



COURSE OUTLINE

1. **Course:** CHEM 301, The Chemical World - Fall 2020

Course Outcomes:

- Ask informed questions about the chemistry encountered in everyday life.
- Investigate chemical claims and current issues in the field of chemistry.
- Connect chemistry with other sciences, technology and their everyday experiences.
- Give and receive peer feedback by working effectively as part of a team.
- Distinguish between different forms of the elements (atoms, ions, molecules).
- Connect the properties of a substance to its structure.
- Depict chemical reactions and molecules using symbols and drawings.
- Describe chemical reactions by changes in bonding.

Lecture 01: TR 11:00 - 12:15 - Online

Instructor	Email	Phone	Office	Hours
Dr Nicole Sandblom	nicole.sandblom@ucalgary.ca	403 210-9816	REMOTELY	During any lecture time that is not a scheduled Zoom class. Zoom meetings also available by appointment. I typically respond to @ucalgary emails within 24 hours on weekdays and will plan time to respond more quickly close to due dates.

Rationale

The Chemical World is a science option course offered by the Department of Chemistry for non-majors. The overarching goal of this class is to help you develop a general awareness and appreciation of chemistry. By the end of this course, as a “chemically literate” person, you will be knowledgeable about the basic chemical principles you encounter in your everyday life.

Aims

During this course, you will develop an understanding of three Big Ideas in Chemistry:

- Everything is made of atoms.
- Chemists use repeatable observations and experiments to understand the world.
- Chemists develop technologies and products used in all aspects of our lives.

You will prepare a series of short assignments to look more in depth at the chemical topics that interest you and that connect to your learning in the course. Your team will prepare an infographic project on a chemical topic of your choice. Milestone assignments and various activities will lead you through the topic selection process and through the important stages of reviewing and revising.

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.

I will attend all of the scheduled CHEM301 Lecture times from 11:00-12:15 on Tuesdays and Thursdays, but you won't need to do so. All dates for **scheduled Zoom** classes are listed in the calendar on D2L; typically, we will have a **scheduled Zoom** class on Tuesdays (and a few Thursdays).

Our course will have a weekly pace with a proposed rhythm and more information for your planning will be provided on D2L including a detailed calendar and schedule. I encourage you to regularly attend and actively participate in **scheduled Zoom** classes in order to meet your goals and succeed in this class. Zoom sessions will not typically be recorded but the slides will be posted.

In addition, I welcome you to attend the other **optional Zoom** classes to meet with me periodically during the semester to discuss your progress or your team's progress.

The *Detailed Syllabus* for Chemistry 301 is provided at the end of this document and also as a separate file on D2L for further information about Activities and Assignments. All Activities and Assignments will be submitted electronically via D2L. Further details about these requirements will be provided in Zoom class and on D2L.

As described in Section 13, we'll form teams during the Class 1 - the first **scheduled Zoom** class meeting on September 8, 2020. The whole team earns the same score for Team Activities even if some students are absent. Clear communication with your team is an important learning outcome for this course.

Course Site:

D2L: CHEM 301 L01-(Fall 2020)-The Chemical World

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.

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:

ASSESSMENT COMPONENTS

Assessment Method	Description & Due Dates (see D2L for complete calendar)	Weight	Aligned to Course Learning Outcome
Reflection Activities (10%)	Part 1: September 18	5%	3
	Part 2: December 9	5%	
Individual Assignments (45%)	Module Zero: Encountering Academic Integrity Assignment: September 18	5%	4, 5, 6, 7, 8
	Module 1: Molecule Assignment October 2	5%	
	Comments within ITP Metrics survey October 9, December 9	5%	
	Module 2: Chemist Profile Assignment October 30	10%	
	Module 3: Asking Questions Assignment November 20	10%	
	Module 4: Follow-up Assignment for Project December 4	10%	
Team-scored Activities (10%)***	Team Introductions	1%	4, 5, 6, 7, 8
	Approval for Contract September 25	3%	
	Team Activities	6%	
Team-scored Project (35%)***	Team Meeting Minutes	3%	1, 2, 3
	Team Project Proposal October 13	5%	
	Team Peer Reviews for Version 1 of the Project November 23	5%	
	Response to Peer Reviewers November 30	2%	
	Final Version of Project November 30	20%	

All Activities and Assignments are due at 11:59PM via D2L on the dates in the calendar on D2L.

Team Activities will be completed during **scheduled Zoom** class times and those deadlines will be typically 11:59PM via D2L on the day after the class.

There is no registrar-scheduled final exam in this course.

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 %

Your grade is determined by marks for both individual work and team-scored components.

***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 **Team-scored Activities** score will be multiplied by the PES to determine the final mark

for the teamwork component of the course. Your total **Team-scored Project** score will be multiplied by the PES to determine the final mark for the project component of the course. See Section 13 for more details about the project component.

Communication, both oral and written form, is important to this course, and the quality of your writing will factor into the evaluation of all assignments. Constructive critical analysis of peer work is also an essential course component.

Additional Academic Integrity Information: All work submitted for this class (whether as a draft version or for final grading) is held to the strictest standards for intellectual honesty. All team assignments are considered a team effort. When you put your name on a team submission, you are indicating that you are submitting your own work.

During the first few weeks of the semester, you will complete the Encountering Academic Integrity Assignment. You must successfully complete this assignment before any other assignments will be graded and your score will be 50% or 100%. Note that you can only score 100% if your first submission is complete and sufficient. See the scoring rubric on D2L. You are welcome to ask for clarifications before submitting.

I encourage CHEM301 students to discuss academic integrity issues surrounding assignments with me. Please come speak with me if you feel like you are about to make a bad decision with respect to your academic integrity.

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.

Please see the detailed syllabus in Section 13

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

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

6. **Course Materials:**

Learning Resources:

Your required handouts, videos, and readings for this course are available through postings on D2L. You will be responsible to look at electronic handouts in scheduled Zoom classes and to keep current with the reading material posted on D2L.

Online Course Components:

ITP Metrics provides some teamwork resources. This system involves secure web-based tools for team peer evaluations. These tools are free to all students and are not dependent on prior access.

Technology:

I recognize that we all will have the occasional glitches for aspects of online learning, but note that we are aiming to follow the following general guidelines.

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:

No examinations in this course.

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:

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.

In CHEM 301, I ask you to email me first. I can clarify any comments on your assignment or answer questions about the grade you have earned. If you still have concerns, please proceed to contact me as described in 11a.

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 (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](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.

CHEM 301 DETAILED COURSE SYLLABUS

I will first point out that successful students tend to:

- Come prepared to participate actively in **scheduled Zoom** class activities.
- Read all material on Desire2Learn.
- Complete all assignments to the best of their ability.
- Submit all or most assignments on time.
- Provide thoughtful, well-organized, and critical suggestions to their peers during the review process.
- Reflect on their peer reviews and incorporate suggestions into their work.

What can you expect from me?

Most of this syllabus is directed at giving you information about the structure of the course, grading and assignment information and what I expect from you. However, I also recognize that there are certain expectations that I need to meet in order for you to have a positive learning experience in this class.

Specifically, I will:

- Be respectful of all persons in the class and create an environment where all opinions and comments are heard and valued.
- Be available outside of class time to discuss course work or other course concerns (or just to chat).
- Encourage you to be well read
- Provide you with instructional material that will enable you to excel in this class.
- Develop activities that allow you to build your writing skills.
- Assess all assignments fairly and provide suggestions and comments for improvement.

I am excited about this class and look forward to watching you develop your “chemical literacy”.

Format and Procedures:

Teams in CHEM301:

This class is might be different in format from others you encounter, and our teams might be different than the kind of group work you may have done in other classes. I will form the teams during the first **scheduled Zoom** class, and you will work together throughout the term. You will spend many **scheduled Zoom** classes working in teams applying in a Team Activity what you've learned from your own work. Other **scheduled Zoom** classes will be devoted to working in teams on your Project. Team members also evaluate each other's contributions to the group throughout the term.

What will your project look like in CHEM301?

In our first few weeks of **scheduled Zoom** classes, we will discuss more details about the project. Ultimately, I want your team to have a chance to look more deeply at an area of chemistry that you find interesting.

End-of-Semester Goal: Team Project

To prepare a well-supported infographic that connects to our first 3 learning outcomes on a chemistry topic of your choice.

Milestone: Project Proposal

This milestone assignment will allow you to focus on ideas from your information search process and start to build your Version 1. This kind of planning can help you generate ideas for your writing; consider your interpretations and conclusions from your research thus far in order to identify supporting details and missing pieces. I would like you to be flexible as you work on your Proposal and start preparing your Version 1, but you will commit to your overall topic as part of the Approval of Topic process that accompanies this assignment.

Milestone: Version 1 of your Project

This milestone assignment will allow you to focus on a first **polished** try at the assignment. I won't score this assignment, but your team must submit by the deadline in order to participate in the following Milestone.

Milestone: Peer Reviews of your Version 1

Your team will critique Version 1 for two other teams and provide reviews to help with revising and resubmitting the final Project.

Milestone: Response to Reviewer Comments of your Version 1

Your team will write a letter to the reviewers about how you worked to incorporate feedback in revising and resubmitting the final Project.

What will your Individual Assignments look like in CHEM301?

For each Module, you will write a short assignment to connect your learning in the class with a variety of topics of your choice. More information will be provided on D2L. In particular, you will prepare a follow-up to the Team Project at the end of the course.

Course Requirements:

Scheduled Class Attendance:

- Arrive at **scheduled Zoom** classes on time. Late arrivals and early departures can be disruptive and can result in you missing important information. I understand that there are special circumstances when you may have to arrive late or leave early; please make your arrival/departure as unobtrusive as possible and be sure to let your teammates know about your situation in advance of class. Your team members will determine your PES score depending on your communication with your team.
- Attend all **scheduled Zoom** classes and tutorials. If you are ill, email me as soon as possible and make-up arrangements might be able to be planned. If your email concerns a team project session, you should communicate with your team too.

Peer Reviewing Expectations:

Peer review is an important component of this class and research into student learning clearly indicates that student writing improves when at least one peer review step is included before the submission of a final assignment. In order for the peer review process to be successful, your team's work must be completed on time. Note: Version 1 must be submitted by November 16. Your team might not be able to participate if your team's work is not submitted on time and your team will forfeit the 7% of the semester associated with Team Peer Reviews for Version 1 of the Project due November 23 and Response to Peer Reviewers due November 30.

What happens if you are late for any assignments?

For most assignments, I aim to balance being fair and reasonable about deadlines. I don't plan to penalize late work and I know that life happens during the semester and especially this year. However, please note:

1. Let me know as soon as you realize you will be late! I will be able to help you plan the next steps. You might need an excused extension (mental or physical health, emergencies, etc.) and I can plan your subsequent deadlines accordingly.
2. With the exception of Version 1 of the Team Project, you can also use one 48 hour postponement with no questions asked if you need it. You do need to let me know that you are cashing in on this policy (See Step 1 above).

Please come speak with me if you feel like you are about to make a bad decision with respect to your academic integrity.

CHEM 301 Guidelines for Team Contract

Modified with permission from SCIE311 & BIOL435 Course Materials

Rationale

To prepare you for the teamwork in professional school and/or the workforce, you will be assigned a team for the semester. Your team will work together to complete the collaborative team-scored assignments in CHEM301 this semester.

As you learned from the assigned readings, videos and animations about teams, there are five stages of team development. If you write a team contract, you can help your team reach performing stage, at which point teams are highly effective. The process of generating a team contract can actually help jump-start a group's collaborative efforts by immediately focusing the team members on a definite task. The team members must communicate and negotiate in order to identify the quality of work they all wish to achieve, and the level of group participation and individual accountability they all feel comfortable with. A well-formulated team contract helps a team avoid problems that lead to a dysfunctional team and poor-quality work.

Team Contract Activity

There are two major sections to a team contract:

1. identification of expectations
2. specification of the consequences for failing to fulfill these expectations

Since the basic purpose of this team contract is to accelerate your team's development, to increase individual accountability for team tasks, and to reduce the possibility for team conflict, make your contract as specific as possible; the more specific that you can be about your team expectations and procedures, the greater chance you have for a successful team experience.

- Read the draft Team Contract on the next page. A Word version of the contract will be available on D2L for your team to edit for submission.
- Think about what other ground rules you think are necessary, and how you think your group should deal with failure to follow these ground rules.
- Your team will discuss the contract in **scheduled Zoom** class time.
- Once you have all agreed on the contract for your team, one team member will upload a signed version to the team D2L Dropbox > Team Activity 1: Team Contract for Approval by your instructor.

What if that your team is not working as well as you had hoped? (Despite the team contract)

This experience is normal but needs to be attended to immediately. Perhaps your team is simply not following the established contract procedures or roles as strictly as you should be, or perhaps you need to change some of the procedures or roles as outlined in your contract. Immediately discuss and resolve the challenges your team is facing; do not delay, as the problems will not go away by themselves. Don't forget that you can ask your instructor to help your group resolve the conflict so that you will have the most positive team experience possible.

Draft Team Contract Template

The ground rules for our team are: [add additional rules as discussed by your team]

1. Come to all **scheduled Zoom** classes and on time
2. Come prepared and ready to participate in the team
3. Listen actively to what others have to contribute
4. Be supportive of the efforts and initiatives of others
- 5.
- 6.
- 7.

Our **asynchronous** communication plan will be: [using the D2L Discussions, using other technology, etc. insert text here]

Our **scheduled Zoom** class plan for cell phones and device-multitasking will be: [only use devices for team communication and team activity, etc. insert text here]

We will assign roles for each Team Activity and Meeting by: [asking for volunteers, rotating by last name, etc. insert text here]

We agree that the consequences for failing to follow the above ground rules are: [add additional rules as discussed by your team]

1. If a team member is unable to attend a **scheduled Zoom** class, they will notify the team ahead of time.
2. If someone on the team is not paying attention during a team activity (e.g. not listening; texting or emailing), other team members will point this out and they will immediately give their full attention to the task.
3. If someone on the team is being too critical or otherwise unsupportive, other team members will point this out and they will make efforts to watch their words and interactions.
- 4.
- 5.

If the infractions continue, our team will: [add plan as discussed by your team]

Team Members: [decide who will upload the final version and add their name as #1]

1. All team members participated in formulating the standards, roles, and procedures as stated in this contract.
2. All team members indicate that they have read the **Readings in Module Zero** regardless of when they registered in CHEM 301
3. We understand that we are obligated to abide by these terms and conditions.

1) signature _____ date _____

Name:

2) signature _____ date _____

Name:

3) signature _____ date _____

Name:

4) signature _____ date _____

Name:

5) signature _____ date _____

Name:

6) signature _____ date _____

Name:

Electronically Approved - Sep 02 2020 10:56

Department Approval

Electronically Approved - Sep 02 2020 15:46

Associate Dean's Approval