UNIVERSITY OF CALGARY
FACULTY OF SCIENCE

Department of Chemistry
Science B 605
403 220-5385
chem.info@ucalgary.ca

COURSE OUTLINE

1. **Course:** CHEM 351, Organic Chemistry I - Fall 2021

Lecture 01: MWF 08:00 - 08:50 in ENG 60

Instructor	Email	Phone	Office	Hours
Dr Jeffrey Van Humbeck	jeffrey.vanhumbec1@ucalgary.ca	220-3039	SB 229A	TBA

Lecture 02: MWF 09:00 - 09:50 in ENC 70

Instructor	Email	Phone	Office	Hours
Dr. Ian Hunt	irhunt@ucalgary.ca	220-6430	SA 144G	TBA

Lecture 03: MWF 10:00 - 10:50 in SB 103

Instructor	Email	Phone	Office	Hours
Dr Chang-Chun Ling	ccling@ucalgary.ca	403 220-2768	SB 235	TBA

Coordinator(s)

Name	Email	Phone	Office	Hours
Dr. Ian Hunt	irhunt@ucalgary.ca	220-6430	SA 144G	TBA

This course outline only pertains to the plan for **in-person delivery** of lecture and laboratory content. If the Faculty, University, and/or Province mandates a return to online-only delivery, a new course outline will be developed.

Dr. Van Humbeck is the **course coordinator**; Dr. Hunt is the **laboratory coordinator**.

Additional notes on accommodations can be found in section 4.

In Person Delivery Details:

Lectures will be presented in-person at the scheduled times.

A voice-captured animation of the lectures will be generated during L01 and will be accessible to students in all lecture sections. In the case of any technical issues during recording, analogous recordings from the corresponding 2019 lecture(s) will be provided.

L01 has been chosen for recording as only Prof. Van Humbeck has a complete set of recordings from any previous year, and so the online repository will be consistent if any prior material needs to be included.

Laboratories will start in-person on Monday, September 13th. Laboratory activities are in-person at your registered weekly laboratory time in EEEL. The experimental schedule and laboratory manual can be found on the course website. Each of the laboratory activities will each have a "primary graded activity"; this might be a report, or it might be based on your answers to a set of questions. The primary graded activities are equally weighted. Laboratory reports will be submitted via a D2L Dropbox and will have due dates that will be specified for each activity. There are two typical models for due dates (1) end of the laboratory period or (2) one week after the laboratory period. We anticipate there being 7 or 8 weeks of laboratory experiments.

Re-Entry Protocol for Labs and Classrooms:

To limit the spread of COVID-19 on campus, the University of Calgary has implemented safety measures to ensure the campus is a safe and welcoming space for students, faculty and staff. The most current safety information for campus can be found here. **Online Delivery Details:**

Some aspects of this course are being offered in real-time via scheduled meeting times. For those aspects you are required to be online at the same time.

To help ensure Zoom sessions are private, do not share the Zoom link or password with others, or on any social media platforms. Zoom links and passwords are only intended for students registered in the course. Zoom recordings and materials presented in Zoom, including any teaching materials, must not be shared, distributed or published without the instructor's permission.

Tutorials (CAL, Computer Assisted Learning) will be offered asynchronously online via Moodle, starting Wednesday, September 8th 2021. There are no scheduled Zoom based activities for CAL tutorials.

- During **non-assignment (practice) weeks**, the learning and practice materials can be accessed in a completely asynchronous manner.
- During the **five graded-assignment weeks**, your assignment must be completed anytime between 6AM and 6PM on your scheduled/registered tutorial day.

Full coverage details and schedule for the CAL assignments can be found on the course website.

Course Site:

In all communications, 'D2L' refers to the D2L page, whereas the 'Course Website' refers to the chem.ucalgary page given below:

D2L: CHEM 351 - All - (Fall 2021) - Organic Chemistry I

COURSE WEBSITE: https://www.chem.ucalgary.ca/courses/350/index351-f21.html

Note: Students must use their U of C account for all course correspondence.

2. **Requisites:**

See section 3.5.C in the Faculty of Science section of the online Calendar.

Prerequisite(s):
Chemistry 201 or 211; and 203 or 213.

Antirequisite(s):
Credit for Chemistry 351 and 357 will not be allowed.

3. **Grading:**

The University policy on grading and related matters is described in F.1 and F.2 of the online University Calendar.

In determining the overall grade in the course the following weights will be used:

Component(s)	Weighting %	Date
Midterm exam	25	Thursday, Nov. 4 2021 **7-9 PM** (in-person)
Final exam	35	Final exam period (Registrar Scheduled, in-person)
Laboratory	20	Weekly (in-person; see Section 4 note (c) regarding grading)
CAL Assignments	20	Assignment dates posted on the course website (online, asynchronous but due on your assigned day; see Section 4 note (c) regarding grading).

Each piece of work (reports, assignments, quizzes, midterm exam(s) or final examination) submitted by the student will be assigned a grade. The student's grade for each component listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.

The conversion between a percentage grade and letter grade is as follows.

	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Minimum % Required	95 %	85 %	80 %	75%	70%	65 %	60 %	55%	50%	45 %	40 %

This course will have a final exam that will be scheduled by the Registrar. The Final Examination Schedule will be published by the Registrar's Office approximately one month after the start of the term. The final exam for this course will be designed to be completed within 2 hours.

Notes

a. A minimum 50% on the laboratory **is required** in order to satisfy the prerequisite requirement (i.e. C–) for further Science courses.

b. A minimum 50% **weighted average** on examinations (MT & FIN) ***or*** 50% on the Final is required in order to satisfy the prerequisite requirement (i.e. C–) for further Science courses.

c. Notes (a) and (b) mean that if a student scores below 50% **in either** the laboratory **or** the examination component, the maximum course letter grade they can obtain in CHEM351 is a D+.

d. Students repeating the course can be exempted from the Laboratory component of the Course if a laboratory grade of 75% or higher were obtained, ***and the laboratory was completed fully or mostly in-person in the last 3 years***. However, students are still responsible for the laboratory content as it may be covered in other course work (e.g. examinations). The laboratory grade achieved on the previous attempt will be carried forward. Such students must contact the Undergraduate Science Centre and complete the opt out process **by Monday, September 13th, or immediately after registering in the course (whichever is later).**

The University of Calgary offers a flexible grade option, Credit Granted (CG) to support student's breadth of learning and student wellness. Faculty units may have additional requirements or restrictions for the use of the CG grade at the faculty, degree or program level. To see the full list of Faculty of Science courses where CG is not eligible, please visit the following website: https://science.ucalgary.ca/current-students/undergraduate/program-advising/flexible-grading-option-cg-grade

4. **Missed Components Of Term Work:**

The university has suspended the requirement for students to provide evidence for absences. Please do not attend medical clinics for medical notes or Commissioners for Oaths for statutory declarations.

In the event that a student legitimately fails to submit any online assessment on time (e.g. due to illness etc...), please contact the course coordinator, or the course instructor if this course does not have a coordinator to arrange for a re-adjustment of a submission date. Absences not reported within 48 hours will not be accommodated. If an excused absence is approved, one possible arrangement is that the percentage weight of the legitimately missed assignment could also be pro-rated among the components of the course. This option is at the discretion of the coordinator and may not be a viable option based on the design of this course.

Notes

a. Deferred examinations will **only** be provided for the Final Examination and students must apply through their student centre.

b. Absences from any graded component (midterm, laboratory, CAL assignments) must be reported to the course coordinator (Dr. Jeff Van Humbeck) within 48 hours (email is fine). The time limit will be ignored in the case of emergency circumstances. Given the current situation, no official documentation beyond an email is required - but, if an absence is not reported it will result in a grade of zero for the missed component.

c. In addition to posting lecture content online, the following accommodations will be made to minimize the impact of health and safety related disruptions for students.

- **Midterm Examination**. Students who have excused absences from the midterm exam will have their midterm grade assigned as being equal to the grade obtained on the final exam.

- **Tutorial**. Students who complete all 5 CAL assignments will be able to drop their lowest tutorial grade. One **excused** tutorial absence can be dropped from the student's grade. Any further excused tutorial absences will be given the same grade as obtained on the final exam.

- **Laboratory**. Similarly, students who complete all laboratory assignments will be able to drop their lowest laboratory grade. One **excused** laboratory absence can be dropped from the student's grade. Further excused laboratory absences will be given the same grade as obtained on the final exam, provided that the student attends and submits **no fewer than 5 labs.**

    - Given the essential nature of the hands-on skills taught during CHEM351 lab, there is a minimum of 5 of laboratory experiments that must be completed to receive credit for the course.

    - Students whose experience extenuating circumstances preventing them from attending at least 5 laboratories may apply to complete this course component after the end of term, using the Deferral of Term Work process (see also, Calendar G.7). Any deferred labs are tentatively scheduled for Block Week Winter 2022.

5. **Scheduled Out-of-Class Activities:**

The following out of class activities are scheduled for this course.

Activity	Location	Date and Time	Duration
Midterm	On-Campus, room to be announced	Thursday, November 4, 2021 at 7:00 pm	2 Hours

REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY. If you have a conflict with the out-of-class-time-activity, please contact your course coordinator/instructor no later than **14 days prior** to the date of the out-of-class activity so that alternative arrangements may be made.

6. **Course Materials:**

Textbook: No textbook is required. We provide an Organic Chemistry e-text via the course website.

If you wish to purchase a textbook because it suits your individual learning style, "Organic Chemistry - Mechanistic Patterns" by Ogilvie *et al.*, (published by Nelson) or "Organic Chemistry" by Jones (published by Norton) are good choices for our course. Otherwise, consult your instructor.

Molecular models kits are very strongly recommended.

Chemistry 351 Laboratory Manual (free, online via the course website).

A self-duplicating **Laboratory Notebook** (required, available from the Bookstore)

Laboratory safety coat (required, available from the Bookstore)

Laboratory safety glasses (required, available from the Bookstore)

Top Hat account (optional; available from Top Hat, see course website for more details, free to U of C students)

In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:

- A computer with a supported operating system, as well as the latest security, and malware updates;
- A current and updated web browser;
- Webcam/Camera (built-in or external);
- Microphone and speaker (built-in or external), or headset with microphone;
- Current antivirus and/or firewall software enabled;
- Stable internet connection.

For more information please refer to the UofC ELearning online website.

7. **Examination Policy:**

All examinations are common to all sections, i.e. students in L01, L02 and L03 write the same examinations. All the instructors are involved in determining content coverage, creating, selecting and reviewing examination questions, creating and reviewing grading rubrics and grading of student answers as well as reviewing the grades once collated.

"Exam conditions" : All in-person examinations, assignments, quizzes etc. are closed book. Model kits and non-programmable calculators are allowed, a periodic table and spectroscopy data tables will be provided if required. No other aids including any form of "cheat" or "data" materials are allowed. Wireless devices and other electronic devices are not allowed.

Any student with academic accommodations must be registered with Student Accessibility Services (see Section 12(f) below), and have reviewed their accommodations (as described on the SAS documents) with the course coordinator (Dr. Van Humbeck) ideally within the first 15 days of the semester or at least 7 days before any scheduled activity for which accommodations are required. All SAS accommodations that impact the laboratory component of the course must also be recorded with the lab coordinator (Dr. Hunt).

Students should also read the Calendar, Section G, on Examinations.

8. **Approved Mandatory And Optional Course Supplemental Fees:**

   Laboratory Breakage Fee and Late Check-out Fee : The Department of Chemistry has a laboratory glassware breakage fee and a late check-out fee. At the start of the course, each student is assigned a drawer and checks in to establish that they have a complete set of usable equipment. By signing for check-in, a student agrees that they are now responsible for the equipment until check-out. At the time the student checks out, any equipment that is missing, unusable or has been replaced during the semester will be charged to the student. All students, even those who withdraw early from the course, must check out of the laboratory before 4:30pm the last day of scheduled labs (Friday, December 3rd 2021). Any student who fails to check out before 4:30pm the last day of scheduled labs for the term will be assessed a charge of $30.00 to their UCalgary account.

9. **Writing Across The Curriculum Statement:**

   For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) can be a factor in the evaluation of the work. See also Section E.2 of the University Calendar.

10. **Human Studies Statement:**

    Students will not participate as subjects or researchers in human studies.

    See also Section E.5 of the University Calendar.

11. **Reappraisal Of Grades:**

    A student wishing a reappraisal, should first attempt to review the graded work with the Course coordinator/instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. Non-academic grounds are not relevant for grade reappraisals. Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See Section I.3 of the University Calendar.

    a. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within **ten business days** of either being notified about the mark, or of the item's return to the class. If the student is not satisfied with the outcome, the student shall submit the Reappraisal of Graded Term work form to the department in which the course is offered within 2 business days of receiving the decision from the instructor. The Department will arrange for a reappraisal of the work within the next ten business days. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected. See sections I.1 and I.2 of the University Calendar

    b. **Final Exam:**The student shall submit the request to Enrolment Services. See Section I.3 of the University Calendar.

12. **Other Important Information For Students:**

    a. **Mental Health** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, Mental Health Services Website) and the Campus Mental Health Strategy website (Mental Health).

    b. **SU Wellness Services:** For more information, see www.ucalgary.ca/wellnesscentre or call 403-210-9355.

    c. **Sexual Violence:** The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email (svsa@ucalgary.ca) or phone at 403-220-2208. The complete University of Calgary policy on sexual violence can be viewed at (https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Sexual-and-Gender-Based-Violence-Policy.pdf)

    d. **Misconduct:** Academic integrity is the foundation of the development and acquisition of knowledge and is based on values of honesty, trust, responsibility, and respect. We expect members of our community to act with integrity. Research integrity, ethics, and principles of conduct are key to academic integrity. Members of our campus community are required to abide by our institutional Code of Conduct and promote academic integrity in upholding the University of Calgary's reputation of excellence. Some examples of academic misconduct include but are not limited to: posting course material to online platforms or file sharing without the course instructor's consent; submitting or presenting work as if it were the student's own work; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; borrowing experimental values from others without the instructor's approval; falsification/fabrication of experimental values in a report. Please read the following to inform yourself more

on academic integrity:

Student Handbook on Academic Integrity
Student Academic Misconduct Policy and Procedure
Research Integrity Policy

Additional information is available on theStudent Success Centre Academic Integrity page

e. **Academic Accommodation Policy:**

It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The student accommodation policy can be found at: https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Student-Accommodation-Policy.pdf

Students needing an accommodation because of a disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities: https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Accommodation-for-Students-with-Disabilities-Procedure.pdf.

Students needing an accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, by filling out the Request for Academic Accommodation Form and sending it to Dr. Yuen-Ying Carpenter by email yyscarpe@ucalgary.ca preferably 10 business days before the due date of an assessment or scheduled absence.

f. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). Students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information, see Legal Services website.

g. **Student Union Information:** VP Academic, Phone: 403-220-3911 Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: 403-220-3913 Email: sciencerep@su.ucalgary.ca. Student Ombudsman, Email: ombuds@ucalgary.ca.

h. **Surveys:** At the University of Calgary, feedback through the Universal Student Ratings of Instruction (USRI) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.

i. **Copyright of Course Materials:** All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic or non-academic misconduct, in addition to any other remedies available at law.

Course Outcomes:

- Recognize and employ the conventions of naming, structure drawing, and curved arrow pushing to communicate about organic compounds
- Draw reaction mechanisms with appropriate curved arrows to account for how bonds are made and broken in organic reactions
- Analyze the structural features of starting materials, reaction intermediates, and products to predict or rationalize their physical properties or reaction behaviour
- Identify and interpret spectral data to deduce the structure of simple organic molecules
- Understand laboratory experimental data and explain observations.
- Propose a short (ca. 1-4 step), feasible synthesis for the formation of a specific organic product using a limited number of possible reaction types: acid/base, radical substitution, nucleophilic substitution, or elimination reactions.

Electronically Approved - Sep 07 2021 14:45

Department Approval

Electronically Approved - Sep 07 2021 16:05

Associate Dean's Approval