



COURSE OUTLINE

1. **Course:** CHEM 201, General Chemistry: Structure and Bonding - Winter 2021

Coordinator(s)

Name	Email	Phone	Office	Hours
Dr Bronwen Wheatley	bmmwheat@ucalgary.ca	403 220-8077	SA 144C	please see D2L
Dr Vivian Mozol	vjmozol@ucalgary.ca	TBA	SA 144E	TBA

Section(s)

Lecture 01: MWF 11:00 - 11:50 - Online

Instructor	Email	Phone	Office	Hours
Dr Pierre Kennepohl	pierre.kennepohl@ucalgary.ca	TBA	SB 231	MWF 12:00-13:00

Lecture 02: TR 08:00 - 09:15 - Online

Instructor	Email	Phone	Office	Hours
Dr Vivian Mozol	vjmozol@ucalgary.ca	TBA	SA 144E	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.

The learning outcomes for the course will be delivered synchronously. The learning objectives, and a class calendar outlining which learning objectives are covered each day, can be found within the D2L website.

Lecture. Beginning January 11th, 2021, Zoom lectures will occur weekly on Monday, and Friday at 11-11:50 a.m. for L01 and on Tuesday and Thursday at 8 - 9:15 a.m. for L02. Recordings of these classes will be made and posted for review within D2L. When appropriate students will work in unstructured groups (using breakout rooms) and TopHat will be used to formatively assess class understanding.

Tutorials and Labs. Students will also meet via Zoom for structured, synchronous group-work (tutorials and lab activities) as scheduled in their Student Center beginning January 18th, 2021. These smaller group activities will not be recorded.

- Tutorial work will be submitted 24 hours after the end of the scheduled Tutorial, for grading for and feedback. There are five activities worth 35% of the course grade. It is hoped that tutorial activities will prepare students for the format of the final online exam (30% of the course grade).
- Lab work makes up the remaining 35% of the course grade. There are five lab activities worth 7% each. Each Lab Activity will be assessed via a preparatory D2L quiz posted 1 week prior to the scheduled laboratory cycle and worksheets submitted at the end of the laboratory period.

Course Site:

D2L: CHEM 201 (Winter 2021) ALL - General Chemistry: Structure & Bonding

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

Structured Groupwork for the Tutorials and Lab Activities: begin the week of January 18th, 2021

(Activities will occur in alternating weeks beginning with the Lab Activities. See calendar in the course syllabus for the weekly schedule & your student centre for the exact time your Zoom meetings will take place).

2. **Requisites:**

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

Prerequisite(s):

Chemistry 30 (or Continuing Education - Chemistry 2) and one of Mathematics 30-1 or Mathematics 2 (offered by Continuing Education).

Antirequisite(s):

Credit for Chemistry 201 and any of 209, 211 or 301 will not be allowed.

3. **Grading:**

The University policy on grading and related matters is described in [F.1](#) and [F.2](#) of the online University Calendar.

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

Component(s)	Weighting %	Date
Tutorial Activities	35%	Scheduled within an individuals student center. Start the week of January 25th, 2021.
Lab Activities	35%	Scheduled within an individuals student center. Start the week of January 18th, 2021.
Final Exam	30%	To be scheduled by the registrar; synchronous 2-hour exam + 1-hour of buffer time

For any synchronous assessment (lab/tutorial activity, final exam), 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 must contact the course coordinator *(Dr. Mozol; vjmozol@ucalgary.ca) at least 14 days in advance of the scheduled assessment.

Tutorial Activities will be a combination of individual reflections and group problem solving worksheets, due 24 hours after the scheduled time period. There are five tutorial activities each worth a total of 7% of the final grade.

Lab Activities will involve viewing videos and completing worksheets that analyze these videos for course content. Relevant worksheets, are individual submissions made to a D2L drop box. A D2L preparation quiz will be available 1 week prior to the start of any lab cycle. Details are posted in D2L. There are five lab activities each worth a total of 7% of the final grade.

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	95.00 %	87.00 %	82.00 %	77.00%	72.00%	66.00 %	62.00 %	58.00%	54.00%	50.00 %	45.00 %

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. - **updated April 6, 2021**

In order to achieve the prerequisite requirements (i.e. C-) for future Science courses, a student must meet **ALL** of the following requirements:

- 1) Achieve a minimum grade of 50% for 3 of the 5 laboratory activities for the course and
- 2) Achieve a minimum grade of 50% for 3 of the 5 tutorial activities for the course and
- 3) Achieve a minimum grade of 50% on the online Final Exam.

Therefore, if **ANY** of the above three are not met a maximum grade of D+ will result.

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, then the percentage weight of the legitimately missed assignment could also be pro-rated among the components of the course.

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

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

6. **Course Materials:**

Recommended Textbook(s):

Flowers, Theopold, Langley, Robinson et. Al., *Chemistry: Open Stax*: Open Stax.

Important note about your textbook:

- Our recommended text is an open-educational resource, freely available online through the OpenStax website (OpenStax Chemistry: <https://openstax.org/details/books/chemistry>) & within D2L. You are welcome to 1) refer to the text online (website or D2L), 2) download the PDF to your own device.

Recommended resource so instructor can monitor class progress:

- **TopHat** will be used so instructors can monitor class progress: Students are strongly encouraged to participate in the use of TopHat (using cell phone, tablet or laptop) during synchronous zoom classes or as homework that reviews relevant Video Lectures . Access to TopHat is free for registered students. Details regarding registration of TopHat can be found in D2L..

Other Recommended Course Materials

- A Model Kit is recommended but not required. (Molymod kits are suggested).

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:**

Any student with academic accommodations must be registered with Student Accessibility Services (see Section 12(e) below), and must identify themselves to their instructor as soon as possible.

The Final Exam is a synchronous, timed, open book exam to be completed individually. It is assumed that students will act with academic integrity and not work collaboratively with their peers unless otherwise indicated. In order to ensure you are dealing with correct course content the resources you are allowed to use in an open book exam are: Your course textbook (OpenStax within D2L) or an equivalent, self-contained first-year Chemistry textbook or e-textbook (e.g. Silberberg American edition, Zumdahl, Brown & LeMay, etc) that you have been looking at as you are learning the course material. Your personally created course notes. Any collaborative notes created during group work done during Tutorial or Lab Activities. Any material posted by your instructor for your use within D2L. It is expected that the Final Exam should take a student no more than two hours to complete, but students will be given three hours, as scheduled by the registrar. The extra hour is designed to accommodate any technical issues.

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

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

Not applicable.

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.

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](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 (syasa@ucalgary.ca) or phone at [403-220-2208](tel: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](#)

Additional information is available on the [Student 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 of the Department of Chemistry, Dr. Yuen-Ying Carpenter by email ahugchem@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 (FOIP). 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](tel:403-220-3911) Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: [403-220-3913](tel: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.

13. In addition to the Lecture component of the course, students are scheduled for tutorial and lab activities. You must attend your assigned tutorial or laboratory time slot unless you have been given written permission by the tutorial or lab coordinator.

- **Lab Activities:** Laboratory activities will begin the week of January 18th, 2021. These activities will occur via Zoom. There are five activities each worth 7% of your final grade. Students must complete 3 of the 5 activities with a grade of 50% weighted average to be eligible for a pre-requisite pass for the course. Details for each activity are posted in D2L the week prior to the activity. .
- **Laboratory Exemptions:** Students repeating the course within the last two years can be exempted from the Laboratory Component of the course if a grade of 75% or higher was obtained on the lab portion. Students choosing to exempt from the lab should be aware that, the new online labs in Winter 2021 may be significantly different from labs that occurred prior to Fall 2020 in this course; the material covered in these online labs will be integrated into other course assessments; and, the lab grade achieved on the previous attempt will be carried forward. Prior to applying for an exemption, students are encouraged to connect with their course instructor or coordinator to better understand the risks and benefits in their specific online course, as well as what access they will (or will not) have to lab materials or feedback as an exempt student. Students applying for a lab exemption should contact the Undergraduate Science Center (science.advising@ucalgary.ca) no later than Monday January 18th, 2021 to apply. Students registering in the course after this date should contact the USC as soon as possible if they wish to apply for an exemption.
- **Tutorial Activities:** Tutorial activities will begin the week of January 25th, 2021. These activities will occur via Zoom. There are five activities each worth 7% of your final grade. Students must complete 3 of the 5 activities with a grade of 50% weighted average to be eligible for a pre-requisite pass for the course. Details for each activity are posted in D2L the week prior to the activity.

Course Outcomes:

- OBSERVATION/ANALYSIS: Collect and analyze observations related to experiential chemical activities.

- ATOMS; Use the quantum theory description of the energy and spatial distribution of electrons to correlate the physical properties of atoms with how atoms interact
- CHEMICAL SPECIES; Generate Lewis & VSEPR diagrams and use bonding theories to describe and evaluate the connectivity between atoms and spatial arrangement of bonding in a chemical species
- COLLECTIONS OF CHEMICAL SPECIES; Identify the charge distribution in a chemical species and use it to illustrate how collections of chemical species will interact with each other physically and chemically.

Electronically Approved - Apr 06 2021 16:02

Department Approval