UNIVERSITY OF CALGARY
FACULTY OF SCIENCE

Department of Chemistry
Science A 229
403 220-5385
chem.info@ucalgary.ca

COURSE OUTLINE

1. **Course:** CHEM 321, Environmental Chemistry - Spring 2021

   Lecture 01: TR 13:00 - 15:45 - Online

Instructor	Email	Phone	Office	Hours
Maryam Izadifard	maryam.izadifard@ucalgary.ca		SA 258	TBA

Online Delivery Details:

This course is being offered online in real-time via scheduled meeting times, 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 will take place synchronously via Zoom during the registrar-scheduled timeslot. Lectures will not be recorded, so attendance and participation in all classes are highly recommended. In addition, group quizzes will take place synchronously in-class on May 18, May 27 and June 8.

The **final exam** will occur synchronously via D2L. All other course assignments not mentioned above will be submitted asynchronously.

For email inquiries about the course, please expect a reply within roughly 1-business day.

Course Site:

D2L: CHEM 321 L01-(Spring 2021)-Environmental Chemistry

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

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.

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:

Component(s)	Weighting %	Date	Timing
Group quiz	3× 8%	On May 18, May 27, June 8	Synchronous- in- class- 13:00-14:15
Group poster presentation – Toxic compounds	7%	Due: May 31@ 4:00 pm	Asynchronous
Group presentation- Environmental issues	7%	Due: June 16 @ 4:00 pm	Asynchronous
Group participation based on peer evaluations*	2×3%	June 18th at 4:00 pm	Asynchronous
Literature review (individual)	6%	Due: June 4 - 2021 at 4:00 pm	Asynchronous
Final Exam (individual)	50%	Registrar-scheduled	Synchronous

* This grade will be zero if the peer assessments are not submitted.

Each of the above components will be given a letter grade using the official university grading system (see section F.1.1). The final grade will be calculated using the grade point equivalents weighted by the percentages given above and then converted to a final letter grade using the official university grade point equivalents.

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.

The final exam will be administered using an on-line platform. 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.

Each piece of work (reports, assignments, quizzes, 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 a letter grade is as follows.

	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Minimum % Required	93%	86%	81%	77%	73%	69%	65%	61%	56%	52%	45%

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. Students needing accommodation for synchronous assessments due to extenuating circumstances (e.g. significant time zone differences, etc.) should contact the instructor no later than May 11 to ensure that these needs are taken into account when groups are assigned for the term. Students in this situation may be placed in a smaller group to accommodate group work occurring at an alternative time.

Note 1: Late assignments. If a student realizes that they will be unable to submit an individual assignment by the scheduled due date due to technical issues or other concerns, they should contact the instructor as soon as possible to discuss possible accommodations on a case-by-case basis.

Note 2: Group quizzes (75 min, synchronous, in-class). Each group quiz is designed to be completed by students in their assigned groups during class time. Students must join their group's breakout room to participate and receive credit. All group members who are present during a given group quiz will receive the same score based on their group's submitted quiz. Each quiz is designed to be completed in 50-minutes, but an additional 50% buffer time has been provided for technical issues.

Note 3: Group posters. Group posters will take place asynchronously. Group posters accompanied with video summaries will be submitted by D2L by May 31. These posters and videos will be made available for an online 'gallery walk', where students will asynchronously view other teams' work and ask questions. The second half of synchronous classes on June 1 & 3 will be canceled so that students may use this time to engage with other teams' work.

Student grades on the group posters will include a group grade for the presentation, as well as an individual peer-evaluation grade.

Note 4: Group presentations. Group presentations will take place asynchronously. Pre-recorded group presentations are submitted by D2L on June 16. These videos will be made available online, where students will

asynchronously view other teams' work and ask questions. The synchronous class on June 17 will be canceled so that students may use this time to engage with other teams' work.

Student grades on the group presentation will include a group grade for the presentation, as well as an individual peer-evaluation grade.

Note 5: Final exam- all lectures (3 hours, synchronous). The final exam is designed to be completed individually in 2-hours, but an additional 50% buffer time has been provided for technical issues. See section 7 for more details.

The students must get 50% or higher on the final exam to receive C- or higher in the course.

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 group quiz. There are no deferred quizzes. If an individual is absent from their group during a scheduled group quiz, they are not eligible to receive the group assessment score for that quiz. If an excused absence is approved, the percentage weight of that quiz will be pro-rated among the remaining group quizzes for that individual student.

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

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

6. **Course Materials:**

Recommended Textbook(s):

Colin Baird and Michael Cann, *Environmental Chemistry 4th or 5th Edition*: New York : W.H. Freeman (2008 or 2012).
Stanley Manahan, *Fundamentals of Environmental and Toxicological Chemistry". 4th Edition*: CRC Press/Taylor & Francis Group (2013).
Ronald Hites and Jonathan Raff. , *Elements of Environmental Chemistry. 2nd or 3rd Edition*: Wiley (2012 or 2020).
Stanley Manahan , *Fundamentals of Environmental and Toxicological Chemistry: Sustainable Science. 4th Edition*: CRC Press (2013).
Rene P. Schwarzenbach, Philip M. Gschwend and Dieter M. Imboden., *Environmental Organic Chemistry".2nd Edition*: John Wiley & Sons Publication.
G. W. VanLoon and S. J. Duffy, *Environmental Chemistry: A global perspective. 3rd Edition*: Oxford University Press.

Please note that the references used for each lecture topic could be different. More specific recommended references are listed specifically for each lecture in the course schedule table provided on D2L.

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 and final exams are all open-book; students are **only** allowed to use their lecture notes, course materials posted to D2L, and the recommended course textbooks listed in this outline.

   Group quizzes are to be completed within the assigned groups - communication with individuals outside of the group (other than the instructor) during the quiz is not permitted. The Final exam is to be completed individually by the student - communication with anyone other than the course instructor during the exam is not permitted.

   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.

    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/policies/files/policies/sexual-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:** Students needing an accommodation because of a disability or medical condition should contact Student Accessibility Services in accordance with the procedure for accommodations for students with disabilities available at procedure-for-accommodations-for-students-with-disabilities.pdf.

Students needing an accommodation in relation to their coursework or to fulfill requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to the Associate Head, Undergraduate of the Department of Chemistry, Dr. Yuen-Ying Carpenter by email yyscarpe@ucalgary.ca or phone 403.220.6908. Religious accommodation requests relating to class, test or exam scheduling or absences must be submitted no later than **14 days** prior to the date in question. See Section E.4 of the University Calendar.

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:

- 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 - May 05 2021 09:42

Department Approval