CHEM 2020 Introductory Organic Chemistry I

Syllabus

Course	SC/CHEM 2020 3.0 FW22 Sections D, E and F
Term	Fall 2022
Prerequisites	both CHEM 1000 3.00 and CHEM 1001 3.00

Course Instructors

Prof. Christine Le (Section D)
Office: CB 346
Office Hours: TR 15:00-16:00

Prof. Derek Jackson (Section E)
Office: CB 452
Office Hours: MF 15:00-16:00

Dr. Raji Iyer (Section F)
Office: CB 448
Office Hours: MF 14:20-15:20

Lab Coordinator

Olga Girina
Office: CB 308
Telephone: 416-736-2100 x 33091

Course Coordinator

Prof. Pierre Potvin
Office: CB 406
Office Hours: MWF 15:00-16:00
TR 14:00-15:00
other in-person times and Zoom meetings can be arranged

Course Email

chem2020@yorku.ca
This will be the address to use exclusively for all contacts with instructors or with the lab coordinator. Do not use the eClass messaging facility.

Class Meetings

Section D
Lectures MF 13:00-14:20 (LAS C)
Tutorials F 11:30-12:20 (LAS C)
Section E
Lectures MF 13:00-14:20 (VH A)
Tutorials F 11:30-12:20 (ACW 206)
Section F
Lectures TR 17:30-18:50 (CLH C)
Tutorials F 10:30-11:20 (HNE 038)
Important Note: do not schedule a conflict with any other course, as class times will be used for participation and pop quizzes. Students will be expected to write their midterms on predetermined Sunday afternoons (see below).

Laboratory

The lab schedule will be available on the eClass site. The lab sessions will tentatively start the week of September 19. A physical lab manual will be made available in person in due course, but will not be available in electronic format.

Course Materials

Textbook

W. Ogilvie *et al.* Organic Chemistry: Mechanistic Patterns, 2nd edition, Nelson/TopHat

This is an online text for both CHEM 2020 and CHEM 2021 that will be used for all homework practice problems and solutions. Lifetime access for both courses is at the discounted price of $79 CDN. Getting the discounted price will require access to the site through eClass and creation of an account with TopHat. Until access is purchased, students will be able to access the text during a limited-duration trial period.

No additional resource needs to be purchased for this course.

A hardcopy version of this text can be ordered, but it will not be identical to the online version, which will contain some edits, additions and deletions made by the course instructors. Moreover, many of the practice problems are not visible in the hardcopy version.

No other text will be used or supported. Students with the 9th edition of the hardcover version of L. G Wade (Organic Chemistry) or the identical York 2nd custom edition Parts 1 (for CHEM 2020, brown) and 2 (for CHEM 2021, blue cover) will find the same lecture material there, though organized differently: Notably, Chapter 16 and parts of Chapters 14 and 18 will be covered in CHEM 2020 while Chapter 4 will be covered in CHEM 2021. The list of assigned problems from the Wade textbook still applies, but will not be comprehensive and will not follow the same sequence of course materials. For this reason, no equivalency table between texts can be supplied.
While the Wade text can be a useful resource, students relying solely on it will not have access to the designated practice problems, nor to their solutions.

iClicker (REEF)

Students will be expected to set up an iClicker account, but exclusively using the iClicker link on the eClass site (do not add the course through the separate iClicker app).
This is free to York students. Make sure to register your account using your full name and the same email address used on eClass. Otherwise, participation and pop quiz marks will be difficult or impossible for us to assess.

Molecular Model Kit (optional but highly recommended)
This is a very useful tool allowing you to properly visualize molecular structures, conformations and stereochemistry.

Two different kits are available at the York bookstore.
Molecular model kits are allowed at midterms and at the final exam.

Lab Manual

This will be available in hardcopy free of charge. Details will be posted.

Learning Outcomes

Upon completion of the course, students will be able to:

- Assign atomic hybridization and molecular geometries
- Draw resonance structures and assign their importance
- Relate trends in acidities and basicities to structure
- Relate physical properties to intermolecular forces, and to bond and molecular dipole moments
- Describe and interpret aromaticity and resultant properties
- Draw organic structures with a variety of functionalities from common and IUPAC names
- Assign isomers and enantiomers using conventions
- Accurately draw two-dimensional representations of three-dimensional molecules and interpret them
- Draw conformations of alkanes and cycloalkanes and predict their relative energies
- Describe and interpret concepts of stereoisomerism, including chirality
- Draw and interpret chemical reaction equations and mechanisms involving a variety of reagents in combination with alkenes, alkynes, carbonyl groups and other functional groups
- Propose reactants, reagents and products for a variety of transformations
- Propose sequences of transformations leading to a desired outcome

Chapter-specific learning outcomes will be provided as appropriate.

Evaluation

Tentative until Sept. 20, 2022. No exceptions or individual variances from the grading scheme and policies will be made for any student.

Assignments	6%	best 6 of 8
Pop quizzes	6%	best 6 of 8
Participation	6%	see below
Midterms (50-80 min)	2×16%	Oct. 16 and Nov. 20, 2022 (Sundays at 1 pm – room TBD)
Laboratory (5 labs)	20%	individual labs are 2-10% each
Final Exam (180 min)	30%	

Material covered at each midterm to be finalized a week beforehand.

Course Pass Requirements:

- Both lecture and lab components must be passed in order to pass the course.

- Passing the lecture component requires writing the final exam and an overall grade of 40/80 (50%) on everything other than the labs.
- Passing the laboratory component requires an overall grade of 67%, assessed through in-lab performance, pre-lab preparedness and lab reports.
  Students who completed some or all of the lab exercises in person in a previous attempt at the course can be exempted in part or in full from the lab component, and have all or part of their laboratory component assessment grades from their previous attempt at the course transferred to this semester. Labs completed online will not be considered for exemption this semester.

Assignments and associated policies

- Eight assignments are planned, roughly corresponding to one per chapter, starting with Chapter 2. In each, a randomized selection of questions will be assigned to each student, with a time limit on answering on eClass and a time window in which to complete the assignment. Grading is automatic. Students will be able to complete these from home.
- Students will have two attempts at each assignment, with a 24-hour delay between attempts and with only the latest score being retained. This is to encourage students to strengthen their mastery between attempts. No exceptions will be made.
- These are individual assignments. Collaboration (directly or through WhatsApp, Chegg, Discord, etc.) will not be allowed during the attempts and any breach will be prosecuted.
- The best 6 scores will be retained and each will count toward 1% of the final grade.
- In keeping with universal design principles, the amount of time provided to complete the assignments allows for self-accommodation and no other accommodation is required. Because only 6 assignments will count with no replacements or make-ups, no accommodation will be extended for technical issues, religious obligations, or any other unforeseen circumstances.

Pop quizzes and associated policies

- Eight short, in-class quizzes are planned. Their dates and times will not be announced in advance, and attendance will be required to participate. Correct answers (using iClicker) to instructor-chosen questions will count toward each quiz, and the best 6 scores will be retained, each counting toward 1% of the final grade.
- There will be a time limit for each question and answers will be assessed for accuracy. In keeping with universal design principles, the amount of time provided for answering allows for self-accommodation and no other accommodation is required. Because only the best 6 scores will count with no replacements or make-ups, there will be no accommodation for absences,

technical issues, religious obligations, forgotten devices, dead batteries, or any other unforeseen circumstance.

- During the quizzes, strict silence must be maintained. Otherwise, the instructor may cancel the quiz, in which case the quiz score will not be retained for any student, or reschedule it. If more than two of the quizzes are cancelled, the value of each additional quiz will be shifted onto the final exam.
- On pop quiz days, any additional clicker questions during lecture will not count for participation marks.

Participation and associated policies

- Instructors will randomly or systematically take in-class attendance and/or put forth time-limited polling questions for students to answer using iClicker. Accuracy will not be required for polling questions and collaboration is encouraged.
- On days when polling is used, students in attendance need to answer at least one polling question to be credited with participation those days. Of the total opportunities available after Sept. 20, 2022, students who attend and participate:
    - 80% of the time or more will earn 6% toward their final grade
    - 79% or less of the time will earn the prorated fraction of 6% toward their final grade (e.g. 40% participation earns 3%)
- Because only 80% participation is required for full marks, there will be no accommodation for technical issues, absences, religious obligations, forgotten devices, dead batteries, or any other unforeseen circumstance.

Midterms and associated policies

- Two proctored, in-person midterms are planned on the dates announced at the beginning of term. Each will last 50-80 min and count toward 16% of the final grade. Students will be able to check the marking and obtain any needed additional feedback. Students with accommodations will have an extended midterm duration as determined by SAS.
- There will be no make-up midterms and no replacement assignments, without exception, including online replacements.
- Students will not be asked for documented justification of any absence, and none will be accepted.
- The 16% value of any missed midterm will automatically be applied to the final exam, no matter the reason for the absence.

Final Exam and associated policies

- A proctored, in-person final exam lasting 180 min will be scheduled by the Registrar's Office within the published official exam period (December 8-23, 2022 inclusive). The exam schedule will become available sometime in October.

Students are not to make travel plans to start before December 24, and no advanced exams will take place.

- Students with accommodations will have an extended exam duration as determined by SAS.
- Students must write the final exam to pass the course.
- Students missing the final exam will be expected to write the deferred exam, to be scheduled by the course coordinator before the end of the following term. Details will be posted on eClass about the risks associated with missing the final exam, of the procedure to follow in order to write the deferred exam including the submission of justifying documentation, and of the consequences of either not doing so or not showing up for the deferred exam.
- No final grade will be submitted for students missing the final exam. Unless a deferred exam is written, the final grade will automatically revert to F.

Labs and associated policies

- Full details of the expectations on students, their responsibilities and grading will appear in the Fall 2022 lab manual and on eClass. A separate lab conduct agreement will need to be completed to enter the lab.
- Among the expectations:
    - Students will be expected to be punctual and may be denied entry into the lab for lateness.
    - Students will need to wear proper attire and their own protective equipment (details on eClass), and can be refused entry into the lab otherwise.
    - No student cell phones will be allowed in the lab.
    - Safe, professional and respectful conduct will be expected. Otherwise, offending students will need to leave the lab.
- Lab reports will need to be prepared as individual works. Those for labs 4 and 5 need be submitted within a strict 7-day deadline to two modules (Turnitin and Crowdmark, both through eClass). Academic integrity will be strictly enforced. Lateness will be penalized at 10% per day, including weekends, unless a prolonged and documented illness justifies the lateness. ChemDraw is freely available for students and should be used to draw chemical structures and reaction schemes for the reports (and will also be needed for CHEM 2021).
- In keeping with universal design principles, the amount of time provided for these lab reports allows for self-accommodation and no other accommodation is required unless specified by SAS.
- All labs must be completed. Absences will earn a grade of zero for missed labs unless documented justification of a legitimate reason for the absence is provided to the lab coordinator. Every effort will be made to organize a make-up lab session by the lab coordinator, but without guarantee, and students will be expected to attend their assigned make-up session.

Important Information for All Students:

Academic Honesty: Numerous students in Faculty of Science courses have been charged with academic misconduct when materials that they uploaded to third-party repository sites (*e.g.* CourseHero, OneClass, etc.) were used by students in later offerings of the course. Both uploading and downloading students are liable to be charged with a breach of academic honesty. The student presenting such materials as their own work may be charged with plagiarism and the student making such materials available for download may be charged with aiding and abetting that plagiarism on the grounds that they were wilfully blind to the reasonable likelihood of supporting the plagiarism. There is no statute of limitations on charges of academic dishonesty, and repeated offenses may lead to expulsion or the revocation of the degree from graduated students.
Accordingly, to avoid this risk, students are urged *not* to upload their work to such sites. Such sites provide instructors with identifying information according to their Honor Code.
Copyright: Note also that exams, tests, lecture notes, lecture recordings, problem sets and any other video, audio or written works made available to students are the copyrighted works of the instructor, whether copyright is overtly claimed or not (*i.e.* whether © is used or not). Furthermore, instructors are free by law to use and incorporate limited amounts of other copyrighted materials but such may only be legally used within the context of the course.
It is a breach of Canadian copyright law to disseminate, re-publish or upload such documents outside the context of the course without the specific and written permission of the instructor, whether as originally supplied, annotated or otherwise modified, whether in whole or in part, whether as digital copies, photocopies, photographs or scans. Such breach is aggravated when shared or uploaded to third-party sites to potentially aid and abet academic dishonesty.
University policies: Students are required to make themselves aware of school policies relating to Academic Honesty and Integrity, Access, Religious Accommodation, Student Conduct and other matters. Plagiarism and other academic offenses will be sanctioned to the fullest extent in accordance with university and Faculty policies.

A summary of these policies can be accessed at
https://www.yorku.ca/secretariat/policies/policies/academic-honesty-senate-policy-on

What constitutes a breach of academic honesty?
https://www.yorku.ca/unit/vpacad/academic-integrity/academic-honesty-modules/

Student resources on academic integrity:
https://www.yorku.ca/unit/vpacad/academic-integrity/student-resources/

Academic Integrity FAQ:
https://www.yorku.ca/unit/vpacad/academic-integrity/faq/