



## COURSE OUTLINE

### 1. **Course:** CHEM 353, Organic Chemistry II - Winter 2024

#### **Coordinator(s)**

Name	Email	Phone	Office	Hours
Dr Ashley Causton	acauston@ucalgary.ca	403 210-3968	SA 144A	TBA
Dr. Ian Hunt	irhunt@ucalgary.ca	220-6430	SA 144G	Open door, drop in OR make an appointment

#### **Section(s)**

Lecture 01 : MWF 08:00 - 08:50 in ENE 241

Instructor	Email	Phone	Office	Hours
Dr. Ian Hunt	irhunt@ucalgary.ca	220-6430	SA 144G	Open door, drop in OR make an appointment

Lecture 02 : MWF 09:00 - 09:50 in ENG 60

Instructor	Email	Phone	Office	Hours
Dr. Todd Sutherland	todd.sutherland@ucalgary.ca		SB 220	TBA

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

Dr. Hunt is the **course coordinator (all examination & tutorial concerns)**

Dr Causton is the **laboratory coordinator (all laboratory concerns)**

Additional notes on accommodations can be found in section 4.

To account for any necessary transition to remote learning for the current semester, courses with in-person lectures, labs, or tutorials may be shifted to remote delivery for a certain period of time. In addition, adjustments may be made to the modality and format of assessments and deadlines, as well as to other course components and/or requirements, so that all coursework tasks are in line with the necessary and evolving health precautions for all involved (students and staff).

#### **In Person Delivery Details:**

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

*We recognize the need for some flexibility in the post-COVID era. Therefore, in addition to ongoing in-person lectures, we will also post pre-recorded, Powerpoint-based video content modules for asynchronous use. Although these were initially created for use in this course in W21, these modules are aligned to our current goals and will be made available on a week to week basis to reflect the course progress in the live lectures. However, we strongly recommend that these video modules be used as "back-up" at times rather than being your default. All the evidence points to attending in-person lectures is likely to result in improved performance!*

**Laboratories** will start in-person on Monday, January 15th, 2024. Laboratory activities are in-person at your registered weekly laboratory time in EEEL. The experimental schedule, laboratory manual and experiment documents can all 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 (Moodle). The primary graded activities are equally weighted. Laboratory reports will be submitted to a specific D2L Dropbox and will have due dates that will be specified for each activity.

**Tutorials** (CAL, Computer Assisted Learning) will occur in person in SA204 starting Monday, January 8th, 2024 during your scheduled tutorial time. CAL tutorials will be broken into 5 modules and each module is based on a set of course topics as outlined in the tutorials section of the course website. Modules consist of practice and assignment weeks. Module coverage is cumulative. Assignments (50 min) take place in SA204 and are written under exam conditions.

#### **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 353 - ALL (Winter 2024) - Organic Chemistry II

**COURSE WEBSITE:** <https://www.chem.ucalgary.ca/courses/350/index353-W24.html>

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

## Equity Diversity & Inclusion:

The University of Calgary is committed to creating an equitable, diverse and inclusive campus, and condemns harm and discrimination of any form. We value all persons regardless of their race, gender, ethnicity, age, LGBTQIA2S+ identity and expression, disability, religion, spirituality, and socioeconomic status. The Faculty of Science strives to extend these values in every aspect of our courses, research, and teachings to better promote academic excellence and foster belonging for all.

The Chemistry EDI Committee acknowledges there are persistent barriers that prevent such accessibility and hinder our progress towards EDI. Our representatives (faculty, postdocs, graduate and undergraduate students) are committed to addressing any concerns and work towards proactive solutions that enact necessary change within the department. To submit anonymous questions, comments or concerns regarding EDI related issues, please reach out to our Associate Head EDI, Belinda Heyne ([bjmheyne@ucalgary.ca](mailto:bjmheyne@ucalgary.ca))

## 2. Requisites:

See section [3.5.C](#) in the Faculty of Science section of the online Calendar.

### Prerequisite(s):

Chemistry 351.

### Antirequisite(s):

Credit for Chemistry 353 and either 355 or 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:

Course Component	Weight	Due Date (duration for exams)	Modality for exams	Location for exams
Laboratory <sup>1</sup>	20%	Ongoing		
Tutorial CAL Assignments <sup>2</sup>	20%	Ongoing		
Midterm	25%	Mar 07 2024 at 07:00 pm (2 Hours)	in-person	TBA
Registrar Scheduled Final Exam	35%	Will be available when the final exam schedule is released by the Registrar	in person	Will be available when the final exam schedule is released by the Registrar

<sup>1</sup> Experiments may have each of the following: (a) Pre-laboratory quizzes (online in Moodle) due 30 min before the start of your scheduled laboratory. (b) Pre-laboratory summary to be written and the pdf submitted to the specific D2L Dropbox 30 min before the start of your scheduled laboratory. Required in order for you to attend the laboratory session. (c) Laboratory notebook : a paper duplicate copy of the notes taken during experiments need to be handed to the TA before you leave the laboratory. (d) Primary graded activity (e.g. experimental report, or answers to a set of questions (Moodle) etc.). The report in pdf format is to be submitted to the appropriate D2L Dropbox by the due dates that will be specified for each activity (typically one week after the activity, i.e. by the start of your next scheduled laboratory period). Students are responsible for ensuring that all D2L Dropbox submissions are in pdf format, are the complete "final" document and are submitted to the correct D2L Dropbox.

<sup>2</sup> Tutorials (CAL) will run in-person, during your scheduled tutorial time, in SA 204 starting Monday, Jan 8th, 2024. For more details see above.

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 Registrar Scheduled Final exam that will be delivered in-person and on campus. [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 CHEM 353 is a D+.

d. Students repeating the course can be exempted from the Laboratory component of the Course if a laboratory grade of 75.00% or higher was 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 ([science.advising@ucalgary.ca](mailto:science.advising@ucalgary.ca)) and complete the opt out process **by Thursday, Jan 18th 2024, or immediately after registering in the course (whichever is later)**.

e. See the Chem353W24 laboratory manual for details on the grade contribution of each component (e.g. pre-lab quiz, report etc.) to the laboratory total for the course.

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:

In the event that a student legitimately fails to submit any online or in-person assessment on time (e.g. due to illness, domestic affliction, 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, or possible exemption and reweighing of components. Absences not reported within 48 hours will not be accommodated. Students may be asked to provide supporting documentation ([Section M.1](#)) for an excused absence, See [FAQ](#).

If an excused absence is approved, options for how the missed assessment is dealt with is at the discretion of the coordinator or course instructor. Some options such as an exemption and pro-rating among the components of the course 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 center.

b. As per UofC regulations, absences from the **midterm** must be reported to the course coordinator (Dr. Hunt) within 48 hours via email ([irhunt@ucalgary.ca](mailto:irhunt@ucalgary.ca)). When reporting absences, provide enough information ([supporting documentation](#)) to allow the coordinator to make an informed decision. If an absence is not reported it will result in a grade of zero for the missed component.

c. The course website outlines the procedures and more details on reporting absences/scheduling makeups for laboratories and tutorials. When reporting absences, provide enough information ([supporting documentation](#)) to allow the coordinator to make an informed decision.

**Laboratory** : for more details OR to request laboratory makeups see [Missed Laboratory work \(ucalgary.ca\)](#)

Any questions regarding **laboratory** makeups beyond the information on the website should be directed to the laboratory coordinator (Dr. Ashley Causton, [acauston@ucalgary.ca](mailto:acauston@ucalgary.ca)).

**Tutorials** : for more details OR to request tutorial makeups see Absences at [Chem353W24 assignments](#).

Any questions regarding **tutorial** makeups beyond the information on the website should be directed to the tutorial coordinator (Dr. Ian Hunt, [irhunt@ucalgary.ca](mailto:irhunt@ucalgary.ca)).

Again all absences must be reported within 48 hours (university regulations), however, the earlier the better to allow for time to possibly reschedule and make up the laboratory/tutorial depending on the circumstances. If it is not possible to schedule a make-up then an excused absence may be granted. *Any excused course component will receive the same grade percentage as a student's grade on the final examination.*

d. 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.

- o **Midterm Examination**. Students with excused absences for the midterm will have their midterm grade assigned as being equal to the grade obtained on the final exam.
- o **Tutorial**. All **excused** tutorial absences will be given the same grade as obtained on the final exam.
- o **Laboratory**. Students who complete all laboratory experiments will be able to drop their lowest laboratory grade (best XX out of YY). *An excused laboratory absence will be given the same grade as obtained on the final exam, provided that the student attends and submits at least CHECK THIS 6 out of the 8 experiments. When given an excused laboratory absence students are excused from all components of that specific laboratory experiment.*
  - *Given the essential nature of the hands-on skills taught during the CHEM 353 laboratory, one must complete more than*

half of the laboratory experiments that must be completed to receive credit for the course.

- Students who may not be able to meet this requirement may apply to complete this course component after the end of term, using the Deferral of Term Work process (see also, Calendar G.7).

#### 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, March 7, 2024 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. [Organic Chemistry etext Contents \(ucalgary.ca\)](#)

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 353 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 and L02 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(e) below). If students have any questions or concerns about how their accommodations (as described on the SAS documents) will impact examinations or tutorial work, then they should discuss them with the course coordinator (Dr. Hunt) ideally within the first 15 days of the semester or at least 7 days before any scheduled activity for which accommodations are required. If there are SAS accommodations that impact the laboratory component of the course (especially with regards to the laboratory environment, then the student should arrange to discuss them with the laboratory coordinator (Dr Caustons) at least 5 business days before the laboratory session.

Students should also read the Calendar, [Section G](#), on Examinations.

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

There are no mandatory or optional course supplemental fees for this course.

## 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:

If you agree, your course work may be used for research purposes. Your responses will remain anonymous and confidential. Grouped data (no individual responses) may be used in academic presentations and publications. Participation in such research is voluntary and will not influence grades in this course. Students' signed consent forms will be withheld from instructors until after final grades are submitted. More information will be provided at the time student participation is requested.

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.

### a. Term work

As per the UofC regulations, requests for regrades must be made within a 10 business day window after either being notified about the mark or of the item's return to the class. No appeals will be considered after the 10 business days have elapsed. A regrade may result in an increase in the grade, the grade may remain the same or it may go down. The result of the regrade will be binding.

i. **MT & CAL Requests for regrading MUST** be made via email (*i.e.* not verbally) to the Course coordinator **clearly stating where and why** you think there is an error in the grading of your exam (complete with references to lecture notes, etext etc.). Stating "I don't know why I didn't get more marks" is not a valid "why". Saying you don't understand the grade also isn't a "why". The request will need to address the **chemistry** associated with the question(s) and that will likely mean you take the time to work out the answer to the question using the resources you have available. This of course means that you will need to WAIT until you have reviewed the scoring of your examination.

ii. **Laboratory.** See section 6 of the Chem 353 W24 student laboratory manual. The request should be made in the first instance to your laboratory TA and only after that (if required) to the laboratory coordinator. If you need to appeal to the laboratory coordinator, then you need to provide a detailed rationale that outlines where and for what reason an error is suspected (*i.e.* clearly stating the details of your concern) and your University of Calgary email contact information. The laboratory coordinator will then review the request and provide a response to the University of Calgary email address.

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 coordinator. The Department will arrange for a reappraisal of the work within the next 10 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 their [website](#) or call [403-210-9355](tel: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](mailto:svsa@ucalgary.ca)) or phone at [403-220-2208](tel:403-220-2208). The complete University of Calgary policy on sexual violence can be viewed [here](#).
- d. **Student Ombuds Office:** A safe place for all students of the University of Calgary to discuss student related issues, interpersonal conflict, academic and non-academic concerns, and many other problems.
- e. **Student Union Information:** [SU contact](#), Email your SU Science Reps: [science1@su.ucalgary.ca](mailto:science1@su.ucalgary.ca), [science2@su.ucalgary.ca](mailto:science2@su.ucalgary.ca), [science3@su.ucalgary.ca](mailto:science3@su.ucalgary.ca).

f. **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 Associate Head, Undergraduate by email [ahugchem@ucalgary.ca](mailto:ahugchem@ucalgary.ca) preferably 10 business days before the due date of an assessment or scheduled absence.

- g. **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](#)  
[Faculty of Science Academic Misconduct Process](#)  
[Research Integrity Policy](#)

Additional information is available on the [Student Success Centre Academic Integrity page](#)

- h. **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.
- i. **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.
- j. **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.

**Course Outcomes:**

- o Analyze and use the structural and electronic characteristics of the organic species to predict or rationalise properties and reactivity.
- o Draw reasonable reaction mechanisms with appropriate curved arrows to account for the step by step bonding changes in

organic reactions.

- Design and evaluate feasible syntheses of small organic molecules from simple starting materials.
- Classify molecules as being aromatic, non-aromatic or anti-aromatic to recognise and describe the implications this has on their stability, properties and reactivity.
- Analyse chemical information to determine a reasonable solution to a problem involving the reactions and / or spectroscopic data of organic species.
- Use experimental procedures to safely set-up, perform and clean up reactions that apply standard introductory organic techniques and report the outcomes.

Electronically Approved - Jan 05 2024 12:21

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**Department Approval**

Electronically Approved - Jan 05 2024 16:32

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**Associate Dean's Approval**