

Chemistry for Engineers

Chem1101D – Winter 2025

Course Instructor: Alisha Szozda  [Hear my name](#)

How to address me: Prof. Alisha

Gender Pronouns: (she/her/hers) ([learn more](#))

Email: AlishaSzozda@cunet.carleton.ca

Note: If you have a question or would like to talk with me, you can send an email, visit me during student hours (see below), or approach me before or after lecture.

Student Hours: TBD

Science Student Success Centre (Herzberg laboratories 3431)

What are 'Student Hours'?

Student hours are dedicated times through the week for the course instructor and TAs to meet with YOU. Pop in to introduce yourself, ask questions about the course, or discuss content from the course.

Note: If these times don't work for you, email me and we can arrange an alternate time to meet.

Class Location: Please check Carleton Central for the room location

[Click here for visual directions.](#)

Class Times: Monday & Wednesday, 11:35am-12:55pm

Prerequisites: Permission of the Department

Course TAs:

Alex Smith

[\(alexsmith3@cmail.carleton.ca\)](mailto:alexsmith3@cmail.carleton.ca)

Amer Abdelgany

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Sheyla Montero Vega

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Welcome to the course!

In this course, all students are welcome, including all races, colours, cultures, ethnicities, genders, and sexualities. This course is a space for respect for each other, including students, teaching assistants, staff, and professors. I am happy to work with students to implement approved academic accommodations. I am committed to fostering a supportive learning environment for all students. It is my hope that our class will support a diversity of experiences, thoughts, and perspectives. If you have any questions, concerns, or suggestions, please feel free to contact me.

If you are sick, please stay home. The class is recorded, and all course notes (including annotated notes) will be provided on the course website (Brightspace). While the midterms and exam are in person, please contact me and request a deferral if you are ill, rather than coming to campus.

Land Acknowledgement

Here at Carleton University, it is important that we acknowledge that the land on which we gather is the traditional and unceded territory of the Algonquin nation. ([learn more](#))



Course Information and Materials

Course Description

In this CHEM 1101 course, you will learn fundamental concepts in chemistry, including: atomic and molecular theory, phases of matter, mixtures and solutions, stoichiometry, thermodynamics, and chemical equilibrium. Throughout the course, you will learn about Green Chemistry Principles to connect these fundamental chemistry concepts with broader contexts (e.g., global challenges). In addition, you will learn and practice transferable skills such as reporting scientific values, problem-solving, and scientific argumentation that are beneficial to all science disciplines.

Course Textbook

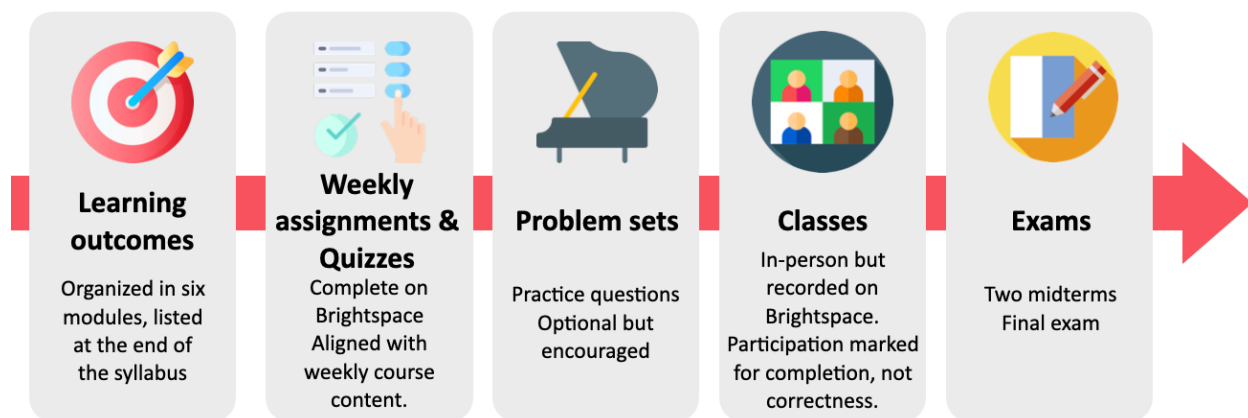
Olmsted, John A., Williams, Gregory M., Burk, Robert C. (2020). *Chemistry 4th edition*. Wiley
This textbook is available at the [Carleton University bookstore](#). The textbook is available in print or electronically (at a reduced cost). We will not be using the online homework feature with this textbook. You are not required to purchase this textbook, but it is recommended if you would like extra practice problems for this course.

Technology Checklist:

- An internet-enabled computer (laptop/desktop)
- Zoom software installed on computer (can also install on phone as backup!)
- Access to reliable internet
- Webcam
- Headset with microphone

Note: If you do not have access to some or all of these resources, there are several options to consider. (1) You can apply for [financial aid](#), (2) there are some inexpensive options for purchasing technology (Best Buy refurbished products, Kijiji), & (3) single workspaces are available for student use on campus. Every student has free access to [Zoom](#) and internet access on campus using your [MyCarleton1 credentials](#).

Course Format



All the details and information for the course are located in **Brightspace**. I send announcements with key information. Please check it regularly. There are specific learning outcomes for this course located below.

Intended Learning Outcomes

Learning outcomes describe the knowledge, skills, and values that you as the learner should be able to demonstrate by the end of the learning period, in this case, by the end of each module or the course. The course is designed so that each learning outcome has associated instruction (e.g., videos, text, or class time), practice opportunities (e.g., class questions, practice problems), and assessment (e.g., assignments, midterm, final exam). Please feel free to ask questions anytime!

Overarching learning outcomes

- Apply core chemical concepts and processes to solving complex problems in the real world
- Describe macroscopic properties of chemical substances and explain how atomic or molecular behaviour accounts for those properties, including in everyday situations.
- Appreciate the interdisciplinary nature of chemistry and relate chemical concepts to problems in other disciplines
- Construct scientific arguments in chemistry, using evidence and causal reasoning to support a claim—these arguments relate to any question where you are asked to explain “why” or to “justify” your response
- Use green chemistry principles to calculate environmental impact-based metrics in chemistry to compare how environmentally friendly one thing/decision is compared to another
- Use inclusive language and behaviour in all aspects of the course, including classes and assessments (to be self-assessed)

Module 1: Math/Measurement skills

- Calculate with values in standard or exponential/scientific notation (on a calculator)
- Relate the number of digits reported in a measured or calculated value to the precision of the original measurement(s)
- Report your own calculated values to the appropriate number of significant figures
- Determine how many significant figures are in a measured value
- Determine the position of the significant figures in a measured value
- Determine how many significant figures are in the result of a calculation that involves at least one measured value

Module 2: Stoichiometry

- Describe the rules of conservation of atoms in chemical reactions
- Predict the relative amounts of reagents consumed and leftover during chemical equations
- Carry out stoichiometry calculations with limiting reagents and specific yields

Module 3: Atomic structure and properties

- Use the interaction to electromagnetic radiation and matter to determine the strength of the net forces of attraction involved (between an electron and its nucleus and between individual atoms of a material such as a metal)
- Relate the electromagnetic radiation emitted or absorbed to transitions between levels in the hydrogen atom
- Determine work functions and ionization energies given wavelength data from electromagnetic radiation and vice versa
- Relate electron configurations based on atomic number and position on the periodic table

- Predict the electron configuration of any element
- Determine the relative energies of electrons (electromagnetic potential energies relative to the nucleus) based on electron configurations
- Correctly assign quantum numbers to electrons based on their electron configurations/orbital diagrams
- Relate chemical and physical properties to electron configurations
- Predict relative atomic radii, ionization energies and electronegativities

Module 4: Molecular structure and properties

- Use IUPAC rules to name binary ionic and covalent compounds
- Use accepted names for common molecular ions
- Predict bonding arrangements and bond orders based on Lewis rules
- Use the VSEPR model to predict the shapes of molecules with steric #'s 2, 3, 4, 5, and 6.
- Predict bond and net dipoles
- Predict if an atom is sp_3 , sp_2 or sp hybridized
- Draw a Molecular Orbital Diagram for any p-block binary compound
- Predict bond orders in binary covalent compounds based on molecular orbital (MO) theory
- Draw a band diagram for any network solid up to $_{20}\text{Ca}$
- Predict simple electrical behaviour in network solids based on band diagrams

Module 5: Phases of Matter

- Understand the assumptions on which the ideal gas law is based
- Calculate pressure, volume, amount, or temperature of a gas that is behaving ideally, including partial pressures
- Understand the reasons for non-ideal behaviour related to kinetic molecular theory
- Calculate the pressure of a gas that is behaving non-ideally
- Predict the relative magnitudes of intermolecular forces and their effects on physical properties of substances such as cohesion, adhesion, surface tension, and vapour pressure
- Describe intermolecular forces in liquids and relate them to heat of vaporization
- Calculate the vapour pressure or boiling point of a liquid
- Describe intermolecular forces in solids
- Relate the intermolecular forces in crystalline solids to the crystal lattice energy
- Draw and use a Born-Haber cycle
- Interpret a one-component phase diagram
- Describe the temperature/pressure dependence of phase changes
- Label and use a one-component phase diagram
- Describe select colligative properties of solutions and relate them to intermolecular forces
- Describe ideal and non-ideal solutions of ionic solutes
- Calculate the boiling points and freezing points of ideal and non-ideal solutions

Module 6: Thermodynamics

- Describe how thermal energy relates to chemical reactions and balanced equations
- Calculate heats of reaction from standard heats of formation
- Understand the links between the phase and size of atoms and molecules and their entropy
- Calculate entropy change of reaction from standard entropies

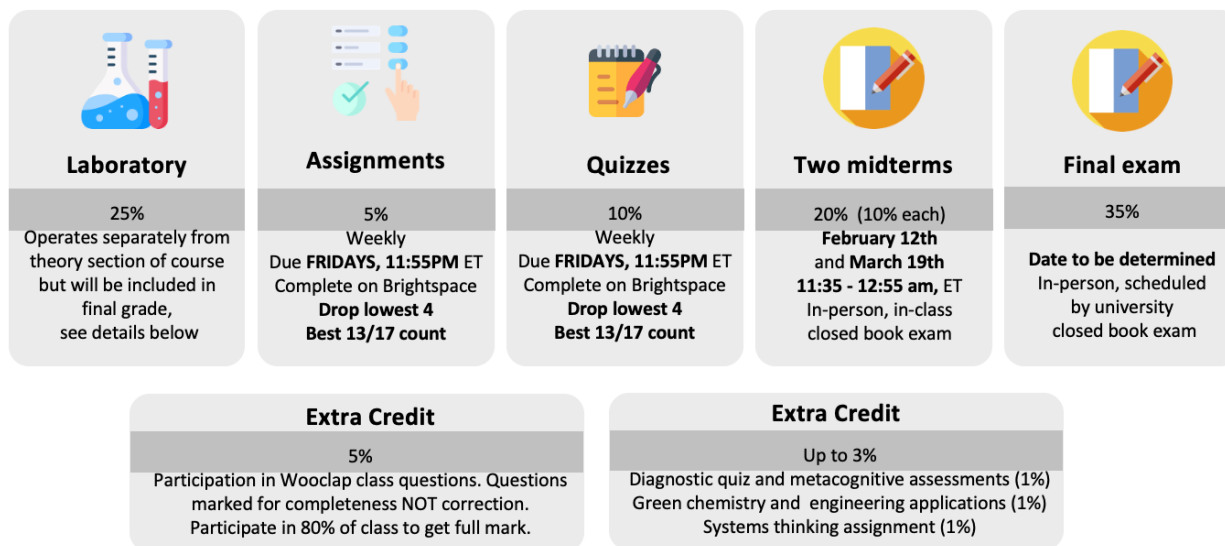
- Understand the principle of free energy and how it relates to enthalpy and entropy of reactions
- Calculate the free energy for a reaction from standard free energies
- Calculate the free energy for a reaction from its standard enthalpy and entropy
- Understand the difference between standard and non-standard state
- Calculate non-standard state free energy from standard state free energy and actual reaction conditions, Q

Assessment and Key Deadlines

Research about learning strongly suggests that the most important factor in learning is doing the work of reading, writing, recalling, practicing, synthesizing, and analyzing. Learning happens best when people actively engage material on a consistent basis, and that is why we have high standards in this course. We are confident that, with appropriate effort, you **all** can meet those standards.

We also make an effort to reduce unintentional bias in grading by using methods such as grading assignments one question at a time (i.e., grading all of question 1 before grading any of question 2), grading anonymously, and using rubrics.

Grade Breakdown



Note: Your grade will be calculated individually to give you the best possible final grade based on the following three options.

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
LABORATORY	25%	25%	25%	25%
PARTICIPATION (WOOLAP)	5%	5%	5%	5%
ASSIGNMENTS	5%	5%	5%	5%
QUIZZES	10%	10%	10%	10%
MIDTERM 1	10%	--	10%	--
MIDTERM 2	10%	10%	--	--
FINAL EXAM	35%	45%	45%	55%
BONUS ASSIGNMENTS	3%	3%	3%	3%

Laboratory

The laboratory part of this course is mandatory for all students.

The lab portion of this course is worth 25% of your final CHEM 1101 grade but it is administered separately from the lectures. To pass CHEM 1101, **you MUST complete all the lab requirements**. There is a separate Brightspace page for the lab that includes instructions, expectations and information on how labs will be evaluated.

You are registered in a lab section (L1, L2, L3 or L4), but you will also be assigned to a lab group (A, B, C, D, E, F, G or H). Labs are every other week. Refer to the lab schedule on the lab Brightspace page for the dates that your lab group will perform the experiments. "**Groups**" are listed in the "**Tools**" drop-down menu in the course navigation bar on the lab Brightspace page. If your name does not appear on this list by the date of your first lab, please email your lab coordinator: Fraser Colquhoun (FraserColquhoun@cunet.carleton.ca).

Each Group is assigned a Teaching Assistant (TA) who will mark your lab assignments. To find out which TA has been assigned to mark your reports, visit the "**Meet the Teaching Team**" page under the "**Course Overview**" module.

Please eat before coming to your labs (especially for morning labs) - you will be on your feet for three hours at a time. You must do the online lab safety training before your first lab. Instructions are on Brightspace.

Safety glasses and lab coats must be always worn in the laboratory. You should avoid wearing contacts in the lab, in case of an emergency they may interfere with flushing your eyes. A lab manual and lab notebook, and a lab fee, are also required. Everything is available from Science Stores (room 118 SC) for about \$60. Please buy these items before your first lab period.

If you have questions or problems with the lab scheduling, etc., please contact the lab coordinator: Fraser Colquhoun (FraserColquhoun@cunet.carleton.ca).

You must complete an on-line training course on Workplace Hazardous Materials Information System before your first lab period. Instructions are in the laboratory folder on BrightSpace.

Assignments

There are six modules in this course, each containing several topics. Each topic (excluding special topics) will be assessed through an assignment and topic quizzes each week.

Assignments will be completed on Brightspace, will count for 10% of your grade, and will be **due on Fridays at 11:55 pm ET** approximately one week after learning the topic. We understand situations happen, therefore, to accommodate for these situations, your four lowest-scored topic quizzes will be dropped.

Questions will be similar to the provided practice problems and textbook questions and will be great practice for the topic quizzes, midterms and the final exam. You will be allowed to enter and exit the assignments as many times as you like before the due date/time. However, you need to make sure you submit the assignment before or by the due date to receive any marks.

All assessment deadlines can be found at the end of this syllabus and on Brightspace. **MAKE SURE YOU DON'T FORGET TO SUBMIT THE ASSIGNMENT** - Brightspace will not submit it for you.

All assessment deadlines can be found at the end of this syllabus and on Brightspace.

Quizzes

Each lecture (excluding the special topics and review lectures) will have an associated topic quiz to be answered and submitted on Brightspace and are due **Friday at 11:55PM** approximately one week after the lecture (see class schedule or Brightspace for formal deadlines). Marks are accorded for correctness (not completion). Please be sure to review the details of the quiz to see the academic integrity instructions, number of attempts allowed, and other details. These quizzes will also be answered and submitted on Brightspace and count for 10% of your grade. You will have 2 attempts to complete each quiz. You will receive your quiz grade as soon as possible after submission and answers will appear after the deadline. Your lowest 4 quiz marks will automatically be dropped before I calculate your final grade

Topic quizzes consist of (usually) one or two questions to test whether you've understood the material well enough to do a question on it in a limited amount of time. These are open book/open notes/open internet but must be **your own work**.

YOU WILL NOT BE ABLE TO ENTER AN ANSWER ONCE TIME RUNS OUT so it's up to you to watch the timer. I will not re-open the quiz for you if you run out of time before entering an answer, and I will not mark your written work instead of your quiz if you run out of time.

Participation

Being an active participant in your learning has been shown to have many benefits such as improved course grades (and decreased course failures), increased retention and transfer of new information, increased motivation, and improved critical thinking skills.

You will actively participate (synchronously) in class through problem-solving, asking and answering questions, and having discussions with your peers to count towards **5% of your overall grade**

Submissions are marked for completion, not correctness. You need to participate in 80% of classes to receive the full participation extra credit mark; there's no need to tell me if/why you miss a class. You will need to participate in **all questions** to get the participation mark for each class.

Participation is optional in the first class. I recommend that you participate to test out the tools and identify any technical issues.

Participation in the course also depends on one of our equity, diversity, and inclusion learning outcomes: Use inclusive language and behaviour in all aspects of the course, including classes and assessments; you can do so by inviting classmates into discussions, being respectful in conversations, and using inclusive language.

To improve equity in the course, classes will be recorded through Zoom and automatically uploaded to Brightspace with closed captioning. Zoom recordings for lectures will be posted to the "Class recordings-Zoom" tab in Brightspace. Please keep the class recordings private.

Please note that the recordings are only a partial substitute for the learning that occurs in class, so it is in your best interest to make every effort to attend class, to avoid procrastination and falling behind in the course.

Active student participation in problem-solving through the completion of homework is also linked to success in learning chemistry. Therefore, practice problems will be provided for each topic that will

provide the opportunity for self-assessment, and help you make sure you are keeping up with the course content. Also, a great resource to prepare for the midterms and final exam.

Midterms

The midterms and final exam will reflect the intended learning outcomes to date and all aspects of the course (e.g., assignments, topic quizzes, practice problems, lecture notes).

There will be two midterms in this course; each will cover nearly half of the course, worth 10%. The midterms will be handwritten on paper during class time, in our regular classroom. They will be closed-book, closed-notes format however, a periodic table, formulas and constants will be provided on the exam. You will need a calculator - programmable and/or graphing is acceptable, but cell phones or any other device with transmit/receive capabilities are not acceptable.

The midterm answers and grades will be returned to you - typically one to two weeks after they are written. I encourage you to check what you did right and wrong to prepare you for the final exam. The midterm dates are listed in the Assessment breakdown figure above.

Final Exam

The final exam is mandatory - you must write it and obtain a mark of 40% or higher to pass the course. If you earn a lower mark than this on the final exam, your overall grade will be an F, regardless of what your numerical marks add up to.

The final exam is cumulative to the entire term. The exam format will be similar to the midterms; by the time you write the exam, you'll have had lots of practice with the format and question types.

The exam will take place in person, with the time, date and location set by university examination services. Exam dates and times are usually posted around the time of the reading week break. The exam period is listed in the [university calendar](#). You must be available to write the exam on campus at any time during that period.

If you miss the exam for any reason, you'll have to apply to the University Registrar's Office to [request a deferred exam](#).

Academic integrity is of paramount importance in this course. There is more information further down in the syllabus. Be sure to check the specific academic integrity instructions for each assessment.

Re-correction Requests

If there is an error in the correction of an assessment in the course (e.g., midterm), you may request a re-correction. Requests for re-correction of midterms must be submitted by filling out a form on Brightspace, no later than 10 working days from the first day marked work is available for review. Submissions after the deadline will not be considered. The new score could be lower, the same, or higher than your original score.

Extra Credit/BONUS marks

There will be a total of 3 bonus activities that you can complete to earn an additional 1% for your final mark in this course. Max 3% bonus.

Bonus Assignment 1: Diagnostic quiz and metacognitive assessments

Details on this bonus assignment are found in the module "Bonus Assignments > Bonus Assignment 1: Diagnostic Quiz and Metacognitive Assessment".

On the second day of class, we will be running a diagnostic quiz to figure out what your incoming chemistry knowledge is, and to give you experience taking in person tests in a university environment. Before this test, there will be an online metacognitive assessment you can choose to complete. Finally, at the end of the course there will be an online reflection available. Their due dates are as follows:

- Metacognitive Assessment: Online, by Tuesday January 7th at 11:55PM
- Diagnostic Quiz: In class, on Wednesday January 8th at 8:35 AM
- Post Course Reflection: Online, by Friday April 11th at 11:55 PM

If you do the diagnostic quiz, metacognitive assessment, and post-course reflection by their associated due dates, you will receive a bonus 1% for your final grade. If you miss any, you will not receive a bonus. All or nothing.

Bonus Assignment 2: Green Chemistry and Engineering Applications

Details on this bonus assignment are found in the module “Bonus Assignments > Bonus Assignment 2: Green Chemistry and Engineering Applications”.

Find and summarize a peer-reviewed article that describes an application of green chemistry. You must explain how this article relates to concepts discussed in this course and indicate what principles of green chemistry are being used in the research. If you are having a difficult time finding a peer-reviewed article, you can access the research help desk at the MacOdrum library:

<https://library.carleton.ca/services/research-help>

You are not allowed to copy anyone else’s report, nor share your report with other classmates. They will be checked for plagiarism (and standard consequences for plagiarism will be applied)

If you complete this assignment and submit by **March 28th at 11:55PM** you will receive a bonus 1% for your final grade.

Bonus Assignment 3: Systems thinking Assignment

Details on this bonus assignment are found in the module “Bonus Assignments > Bonus Assignment 3: Systems thinking Assignment”.

If you complete this assignment and submit by **March 28th at 11:55PM** you will receive a bonus 1% for your final grade.

University Policies









In accordance with the Carleton University Undergraduate Calendar Regulations, the letter grades assigned in this course will have the following percentage equivalents:

A+ = 90-100	B+ = 77-79	C+ = 67-69	D+ = 57-59	F = <50
A = 85-89	B = 73-76	C = 63-66	D = 53-56	WDN = Withdraw from the course
A- = 80-84	B- = 70-72	C- = 60-62	D- = 50-52	DEF = Deferred

Copyright

My lectures and course materials (including all PowerPoint presentations, handouts, videos, and similar materials) are protected by copyright. I am the exclusive owner of copyright and intellectual property of all course materials. You may take notes and make copies of course materials for your own educational use. You may not allow others to reproduce or distribute lecture notes and course materials publicly for commercial purposes without my express written consent.

Communication in this course

 <p>Before/after class</p> <p>Using the chat or in person. I try to have 15 minutes available before and after each class.</p>	 <p>Email</p> <p>Use for confidential messages. Please put CHEM1101B in the subject line. I do my best to respond within one business day.</p>	 <p>Student hours</p> <p>During student hours (formerly known as office hours), you can ask questions or simply listen.</p>	 <p>Questions - Slack</p> <p>Slack is a good place to ask general questions about the course concepts or structure. You can get the app or work in a browser.</p>	 <p>Meeting</p> <p>If the other ways don't work for you, please connect me via email to arrange a one-on-one meeting over zoom</p>
 <p>Announcements</p> <p>Please check Brightspace announcements regularly and/or turn on notifications. This is where I post key information.</p>	 <p>Questionnaires</p> <p>I'll ask you for information and suggestions periodically, so that I can optimize the course and adjust as we go.</p>	 <p>TAs</p> <p>You can ask TAs questions via email or connect in Slack.</p>		

Speaking with Prof. Alisha: Feel free to ask questions about the course concepts, course structure, our career paths, other career options, succeeding in the course, etc.

Join the conversation via Slack: https://join.slack.com/t/winterchem110-lwu5093/shared_invite/zt-2wti6nq35-xefT81C2SYviKBXDFTi~kQ

In addition to student hours, both sections of this course will be using Slack, a free platform that facilitates online Q&A discussions. We highly encourage you to ask your content questions and general course questions in the appropriate channels on Slack where all students can benefit and collaborate on responses to these questions. Let's all learn together! The course professors and TAs will occasionally monitor the discussion board; however, it is considered a student-driven learning tool where students are expected to help one another. If you have in-depth questions about the course material, please attend student hours, so we can assist you!

Please note that sharing solutions to assignment and quiz questions (through Slack or through other means) is in violation of Carleton University's Academic Integrity Policy (see below)

Online Community Expectations for Social Platforms

We will be using Slack as an online platform to connect with other classmates and ask questions about course concepts. Therefore, it is important to keep in mind that university codes of conduct still apply to the behaviours of students online. Please be considerate and respectful while engaging with peers and remember that we are all humans, and that your words matter. If any student witnesses or experiences harassment, I encourage you to reach out to me. Alternatively, you can contact [Ombuds Services](#) or [Carleton Equity and Inclusive Communities](#).

Online communities can be highly beneficial to students and can help to facilitate learning within the course. I encourage people to ask questions, learn from one another, and have open discussions about class material. That said, any acts of academic misconduct (i.e., cheating) will not be tolerated and will result in serious consequences ranging from a grade reduction to expulsion (see [academic integrity violations](#)).

Examples of **appropriate** peer-to-peer sharing/learning vary from course to course. In this course appropriate peer-to-peer sharing includes:

- identifying the proper formula to use
- identifying an incorrect or missing step in a person's work
- brainstorming potential reasons behind a concept
- suggesting helpful sites and videos for learning a concept
- Posting your own work showing only a specific step or process for illustrative purposes (note: this is very different from posting your work and solution for others to simply copy)

Examples of **unacceptable** peer-to-peer sharing includes

- Posting or sharing the answers to quiz or assignment questions
- Indicating which answers are correct on assignments
- Sharing links to solutions
- Posting your own complete work for a question/solution

General Rules & Guidelines

- *No bullying or harassment (towards other students, or teaching assistants)*
- *No encouraging harassment*
- *No personal attacks*
- *No racism, sexism, homophobia or hate speech of any kind*

There may be specific situations not covered by these rules, and there may also be certain cases where a rule does not apply. If you are concerned, confused, or conflicted over something, please reach out to a TA or me through email for help. Let's do our best to support one another in this class and keep the online experience a safe, inclusive, and positive experience for everyone.

Academic Accommodations, Regulations, Plagiarism, Etc.

Carleton is committed to providing academic accessibility for all individuals. You may need special arrangements to meet your academic obligations during the term. The accommodation request processes are outlined on the Academic Accommodations website (students.carleton.ca/course-outline)

- **Deferred/missed term work for short-term accommodation (5 days or less):** If you require accommodations for this course in a 5 days or less period, please email me to

discuss potential options for accommodations which may involve reweighing assessments in the course breakdown or potential deferred midterms.

- **Deferred/missed term work for longer term incapacitation (5 days or longer);** If you require accommodations for this course that are longer than the 5-day (short-term) period, please email me to discuss how/whether accommodation needs could be met for this course. You will need to go to the Registrar's office for support, but it is important that the instructor is apprised of the long-term accommodation needs. If you need to defer your final exam, please complete the [self-declaration form](#).

Student Resources

Service	Can help with...	Contact Information
Centre for Student Academic Support (CSAS)	Learning support workshops for success in academic writing, study skills, time management and more	613-520-3822 4th Floor MacOdrum Library https://carleton.ca/csas/learning-support/
Science Student Success Centre (SSSC)	Academic support, career connections, community building, health care preparation, science faculty refresher courses, mentoring and research resources.	(613) 520-2600 ext. 3111 3431 Herzberg Laboratories https://sssc.carleton.ca/
Engineering Academic Support	Program requirements, registration and learning support.	613-520-5790 3010 Minto Centre https://carleton.ca/engineering-design/currentstudents/undergrad-academic-support/
Paul Menton Centre (PMC)	Learning disabilities, accommodations and tools.	613-520-6608 501 University Centre www.carleton.ca/pmc
International Student Services Office (ISSO)	International students' needs such as English help, adjustment resources, etc.	613-520-6600 128 University Centre www.carleton.ca/isso

Research help at MacOdrum Library	Library and research help, citation management, account and connection support.	Texting: 613-505-4245 Online chat: https://library.carleton.ca/help Email: askthelibrary@carleton.ca https://library.carleton.ca/services/research-help
Health and Counselling Services	Physical and mental health issues and stress.	613-520-6674 2600 Carleton Technology & Training Centre https://carleton.ca/health/
Departmental Advising	Program specific academic advising	https://carleton.ca/academicadvising/departmental-advisors/

Career Services: <https://carleton.ca/career/>

Writing Services: <https://carleton.ca/csas/support/>

Peer Assisted Study Sessions (PASS): <https://carleton.ca/csas/group-support/pass/>

Math Tutorial Centre: <https://carleton.ca/math/math-tutorial-centre/>

Mental Health

If you are struggling, please do not hesitate to reach out. I am happy to listen, and/or direct you to resources that might help. In terms of class, if you need extra help or missed a lesson, don't stress! Email me and we will set a time to meet. I'll work with you, I promise. Remember that Carleton also offers an array of mental health and well-being resources, which can be found [here](#).

Statement on Chat GPT/Generative Artificial Intelligence (AI) usage

AI Use in this course: Students may use AI tools for basic word processing and formatting functions, including:

- Grammar and spell checking (e.g., Grammarly, Microsoft Word Editor)
- Basic formatting and design suggestions (e.g., Microsoft Word's formatting tools, PowerPoint Design editor)

Documenting AI Use: It is not necessary to document the use of AI for the permitted purposes listed above. If you have questions about a specific use of AI that isn't listed above, please consult me.

Why have I adopted this policy? This policy ensures that student voices and ideas are prioritized and authentically represented, maintaining the integrity of the work produced by students while allowing basic support to enhance clarity, correctness, layout, and flow of ideas. The goal of adopting a limited use of AI is to help students develop foundational skills in writing and critical thinking by practicing substantive content creation without the support of AI.

Limitations. Students may not use AI for the following tasks:

- Writing assignments
- Answer mathematical problems (ChatGPT is a language model, not a calculator. It can easily fumble simple algebra, or be "persuaded" to give inaccurate answers.)

Alternatives: If you need help with unit conversions, I recommend using **WolframAlpha** it is a far better tool for scientists and engineers.

Academic Integrity

Academic Integrity is upholding the values of honesty, trust, respect, fairness, responsibility, and courage that are fundamental to the educational experience. Carleton University provides supports such as academic integrity workshops to ensure, as far as possible, that all students understand the norms and standards of academic integrity that we expect you to uphold. Your teaching team has a responsibility to ensure that their application of the Academic Integrity Policy upholds the university's collective commitments to fairness, equity, and integrity. (Adapted from [Carleton University's Academic Integrity Policy](#), 2021).

Examples of actions that do not adhere to Carleton's Academic Integrity Policy include:

- Plagiarism
- Accessing unauthorized sites for assignments or tests
- Unauthorized collaboration on assignment and exams
- Using artificial intelligence tools such as ChatGPT when your assessment instructions say that it is not permitted

Please review the checklist [linked here](#) to ensure you understand your responsibilities as a student with respect to academic integrity and this course.

Sanctions for Not Abiding by Carleton's Academic Integrity Policy

A student who has not upheld their responsibilities under Carleton's Academic Integrity Policy may be subject to one of several sanctions. A list of standard sanctions in science can be found [here](#).

Additional details about this process can be found on [the Faculty of Science Academic Integrity website](#). Students are expected to familiarize themselves with and follow the Carleton University [Student Academic Integrity Policy](#). The Policy is strictly enforced and is binding on all students.

Students' Rights and Responsibilities

Students are expected to act responsibly and engage respectfully with other students and members of the Carleton and the broader community. See the [7 Rights and Responsibilities Policy](#) for details regarding the expectations of non-academic behaviour of students. Those who participate with another student in the commission of an infraction of this Policy will also be held liable for their actions.

Student Concerns

If a concern arises regarding this course, **your first point of contact is me**: email or drop in during student hours and I will do my best to address your concern. If I am unable to address your concern, the next points of contact are (in this order):



Note: You can also bring your concerns to [Ombuds services](#).

Course Schedule

Chapter	Monday	Tuesday	Wednesday	Thursday	Friday
January					
Ch.1	30	31	1	2	3
Ch. 2-3	<i>Lecture 1</i> 6 11:05pm-12:55pm	7	<i>Diagnostic Quiz</i> 8 11:05pm-12:55pm	9	10
Ch. 4-5	<i>Lecture 2</i> 13 11:05pm-12:55pm	14	<i>Lecture 3</i> 15 11:05pm-12:55pm	16	<i>Assignment/Quiz 1</i> 17 Due 11:55pm
	<i>Lecture 4</i> 20 11:05pm-12:55pm	21	<i>Lecture 5</i> 22 11:05pm-12:55pm	23	<i>Assignment/Quiz 2+3</i> 24 Due 11:55pm
Ch. 6-7	<i>Lecture 6</i> 27 11:05pm-12:55pm	28	<i>Lecture 7</i> 29 11:05pm-12:55pm	30	<i>Assignment/Quiz 4+5</i> 31 Due 11:55pm
February					
Ch. 6 & 9	<i>Lecture 8</i> 3 11:05pm-12:55pm	4	<i>Lecture 9</i> 5 11:05pm-12:55pm	6	<i>Assignment/Quiz 6+7</i> 7 Due 11:55pm
Ch. 12	<i>Review</i> 10 11:05pm-12:55pm	11	MIDTERM 1 12 11:05pm-12:55pm	13	14
Review	17	18	19	20	<i>Winter Break</i> 21
No Classes	<i>Lecture 10</i> 24 11:05pm-12:55pm	25	<i>Lecture 11</i> 26 11:05pm-12:55pm	27	<i>Assignment/Quiz 8+9</i> 28 Due 11:55pm
March					
Ch. 16	<i>Lecture 12</i> 3 11:05pm-12:55pm	4	<i>Lecture 13</i> 5 11:05pm-12:55pm	6	<i>Assignment/Quiz 10+11</i> 7 Due 11:55pm
Ch. 24	<i>Lecture 14</i> 10 11:05pm-12:55pm	11	<i>Lecture 15</i> 12 11:05pm-12:55pm	13	<i>Assignment/Quiz 12+13</i> 14 Due 11:55pm
Ch. 25	<i>Review</i> 17 11:05pm-12:55pm	18	MIDTERM 2 19 11:05pm-12:55pm	20	21
Ch. 28	<i>Lecture 16</i> 24 11:05pm-12:55pm	25	<i>Lecture 17</i> 26 11:05pm-12:55pm	27	<i>Assignment/Quiz 14+15</i> 28 Due 11:55pm
April					

Assignment/Quiz 16+17
Due 11:55pm

Ch. 27	<i>Lecture 18</i> 31 11:05pm-12:55pm	1	<i>Special Topics</i> 2 11:05pm-12:55pm	3	4
	<i>Review</i> 7 11:05pm-12:55pm	8	9	10	11

Note: The schedule is approximate. The textbook chapters are a **rough guide** to the material. We will not cover all parts of each chapter section and some material may be covered in class that is not in the textbook.