



COURSE OUTLINE

1. **Course:** CHEM 209, General Chemistry For Engineers - Fall 2020

Lecture 01: TR 14:00 - 15:15 - Online

Instructor	Email	Phone	Office	Hours
Dr. Roxanne Jackson	rjjackso@ucalgary.ca	403 220-8797	SA 258	Please see D2L

Lecture 02: TR 12:30 - 13:45 - 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.

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

Lecture

Lecture sections will meet via zoom classes on Tuesdays and Thursdays beginning September 8th, 2020. Tuesdays will involve coverage of course content and Thursdays are set aside for a subsequent Question and Answer session and content coverage should delivery time during the previous Tuesday be insufficient. There will also be short YuJa videos on course content posted in D2L. Timetabling of lectures is found via your student center. When appropriate students will work in unstructured groups (using breakout rooms) and Tophat will be used to formatively assess class understanding. Recordings of the lecture classes, except for any breakout room activities, will be made and posted for review within D2L.

Tutorials and Labs

Students will also meet via Zoom for structured groupwork (tutorials) and lab activities as scheduled in their Student Center beginning September 21st, 2020. These smaller group activities will not be recorded unless ALL members of the group choose to do so.

*Note: Due to the Thanksgiving holiday, students in scheduled synchronous tutorials and labs on Mon Oct 12th will be rescheduled for alternate existing lab/tutorial times during this week. Students will have the opportunity to indicate the existing section(s) that best suit their schedule by emailing the course coordinator no later than Mon Oct 5th.

Tutorials

It is expected that tutorial activities can be completed within the allotted synchronous tutorial time (50 min). There are ten tutorial assignments worth 3% each. In the absence of previous online assignments these tutorials have been designed to specifically help students prepare for online assignments #1-2 and the final exam (40% of the course grade).

Labs

Lab work will be submitted for grades, within 24 hours of completing an activity. Lab work makes up the remaining 30% of the course grade. There are five lab activities worth 6% each.

Course Site:

D2L: CHEM 209 ALL - (Fall 2020)-General Chemistry For Engineers

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):

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 209 and any of 201, 203, 211, 213 and 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
Online Assignment 1	10	Friday October 2, 2020 at 7pm
Online Assignment 2	10	Friday November 20, 2020 at 7 pm
Final Exam	20	To be announced by the registrar. Occurs sometime during December 12-23.
Tutorial Activities	10 x 3%	Scheduled within an individuals student center.
Lab Activities	5 x 6%	Scheduled within an individuals student center.

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.

Online Assignments 1 and 2 (timed, synchronous)

Online assignments 1 and 2 should be completed under exam conditions (see section 7). Both assignments are designed to be written by students within 60-minutes, but an additional 30-minutes is available to account for technical or internet issues.

Final Exam (timed, synchronous)

The exam will be scheduled for a 3-hour timeslot by the Registrar - the exam is designed to take students 2-h to complete it, but an additional hour of writing is available to account for technical and internet issues. See Section 7 for additional details on allowed resources.

Tutorial activities will consist of biweekly reflections and problem solving worksheets. Relevant worksheets will be group submissions made to a D2L dropbox, within 4 hours of completing any tutorial activity.

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 dropbox, within 24 hours of completing any lab activity

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 has a registrar scheduled final exam.

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 50% weighted average for all the online assignments (#'s 1-2 and the final)
2. Achieve a minimum grade of 50% for the laboratory component of the course and
3. Achieve a minimum grade of 50% for the tutorial component of the course.

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:

The following out of class activities are scheduled for this course.

Activity	Location	Date and Time	Duration
Midterm 1	On-line	Friday, October 2, 2020 at 7:00 pm	90 Minutes
Midterm 2	On-line	Friday, November 20, 2020 at 7:00 pm	90 Minutes

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:

This course will use an Open-Educational Resource (OER) as its textbook. The textbook is available within the D2L course website. It is a selection of relevant chapters from the OpenStax Chemistry 2e Textbook and instructor notes.

Recommended Resource; 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.

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:

The online assignments and the Final Exam are synchronous, timed, open book exams to be completed individually. It is assumed that students will act with academic integrity and not work collaboratively with their peers.

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 **Online Assignments 1 and 2** should take a student no more than an hour to complete, but students will be given one hour 30 min. The extra 30 minutes is designed to accommodate any technical issues.

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.

The **Online Assignments and Final Exam** will consist of any combination of multiple choice, short answer and long answer questions. For long answer questions, if desired, students will be able to submit their answers as a scanned image, word document or pdf document within the D2L quiz.

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 Center:** 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 (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 at (<https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf>)
- d. **Misconduct:** Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties. Examples of academic misconduct may include: submitting or presenting work as if it were the student's own work when it is not; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; collaborating in whole or in part without prior agreement of the instructor; borrowing experimental values from others without the instructor's approval; falsification/ fabrication of experimental values in a report. **These are only examples.**
- 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](#) 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.

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

Lab Activities: Laboratory activities will begin the week of September 21st, 2020. These activities will occur via Zoom. There are five activities each worth 6% of your final grade. Details for each activity will be posted in D2L the week prior to the activity. The lab format has changed from previous years, and current lab activities will be tested as part of the online assignments (40% of the course grade).

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 Fall 2020 may be significantly different from prior labs 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 September 14th, 2020 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 Structured Group work: Tutorial activities will begin the week of September 21st, 2020. These activities will occur via Zoom. There are ten tutorial activities each worth 3% of your final grade. Details of each activity will be posted in D2L the week prior to the activity. As there are no previous online exams available for students to use as study material, the tutorials have been designed to increase student success on the online assignments (worth 40% of the course grade).

Course Outcomes:

- Identify factors that affect reaction rate, depict reaction rate with symbols, and explain rates at the molecular level
- Identify factors that affect reaction extent, depict reaction extent with symbols, and explain extent at the molecular level
- Recognize how different reactions behave for key examples of acids & bases, solubility, electrochemistry

- Connect atomic and chemical properties with the electronic structure of atoms, molecules, and ions and between these species
- Develop an appreciation for why these aspects of chemistry are important to engineers
- Apply good laboratory practice

Electronically Approved - Sep 07 2020 14:16

Department Approval

Electronically Approved - Sep 07 2020 21:31

Associate Dean's Approval