through McMaster's e-mail account (NOT A2L email function). Please be sure to check your McMaster email account regularly. If you are not receiving e-mails regarding 3J04, it is your responsibility to contact the department with your McMaster e-mail address and ensure your name is on the distribution list. Similar information will be posted on Avenue to Learn.

E-mail subject line must start with the course number (otherwise, your e-mail will be filtered out) followed by a colon and includes a relevant description of the content in the e-mail (e.g., 3J04: Assignment 2 question).

Following this policy, students may expect a response from the TA's within two business days, or from the instructor in three business days. E-mails that do not follow this policy will not receive a response.

You are encouraged to discuss the feedback that you receive on your assignments with the course TA's and the course instructor. If you believe that you have received incorrect grades, you must contact the teaching team immediately with an e-mail explanation. This process should be no later than one week of the day that the assignment was returned.

Lectures and Tutorials: The lectures will present theoretical/design background and some illustrative examples. The tutorials will be used to demonstrate additional examples, provide assistance with problem solving, and for special presentations. In certain situations, the tutorial and laboratory sessions may also be used to give a lecture and vice versa; you will be notified in advance if this will occur. It is your responsibility to attend the course lectures, tutorials, and laboratories as well as to check the CIV ENG 3J04 course website (<http://avenue.mcmaster.ca>) on a regular basis.

Assignments: All assignments are to be submitted to the 3J04 course website as one file for each submission and only the latest file will be considered for grading (<http://avenue.mcmaster.ca>). The purpose of the assignment problems is to give you an opportunity to develop an in-depth understanding of the course material. While discussion with other students of the background and approach to solution of problems is often beneficial, you need to ensure that you solve each problem on your own (i.e., the way it will be during the tests and final exam). You are strongly encouraged to solve the problems in the practice problems sets prior to the tutorial time. Problems similar to, but necessary the same as, that in the assignments will be discussed during the tutorial time. All work that you submit for grading must be your own work. Assistance on working out these problems will be available during the tutorial sessions. Although the course includes assignments, you are strongly encouraged to solve additional problems available in the Concrete Design Handbook and the recommended textbook (if you decided to use it).

Assignment Submissions: Unless the instructor has specifically allowed the late submission of a particular assignment for a particular or all students in writing, late submissions will be handled according to: From 0-24 hrs late – 25% Penalty; From 24-48 hrs late – 50% Penalty; and No submission will be marked after 48 hrs.

Laboratory Report and Safety:

- Each student must prepare **their own laboratory report** based on their specific lab assignment.
- Detailed instructions about these laboratory sessions, assignments and report requirements will be posted on the course website.

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 Workplace and Environmental Health and Safety programs and policies. For information on these programs and policies please refer to McMaster University Environmental and Health Support Services Occupational Safety Risk Management Manual at: <https://hr.mcmaster.ca/app/uploads/2019/07/2019-McMaster-Lab-Manual.pdf>

It is also your responsibility to follow any specific Standard Operating Procedures (SOPs) provided for some of the experiments and the laboratory equipment. McMaster University's workplace health and safety guidance during COVID-19 should always be followed. The details and updates of this guidance can be found at <https://hr.mcmaster.ca/resources/covid19/workplace-health-and-safety-guidance-during-covid-19/> .

The safety requirements for all Civil Engineering laboratories are listed below. Students who do not comply with health and safety requirements will not be allowed to participate in the lab.

- Glasses or safety glasses/goggles must be worn in the lab at all times
- Contact lenses are not to be worn in the lab.
- No short (i.e., above the knee) pants or skirts are permitted in the lab – lab coats must be worn over top of your clothing in these instances.
- **CSA-approved Closed-toe shoes with CSA's Triangle Green Patch must be worn at all times.**
- No loose clothing allowed.
- Long hair must be tied back.
- Gloves must be worn when working with hazardous chemicals (as indicated by the laboratory instructor).

In addition, the following instructions have been provided specifically for this course by the Applied Dynamics Laboratory supervisor, Kent Wheeler:

- PPE Required: **During the lab, students are required to wear CSA-Green Patch safety boots, hard hats, and safety eye-glasses at all times.** 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.
 - These safety requirements are emphasized (1) through a pre-lab form which each student must sign, (2) through lab work instruction sheets, and (3) instructor/TA/technicians check each student to ensure they are wearing the above items.
 - Prior to each lab, students are verbally reminded that they should wear the above safety equipment at all times, and in addition lab specific safety instructions are given to students by the instructor/TA/technicians.
 - Failure to comply with safety rules, will result in the individual student being denied access to the lab and given a "did not complete" grade for the lab session. **In the case of the 3J04, this means an automatic F grade.**
- In the event of a another COVID or similar pandemics, the Standard Operating Procedures for the Applied Dynamics Laboratory are available at: https://www.eng.mcmaster.ca/civil/sites/default/files/adl_lab_covid-19_sop.pdf .

3. SCHEDULE		
Week/Date	Lecture	Tutorial/Assessment
Week 1, January 8 th	Introduction to Design Process, Codes & Standards, Loads on Buildings, Materials, and Limits States Design.	Statics Review Assignment 1
Week 2, January 15 th	Beam under Flexure. Introduction to Beam Flexural Behaviour , Analysis & Design. Singly Reinforced Rectangular Beams Analysis .	Flexural Analysis
Week 3, January 22 nd	Beam under Flexure. Singly and Doubly Reinforced Rectangular Beam Analyses .	Flexural Analysis Assignment 2
Week 4, January 29 th	Beam under Flexure. Flanged-Sections Analysis.	Flexural Analysis
Week 5, February 5 th	Beam under Flexure. Design Logic and Processes.	Flexural Design Assignment 3
Week 6, February 12 th	Beam Shear Behaviour, Analysis and Design. Labs start @ ADL immediately after mid-term recess	Shear Design Assignment 4
Week 7, February 19 th	Mid-Term Recess. No Classes.	-
Week 8, February 26 th	Axial and Flexural Load Resistance of Short Columns. Column Behaviour Introduction and Concepts .	Column Analysis Labs start @ ADL
Week 9, March 4 th	Axial and Flexural Load Resistance of Short Columns. Column Behaviour and Interaction Diagrams .	Column Analysis Mid-term Test (Monday, March 4th 8:30 am-10:20pm, HSC 1A6)
Week 10, March 11 th	Axial and Flexural Load Resistance of Short Columns. Column Uniaxial and Biaxial Bending Design .	Column Analysis Assignment 5
Week 11, March 18 th	Axial and Flexural Load Resistance of Slender Columns . Serviceability : Deflection and Crack Width Calculation, Limits and Control.	Serviceability
Week 12, March 25 th	Bond and Anchorage of Reinforcement: Development Length, Hooks for Flexural Reinforcement, Stirrups and Ties, Bar Cut-Off, Other Requirements.	Bond and Anchorage Assignment 6
Week 13, April 1 st	The Engineering Art of Reinforcement Detailing	Q&A
Week 14, April 8 th	Review /classes end on Wednesday April 10 th	Q&A
From April 12 th to 25 th	2 ½ hours Scheduled During the Regular University Final Examination Period Established by The Registrar's Office	

4. ASSESSMENT OF LEARNING	WEIGHT %
Assignments	Six assignments @4% each*
Laboratory report	10%
Mid-Term Test	20%
Final Exam	50%

Important Notes

- You must obtain at least 50% of the final exam mark to pass the course.**
- You must obtain at least 50% of the final exam mark, for the assignment marks to be considered/counted towards your final course grade. Failure to achieve at least 50% of the final exam grade will nullify your assignment grade (i.e., assignments grade will be considered zero).**
- You must safely participate in your specific assigned laboratory at the ADL, submit the laboratory report, and obtain at least 50% mark on the report to pass the course. The grade for this course component cannot be re-allocated to any other component (e.g., due to an MSAF) because of the unique experimental and practical problem analysis nature of the lab.**
- *Submitting an approved MSAF form for an assignment grants you an additional 48 hours to submit it, counted from its original due date/time. Assignments submitted passed the 48 hours extension will not be marked (i.e., assigned a zero mark).**
- The final percentage grade will be converted to a letter grade using the Registrar's scale shown in the McMaster Undergraduate Calendar.

5. LEARNING OUTCOMES

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

- Identify and state reasonable reinforced concrete analysis and design assumptions and suitable associated engineering fundamentals, before proposing a solution path to the relevant problem. [CEAB Indicator 2.1].
- Propose reinforced concrete analysis and design problem solutions supported by substantiated reasoning, recognizing the limitations of your solutions. [CEAB Indicator 2.2]
- Justify and reflect on analysis and design decisions, giving consideration to limitations, assumptions, constraints and other relevant factors. [CEAB Indicator 4.4].
- Integrate appropriate standards, codes, legal and regulatory factors into relevant decision making. [CEAB Indicator 8.2].

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 also develop in some of the following graduate attributes and associated 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 Demonstrates an ability to identify reasonable assumptions (including identification of uncertainties and imprecise information) that could or should be made before a solution path is proposed.

2.3 Obtains substantiated conclusions as a result of problem solution including recognizing relevant limitations.

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 Ability to recognize and discuss applicable theory knowledge base.
 - 3.2 Selects appropriate model and methods and identifies assumptions and constraints.
 - 3.3 Estimate outcomes, uncertainties and determine appropriate data to collect.
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.)
 - 4.1 Recognizes and follows an engineering design process.
 - 4.2 Recognizes and follows engineering design principles.
 - 4.3 Obtains experience with open-ended problems.
 - 4.5 Able to determine and include appropriate health and safety considerations.
 - 4.6 Determines and employs applicable standards and codes of practice.
6. Individual and teamwork (Ability to work effectively as a team member/leader, preferably in a multi-disciplinary setting)
 - 6.1 Ability to manage time and processes effectively, prioritizing competing demands to achieve personal and team goals and objectives.
 - 6.3 Able to work in a group, taking and leadership a leadership role as appropriate.
7. Communication (An ability to communicate complex engineering concepts within the profession and with society at large. Such ability includes 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.)
 - 7.1 Demonstrates an ability to respond to technical and non-technical instructions and questions.
 - 7.2 Presents instructions and information clearly and concisely.
- 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.)
 - 8.1 Understands the role of the engineer in society, especially in protection of the public and public interest.
 - 8.2 Understands legal requirements governing engineering activities (including but not limited to personnel, health, safety, and risk issues).
- 11 Economics (An ability to appropriately incorporate economics and business practices including project, risk, and change management into the practice of engineering and to understand their limitations.)
 - 11.2 Can plan and effectively manage time, resources, and scope.

6. 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 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/A2L email and course websites on a regular basis during the term.

7. 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](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, including the use, in any way, of large language models, and any other form of Artificial Intelligence tools.
- 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’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 and course notes** by the University instructors.

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, please contact the Department Chair, the Sexual Harassment Officer, or the Human Rights Consultant, as soon as possible. <https://secretariat.mcmaster.ca/app/uploads/Discrimination-and-Harassment-Policy.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.

8. 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