

Faculty of Science Course Syllabus
Department of Chemistry
CHEM 2442
Organic Chemistry for Pharmacy Students
Fall Term 2019

Instructor: Dr. Travis Lundrigan travis.lundrigan@dal.ca Chemistry Building - Room 112

Lectures: Tuesday: 2:35 – 3:55 pm, Auditorium 1 (McCain Arts Building)

Friday: 2:05 – 4:25 pm, Room 212 (Henry Hicks Building)

Office Hours: Tuesday 12:30 – 1:30 pm and Friday 11:30 – 12:30 pm or by appointment.

(Chem 112)

Course Description

Emphasis will be placed on functional groups, structure and stereochemistry of organic molecules. Examples of biological or pharmaceutical importance will be presented to a greater extent than in the assigned textbook, and, for these examples, questions will be asked on tests and examinations. Reactions that will be covered include: electrophilic addition to alkenes (as an example of reactive intermediates), nucleophilic substitution, elimination reactions, electrophilic aromatic substitution (as an example of substituent effects), and, because of their biochemical significance, oxidation and reduction, simple carbonyl reactions, and interconversions of carboxylic acid derivatives. The class will develop enough chemistry for students to understand the chemical properties of carbohydrates, amino acids, lipids and nucleic acids, the fundamental components of living systems.

Key Knowledge or Skills Expected

Key concepts presented in first-year chemistry courses, including Lewis structures, covalent bonding (hybridization), electronegativity, chemical equations, acid-base equilibria, strong/weak acids/bases, oxidation/reduction, enthalpy and kinetics.

Course Objectives or Learning Outcomes

- To name and draw the structure of organic molecules using the IUPAC rules.
- To distinguish and draw isomers of organic compounds.
- To predict the physical and chemical properties of an organic molecule based on structure.
- To predict the reactivity of organic compounds including arrow-pushing mechanisms.
- To gain an appreciation for chemistry as being essential to the existence of all living organisms.

Course Materials

Textbook: "Introduction to Organic Chemistry", 6th Edition, William H. Brown & Thomas Poon, John Wiley & Sons, Inc., 2017. Older editions in combination with the Student Solutions Manual are permitted.

WileyPLUS course: <https://edugen.wileyplus.com/edugen/class/cls665534/>

Molecular Model Kits: Use is permitted during quizzes, term tests and final exam.

Course Assessment

Component	Weight (% of final grade)	Date
Quizzes	10	Lecture Time
Term Test 1	20	Tues. October 4 th (2:05 – 3:25)
Term Test 2	20	Tues. November 5 th (2:35 – 3:55)
Final Exam	50	TBD by Registrar

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

A+ (90-100)	B+ (77-79)	C+ (65-69)	D (50-54)
A (85-89)	B (73-76)	C (60-64)	F (<50)
A- (80-84)	B- (70-72)	C- (55-59)	

Course Policies

- The quizzes, term tests and final exam will be written/closed book examinations.
- Approximately seven 20-minute quizzes will be given throughout the term at the end of lectures. The content of the quizzes and the dates will be announced in class. When calculating the final quiz grade, the lowest quiz mark will be dropped, and the best five quiz marks will be used to determine the grade.
- There will be no make-ups available for quizzes or term tests.
- If a student misses a term test, they must provide an original medical certificate and then their final grade will be calculated using a revised formula where the missing grade is replaced by a weighted average of the other term test and final exam.
- If a student is ill and misses the final exam, they must provide an original medical certificate and then will have an opportunity to write a make-up exam.
- A total of 50% must be attained to achieve a passing grade in CHEM 2442.
- The Department of Chemistry policy is that for all Chemistry courses at the 2000-4000 level, a minimum grade of 50% on the tests/exam component of the course is required to pass the course.

Advice for Students

Throughout this course, you will notice that many of the topics are compounding, as in an understanding of each concept is required before moving on to the next topic. Therefore, it is crucial to stay up to date on the lecture material since an understanding of the earlier lecture topics is required to gain an understanding for the subsequent topics.

As we progress through the lectures, it is highly recommended that students read through the corresponding chapters in the textbook and practice the problems in the book. There is a Student Solution Manual that will be useful when doing these problems, but you should first make a solid effort at each problem before looking at the solutions. There will also be practice problem sets and solutions given throughout the term so that students will have an idea of the types and styles of questions that they will be asked during examinations.

University Policies and Statements

This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate

Academic Integrity

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.

Information: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility

The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia).

Information: https://www.dal.ca/campus_life/academic-support/accessibility.html

Student Code of Conduct

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution.

Code: https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

Diversity and Inclusion – Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness

Statement: <http://www.dal.ca/cultureofrespect.html>

Recognition of Mi'kmaq Territory

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel and support.

Visit or e-mail the Indigenous Student Centre (1321 Edward St) (elders@dal.ca).

Information: https://www.dal.ca/campus_life/communities/indigenous.html

Important Dates in the Academic Year (including add/drop dates)

https://www.dal.ca/academics/important_dates.html

University Grading Practices

https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html

Missed or Late Academic Requirements due to Student Absence (policy)

https://www.dal.ca/dept/university_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html

Student Resources and Support

Advising

General Advising https://www.dal.ca/campus_life/academic-support/advising.html

Science Program Advisors: <https://www.dal.ca/faculty/science/current-students/academic-advising.html>

Indigenous Student Centre: https://www.dal.ca/campus_life/communities/indigenous.html

Black Students Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html

International Centre: https://www.dal.ca/campus_life/international-centre/current-students.html

Academic supports

Library: <https://libraries.dal.ca/>

Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html

Studying for Success: https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

Copyright Office: <https://libraries.dal.ca/services/copyright-office.html>

Fair Dealing Guidelines <https://libraries.dal.ca/services/copyright-office/fair-dealing.html>

Other supports and services

Student Health & Wellness Centre: https://www.dal.ca/campus_life/health-and-wellness/services-support/student-health-and-wellness.html

Student Advocacy: <https://dsu.ca/dsas>

Ombudsperson: https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html

Safety

Biosafety: <https://www.dal.ca/dept/safety/programs-services/biosafety.html>

Chemical Safety: <https://www.dal.ca/dept/safety/programs-services/chemical-safety.html>

Radiation Safety: <https://www.dal.ca/dept/safety/programs-services/radiation-safety.html>

Scent-Free Program: <https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html>