



COURSE OUTLINE

1. **Course:** CHEM 353, Organic Chemistry II - Spring 2022

Lecture 01 : MWF 10:00 - 11:50 in ST 135

Instructor	Email	Phone	Office	Hours
Dr Shruti Mendiratta	TBA	TBA	TBA	By Appointment

Coordinator(s)

Name	Email	Phone	Office	Hours
Carita-Louise Sequeira	TBA	TBA	TBA	TBA

The **Course Instructor** is **Dr. Shruti Mendiratta** and the **Lab Coordinator** is **Ms. Carita Sequeira**

All **communications** regarding lecture **course content/Midterm/Final exam/CAL assignments** should be directed towards your **course instructor (shruti.mendiratta@ucalgary.ca)** and all **communications** related to **prelab-quizzes/ missed labs/lab assignments/lab scores** should be directed towards your **lab coordinator (caritalouise.sequeir@ucalgary.ca)**

- 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 instructor (Dr. Mendiratta) ideally within the first 15 days of the semester or at least 5 business days before any scheduled activity for which accommodations are required. All SAS accommodations that impact the laboratory component of the course must be discussed with the laboratory coordinator.

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 (until May 31)

Lectures will be presented in a **blended format** at the registrar-scheduled times.

- Until May 31st, lectures will be primarily delivered **in-person**. *Limited live classes (May 18 & 20) may be cancelled and instead be offered as asynchronous pre-recorded video lectures and/or activities.
- From June 1st onward, lectures will be delivered **synchronously ('live') online**, but the lecture classroom will remain available for students who wish to attend and participate in the lectures in-person among peers - lectures will be projected on the large screen for all participants.

While students are best served by attending all lectures during the scheduled timeslot, we recognize the need for occasional flexibility in light of ongoing impacts of COVID-19 in each of our lives. Therefore, we will do our best to **record all live lectures (recordings will be available on D2L)** for later review.

For any lecture/content related questions, we encourage students to seek help from the course instructor after their regular in-person lecture hours.

Laboratories

Laboratories will be offered **in-person**, beginning **in first week of classes, May 4th 2022** at your scheduled times. We anticipate there being 5 weeks of laboratory sessions. The experimental schedule and Spring 2022 laboratory manual can be found on D2L. See additional details in Section 3.

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.

This course has a registrar scheduled, synchronous final exam. The writing time is 2 hours + 50% buffer time.

Lectures (Jun 1-Jun 15)

From June 1st onward, lectures will be delivered **synchronously ('live') online**, but the lecture classroom will remain available for students who wish to attend and participate in the lectures in-person among peers. Recordings will continue to be made available for review and unexpected absences.

**Students continue to have the option of sitting with their peers in the same lecture room (ST135), where the lectures will be projected on the large screen for all participants.*

Tutorials

Tutorials (CAL = Computer Assisted Learning) will be offered asynchronously (on-demand) online via Moodle, starting the week of **9th May, 2022**. There are no scheduled synchronous ('live') activities for CAL tutorials.

- Ungraded practice materials will be posted to D2L roughly weekly so they can be accessed in a completely asynchronous manner during that week. We recommend attempting these practice activities and asking questions of the course instructor (*by email, appointment, or office hours*) **before** attempting that week's graded tutorial activity.
- There will be **3 graded tutorial activities** administered on Moodle - see Section 3 for additional details.

Full coverage and schedule details for the CAL assignments can be found on D2L.

Course Site:

D2L: CHEM 353 L01-(Spring 2022)-Organic Chemistry II

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)

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 ¹	20%	Ongoing		
CAL Tutorial assignments ²	15%	Ongoing		
Midterm ³	30%	May 27 2022 at 10:00 am (110 Minutes)	in-person	In-Class
Registrar Scheduled Final Exam ⁴	35%	Will be available when the final exam schedule is released by the Registrar	online	Will be available when the final exam schedule is released by the Registrar

¹ **We expect there to be ~7 graded laboratory experiments over the semester**; one missed experiment (or your lowest graded experiment) may be dropped from your grade calculation. See also, Section 4. Each of the experiments may include grades for both a pre-lab activity and a "primary graded activity."

- Pre-lab activities must be submitted before start of your scheduled laboratory session each week. These may include either a pre-lab quiz or a pre-lab summary submitted on D2L. You must submit your pre-lab in order to attend your scheduled lab.
- The primary graded activity might be a formal experimental report, or answers to brief lab assignment questions. Due dates will be posted on D2L and activities will be submitted to a D2L Dropbox.

See the schedule and materials posted to D2L for further details.

² There are 3 CAL assignments scheduled for the Spring 2022 semester, but only the scores of your best two assignments will be counted towards your tutorial grade (see also Section 4).

- CAL assignments are to be completed **individually**.
- CAL assignments are timed (50 minutes total). This *includes* a 15-minute buffer for unexpected technical glitches. The timer begins when you first open the assignment.
- Each assignment will be released mid-week and can be completed at any time of your choosing before the posted Friday 6:00 pm deadline.
- We recommend students attempt their CAL assignments during regular working hours, so that they can contact their instructor if they have clarifications or need technical support.

CAL assignments will be due May 13, May 20, and Jun 10. See D2L for updated details throughout the semester.

³ See Section 7 for examination policies.

⁴ The final exam is expected to use only 2-hours of writing time, but students will have an additional 1-hour of buffer time to account for any possible technical issues, for a total of 3-hours. See Section 7 for additional exam rules.

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 %	90 %	85 %	80%	75%	70 %	65 %	60%	55%	50 %	45 %

This course will have a Registrar Scheduled Final exam that will be delivered on-line. [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.

Per section [G.5](#) of the online Academic Calendar, timed final exams administered using an on-line platform, such as D2L, will be available on the platform. Due to the scheduling of the final exams, the additional time will be added to **the end** of the registrar scheduled **synchronous** exam to support students. This way, your exam schedule accurately reflects the **start time** of the exam for any **synchronous** exams. E.g. If a **synchronous** exam is designed for 2 hours and the final exam is scheduled from 9-11am in your student centre, the additional time will be added to the **end** time of the **synchronous** exam. This means that if the exam has a 1 hour buffer time, a synchronous exam would start at 9 am and finish at 12pm.

Notes

a. Given the essential nature of the hands-on skills taught during Chem 353 laboratory, there is a requirement to complete a minimum of 2/3 of laboratory experiments and achieve a minimum 50% on the laboratory in order to

satisfy the prerequisite requirement (i.e. C-) for further Science courses. See Section 4 for more information on missed experiments.

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 CHEM353 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 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) and complete the opt out process no later than Monday May 9th, 2022.

The University of Calgary offers a [flexible grade option](https://science.ucalgary.ca/current-students/undergraduate/program-advising/flexible-grading-option-cg-grade), 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. Requests and decisions for deferred final exams are not managed at the course level.

b. Unexpected absences from any graded component should be reported within 48 hours (email is fine).

- Missed labs should be reported to the lab coordinator CAL assignment (Ms. Sequeira).
- Missed midterms or CAL assignments should be reported to the course coordinator (Dr. Mendiratta).

Given the current situation, no official documentation beyond an email stating the reason for the absence is required. If an absence is not reported it will result in a grade of zero for the missed component.

c. In addition to posting course content video modules in D2L, the following accommodations will be made to minimize the impact of health and safety related disruptions for students.

Midterm examination. Students who have an excused absence from the midterm exam will be assigned a midterm grade equal to the grade obtained on the final examination.

Tutorial (CAL) assignments. The highest 2 out of 3 CAL assignments will count towards your CAL grade. If you have an excused absence, this will be the one to be dropped, otherwise the lowest CAL assignment grade will automatically be dropped. Any further excused CAL assignment absences will be given the same grade as obtained on the final examination.

Laboratory. Similarly, students who complete all laboratory assignments will be able to drop their lowest laboratory experiment grade. If you have an **excused** absence, this experiment will be the one to be automatically dropped from your grade, otherwise the lowest experiment grade will be dropped. Additional absences will be handled at the coordinator's discretion.

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

There are no scheduled out of class activities for this course.

6. Course Materials:

No textbook is required. We provide an Organic Chemistry [e-text](#).

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.

Other course materials needed:

- **Molecular models kits** are very strongly recommended.
- **Chemistry 353 Laboratory Manual** (free, online via the course D2L 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:

In-person examinations (i.e. midterm exam) 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.

Online examinations (i.e. final exam) are to be individually-written but students are **allowed to refer course-resources**: their E-text, D2L materials, and Class Notes/Powerpoint Slides. Students are not allowed to seek any external help (friends, peers, tutors etc.). For any queries during exam, your course instructor will be available for online help on Zoom call.

- For any synchronous assessment, time will be adjusted for SAS students if needed. As well, accommodations for students facing a significant barrier to writing the assessment during the scheduled time will be done on a case-by-case basis, e.g. *different time zones, caregiving responsibilities, ability to secure an appropriate test-taking environment*. Students who need accommodation for the midterm or final exam must contact Dr. Mendiratta **at least 5 days in advance of the scheduled assessment**.

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 the last day of lectures (June 16, 2022). Any student who fails to check out before the last day of lectures for the term will be assessed a charge of \$30.00. If this fee is not paid by the posted deadline, university services (registration, transcripts, etc.) may be withheld.

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.

Additional details

i. **Midterm & CAL Tutorials:** The student should present their rationale as effectively and as fully as possible to the Course instructor within ten business days of either being notified about the mark, or of the item's return to the class.

ii. **Laboratory.** See section 6 of the Chem 353 Spring 2022 student laboratory manual. The request should be made first to your laboratory TA and only after that (if required) to the laboratory coordinator. If reaching out to the lab coordinator, 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 (all to be done within the 10 day business period). The laboratory coordinator will then review the request and provide a response to your University of Calgary email address. No such appeal will be considered after the 10 business days have elapsed.

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](#).
- 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 (syasa@ucalgary.ca) or phone at [403-220-2208](#). The complete University of Calgary policy on sexual violence can be viewed [here](#).
- 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](#)

Additional information is available on the [Student 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 (FOIPPA). 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:** [SU contact](#), Email SU Science Rep: sciencerep1@su.ucalgary.ca, [Student Ombudsman](#)
- 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.

Laboratory Safety Course

All undergraduate students taking chemistry laboratories are required to complete an introductory course (approx. 50 minutes) on laboratory safety. This course is presented in an online format. The Safety Course must be completed before the first laboratory experiment. Students who do not complete the safety lessons will subsequently be denied admission to the laboratories. While it will not count directly to the final grade, the material is considered to be part of the course and is therefore appropriate for inclusion into laboratories.

Course Outcomes:

- Analyze and use the structural and electronic characteristics of the organic species to predict or rationalise properties and reactivity.
- 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 - May 08 2022 22:29

Department Approval

Electronically Approved - May 09 2022 12:06

Associate Dean's Approval