



COURSE OUTLINE

1. **Course:** CHEM 321, Environmental Chemistry - Fall 2022

Lecture 01 : TR 15:30 - 16:45 in SB 103

Instructor	Email	Phone	Office	Hours
Dr. Susana Kimura-Hara	s.kimurahara@ucalgary.ca	n/a	IN CLASS/OFFICE SB 333	Tu/Th 16:45-17:30 or by appointment

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 and quizzes will be in-person, unless otherwise noted. Case studies can be attended through zoom breakout rooms or in-person and must be agreed as a team and specified through team contracts. Attendance is mandatory.

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.

To access the on-line portion of the class, students need to be registered through the zoom application prior to accessing the class.

Case studies can be attended through zoom breakout rooms or in-person and must be agreed as a team and specified through team contracts. To help you engage and work well with your group, turning on your webcam and microphone are strongly encouraged during breakout room sessions with your group. Breakout room sessions will not be recorded.

Course Site:

D2L: CHEM 321 L01-(Fall 2020)-Environmental Chemistry

<https://d2l.ucalgary.ca/d2l/home/472342>

Students are encouraged to monitor the "News" section of the course for important information; alternately, students can update their D2L notification settings to email or text them any time new items are posted to the News section.

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):

One of Chemistry 203, 209 or 213.

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
Participation (4 Peerwise Assignments) - Individual ¹	6%	Ongoing		
Case Studies (2) - Group ²	15%	Ongoing		
Case Study Attendance - Individual ³	2%	Ongoing		
Reading Assignment Questions (8) - Individual ⁴	17%	Ongoing		
Quiz 1	15%	Sep 27 2022 at 03:30 pm (45 Minutes)	in-person	In Class
Quiz 2	15%	Oct 18 2022 at 03:30 pm (45 Minutes)	in-person	In Class
Quiz 3	15%	Nov 15 2022 at 03:30 pm (45 Minutes)	in-person	In Class
Registrar Scheduled Final Exam	15%	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

¹ Asynchronous due dates: Sep 20, Oct 13, Nov 3, Dec 6 @ 11:30 pm Mountain Time

² Synchronous In-class: Oct 13 and Nov 24

³ Synchronous In-class: Oct 13 and Nov 24. Attendance is mandatory (in-person or virtual).

⁴ Asynchronous and are due every Tuesday prior to class @ 3:00 pm Mountain Time (except when a quiz is scheduled)

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	90 %	85 %	80 %	76%	72%	68 %	64 %	61%	56%	52 %	45 %

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 1 hours.

For any synchronous assessment, time will be adjusted for SAS students if needed and accommodations for students will be done on a case-by-case basis. If SAS students require more time to complete reading assignment questionnaire please let the instructor know.

Groups will be pre-assigned at the beginning of the course (via <https://www.itpmetrics.com/>) and will remain the same for the entire term.

Quizzes

Each quiz will be designed to take at most 45-minutes for to complete. See Section 7 for allowed resources on quizzes.

Since the quizzes are the primary opportunity for students to demonstrate their understanding of the course material, students must complete a **minimum of 2 out of the 4 quizzes** in the course to achieve a passing grade; i.e. students who submit only one quiz during the term cannot receive a grade higher than a D+ and would be recommended to withdraw.

Case Studies

Case studies pre-work (i.e, watch a video or read an article) will be done individually prior to each in-class case study (Oct 13 and Nov 24). Activities related to the case studies will occur in-class and attendance is mandatory (worth 2% of your individual grade). A case study analysis prepared by the whole group will be due two weeks after. The grade received in the analysis will be reflect the whole group work and will be graded as a group.

At the end of the term, you will evaluate the contributions of the other members of your team using an online survey via itpmetrics.com. Each team member will rate you using parameters relating to teamwork. We calculate the average of these ratings and determine your Peer Evaluation Score (PES) based on your teammates' evaluation. Your total Case Study Score will be multiplied by the PES to determine the final mark.

Reading Assignment Questions (30 min asynchronous)

Reading assignment questions will occur asynchronously and are due prior to the start of class. Reading assignment questions are designed to be completed no more than 30 minutes and assumes that students have completed the reading assignment prior to answering the questions. Each student is responsible to start their own reading assignment questions in D2L and complete it no later than 3:00 pm Mountain Time of each Tuesday (except when there is a scheduled Quiz). They will be available between 1-3 weeks prior to the due date. Each reading assignment will be graded individually. The lowest 2 grades of all your reading assignments will be dropped (including sick leaves); i.e. if a student misses a reading assignment, the missed assignment will be one of the two grades dropped as the lowest.

Peerwise assignments

Each student is required to complete 4 peerwise assignments that correspond to each of the 4 modules. For each module, each student should contribute one question and answer 4 questions.

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.

- **Missed quizzes.** In case of missed quiz that was not completed in the allowed time, the percentage weight of a legitimately missed quiz will be transferred to the remaining quizzes. Students must complete a minimum of 2 of 4 quizzes in order to pass the course (see also Section 3).
- **Missed reading assignments.** The lowest 2 grades of a student's 8 reading assignments will be dropped (including absences); i.e. if a student misses a reading assignment, the missed assignment will be one of the two grades dropped as the lowest. If a student is having significant difficulty submitting reading assignment questions on time due to extenuating circumstances (e.g. technical issues), they should contact the instructor as soon as possible for support, as no more than 2 of the 8 assignments will be dropped, and missed reading assignments will not be excused.

5. Scheduled Out-of-Class Activities:

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

6. Course Materials:

Required Textbook(s):

Colin Baird and Michael Cann, *Environmental Chemistry*: WH Freeman, 5th Ed. .

Recommended Textbook(s):

Stanley E. Manahan, *Fundamentals of Environmental and Toxicological Chemistry: Sustainable Science*: CRC Press .

Ronald Hites and Jonathan Raff, *Elements of Environmental Chemistry*: Wiley.

The required textbook will be needed for assigned readings to complete reading assignment questions due prior to class. Two copies of the physical textbook is in reserves at the Taylor Family Digital Library (Kiosk 3) and available free of charge. The ebook can be purchased or rented through vitalsource.com. Other required handouts, videos, and readings for this course are available through postings on D2L. You will be responsible to look at electronic handouts and to keep current with the reading material posted on D2L.

ITP Metrics provides some teamwork resources. This UCalgary-based system involves secure web-based tools to make teams (based on a survey answered by students) and for team peer evaluations. These tools are free to all students and are not dependent on prior access.

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:

Quizzes will be taken in-person in class time and will be answered individually. The quiz is closed book and notes.

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:

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.

- 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 1.3](#) 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) or phone at [403-220-2208](tel: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](#)
[Faculty of Science Academic Misconduct Process](#)
[Research Integrity Policy](#)

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 Associate Head, Undergraduate by email ahugchem@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:** [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.

Course Outcomes:

- Describe principles of fundamental environmental processes in air, water, and soil.
- Recognize different types of toxic substances & responses and analyze toxicological information.
- Apply basic chemical concepts to analyze chemical processes involved in different environmental problems (air, water & soil).
- Describe water purification and wastewater treatment processes and the practical chemistry involved.
- Identify the many impacts of anthropogenic pollutants in the environment.
- Explain energy generation and aspects of sustainability, including anthropogenic climate change
- Recognize local and global environmental issues such as emerging contaminants of concern in water, acid rain, climate change, ozone depletion, soil erosion and acidification, and eutrophication
- Recognize the fundamental interconnectedness of chemical processes that unfold in different environmental compartments by giving examples

Electronically Approved - Aug 31 2022 00:26

Department Approval