



## COURSE OUTLINE

### 1. **Course:** CHEM 301, The Chemical World - Fall 2022

#### **Course Outcomes:**

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

Lecture 01 : TR 11:00 - 12:15 in SA 147

<b>Instructor</b>	<b>Email</b>	<b>Phone</b>	<b>Office</b>	<b>Hours</b>
Dr Nicole Sandblom	nicole.sandblom@ucalgary.ca	403 210-9816	SA 144J	TBA

#### **How can you reach me?**

Email: [nicole.sandblom@ucalgary.ca](mailto:nicole.sandblom@ucalgary.ca) (you might also see [ntaucoin@ucalgary.ca](mailto:ntaucoin@ucalgary.ca) listed in places online but they both go to the same INBOX). I typically respond to @ucalgary emails within 24 hours on weekdays and will plan time to respond more quickly close to due dates. If you use an informative subject line with CHEM301 included somewhere in that text, I will spot your message and reply more quickly.

Office phone: 403-210-9816 (if you leave a voicemail, that will auto-send an email to me)

#### **My Commitment to you**

First things first, none of us is really okay in the middle of an on-going global pandemic. If you tell me you are having trouble, I am not going to judge you or think less of you. I hope you'll say "right back at you" to me! I am fully vaccinated with my second booster in July; if you haven't yet received all your doses, please try to do soon to protect yourself and those people around you.

I typically try to run my courses with the rule: when life happens, send me an email...

I will provide "flexibility with guardrails" (Aebersold quoted by McMurtrie 2022 [Teaching: Staying Flexible Without Becoming Overwhelmed](#)).

- You don't need to share lots of personal details about your health (physical or mental) or other concerns like your family situation.
- You are welcome to share as needed and I can help you find someone on campus as a resource if that can help
- You can ask for what you need surrounding attendance or deadlines.
- Please don't come to in-person classes if you, or someone in your household, are feeling ill. I will do the same. I can imagine situations where we need to cancel class or move into Zoom options and we will chat about those possibilities in the first few weeks.

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.

#### **How This Course Works**

The Chemical World is a science option course offered by the Department of Chemistry for non-majors. 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. I really want to help you develop a general awareness and appreciation of chemistry.

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.

We will work towards Course Outcomes: Your team will work on a series of activities in-class to prepare for assignments and to apply your learning. 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. You will prepare an infographic project on a chemical topic of your choice. I hope for you to complete this project with a partner if possible.

Our course will have a weekly pace with a proposed rhythm and more information for your planning will be provided. I will try to post my estimate of how long readings will take. I encourage you to regularly attend and actively participate in classes in order to meet your goals and succeed in this class.

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 during class and on D2L. As described in Section 13, we'll form teams during the first few weeks of class. Clear communication with your team is an important learning outcome for this course.

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:**

**We will use scheduled class time:** we will use many Tuesday and Thursday times for in-person classes in Science A. A tentative planned calendar will be posted in D2L. I planned for a catching-up or getting-ahead week as a break week for October 11-14, where you have drop-in classes and one brief assignment. On November 21 and 29, I also planned for drop-in classes.

**We won't use a textbook:** I curate content from the web and build my own resources, so our required handouts, videos, and readings for this course are available through postings on D2L.

**We will work through Modules:** Module Zero is an Orientation for the first week, and then the other four Modules range from two-four weeks each. For every Module, I wrote a Learning Guide for the readings and videos. You will use these readings to support your learning in the Activities and Assignments. You will complete the Learning Guide before attending your weekly scheduled lectures. I designed D2L checklists for more information about the timing of these aspects of asynchronous work.

### **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:**

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.

Zoom will be our back-up plan if necessary. In addition, your team may find that some team members will use Zoom as a back-up plan during team activities.

### **Course Site:**

D2L: CHEM 301 F2022 The Chemical World

**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](mailto:bjmheyne@ucalgary.ca))

## 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:

Course Component	Weight	Due Date (duration for exams)	Modality for exams	Location for exams
Reflection and Feedback Activities: Learning Connections <sup>1</sup>	14%	Ongoing		
Reflection and Feedback Activities: Peer Feedback <sup>2</sup>	8%	Ongoing		
Individual Assignments <sup>3</sup>	34%	Ongoing		
Team Activities <sup>4</sup>	12%	Ongoing		
Term Project <sup>5</sup>	32%	Ongoing		

<sup>1</sup> See Calendar on D2L: Aligned to Course Learning Outcome 4 • Introductions September 9 (4%) • Mid-semester check-in October 14 (4%) • Final Reflection December 7 (6%)

<sup>2</sup> See Calendar on D2L: Aligned to Course Learning Outcome 1 • ITP Metrics Written Feedback October 13 (2%) • Version 1 Peer Review Chats November 24 (4%) • ITP Metrics Written Feedback December 7 (2%)

<sup>3</sup> See Calendar on D2L: Aligned to Course Learning Outcomes 2-7 • Encountering Academic Integrity September 16 (4%) • Chemist Profile October 7 (15%) • Molecule November 18 (15%)

<sup>4</sup> See Calendar on D2L: Aligned to Course Learning Outcomes 1-8 • Team Contract September 23 (2%) • In-class Activities all semester (10%): I plan to drop your 3 lowest scores

<sup>5</sup> See Calendar on D2L: Aligned to Course Learning Outcomes 2-8 • Proposal October 21 (4%) • Showcase and Response to Reviewers December 1 (4%) • Final Version of Project December 1 (24%)

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
<b>Minimum % Required</b>	96 %	92 %	88 %	84%	78%	72 %	68 %	62%	58%	54 %	50 %

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

If you work with a partner for the Project, both partners will earn the same scores. See Section 13 for more details about the Project component.

\*\*\*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](http://itpmetrics.com). Each team member will rate you using parameters relating to teamwork. I calculate the average of these ratings and determine your **Peer Evaluation Score (PES)** based on your teammates' evaluation. Your total **Team Activities** score will be multiplied by the PES to determine the final mark for the teamwork component of the course. Additional details will be provided in class. See Section 13 for more details about the Project component.

All Assignments and the Project have *D2L Due Dates* at 11:59PM on the dates in the calendar provided on

D2L. You can still submit after the *D2L Due Date* since these deadlines are Best-By-Dates. See more information in Section 13.

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.

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. I will ask you to look at electronic handouts in-class and to keep current with the reading material posted on D2L as described in Section 1.

##### **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.

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.

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.

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 activities are considered a team effort. When you put your name on a team or partnered 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. I ask you to successfully complete this assignment before any other assignments will be graded. See the scoring rubric on D2L. You are welcome to ask for clarifications before submitting.

## 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 CHEM301, I ask you to first email me. 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 Services:** For more information, see their [website](#) 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](mailto:svsa@ucalgary.ca)) or phone at [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](mailto: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 (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:** [SU contact](#), Email SU Science Rep: [sciencerep1@su.ucalgary.ca](mailto: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.

### Section 13 of Course Outline

CHEM301 Detailed Course Syllabus

#### What can you expect from me?

In order for you to have a positive learning experience in this class, 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 materials that will enable you to excel in this class.
- Develop activities that allow you to build your chemical 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”.

### **Nicole’s Tips to Succeed**

*Successful students tend to:*

- Come prepared to participate actively in class activities.
- Read or watch 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.

### **Teams in CHEM301:**

This class 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 few weeks, and you will work together throughout the term. I will ask you to complete a quick survey so that I can form teams carefully. You will spend many classes applying during a Team Activity what you’ve learned from your own work. Other classes will be devoted to working in teams reading and reviewing Assignments and the 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 classes, we will discuss more details about the project. Ultimately, I want you to have a chance to look more deeply at an area of chemistry that you find interesting.

### **End-of-Semester Goal:** Term Project

To prepare a well-supported infographic that connects to our 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 infographic; 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 you will need to submit by the deadline in order to participate in the following Milestone. You will critique Version 1 for other classmates and provide reviews to help with revising and resubmitting the final Project.

*Milestone: Showcase & Response to Reviewer Comments of your Version 1*

You will share your Final Project in class and respond to your reviewers about how you worked to incorporate feedback in revising and resubmitting the final Project.

### **What will your Individual Assignments look like in CHEM301?**

You will write three short assignments to connect your learning in the class with a variety of topics of your choice. More information will be provided on D2L.

### **Other details:**

Attend class and arrive at 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.

**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 work must be completed on time. Note: Version 1 must be submitted by November 23. You might not be able to participate in the peer review if your work is not submitted on time.

### **What about deadlines?**

Best-By-Dates description modified and used with permission from Joshua Eyer. [https://twitter.com/joshua\\_r\\_eyler/status/1427756768210337797?s=21](https://twitter.com/joshua_r_eyler/status/1427756768210337797?s=21)

For most assignments, I aim to balance being fair and reasonable about deadlines. You might notice that I also included some deadlines for myself on your calendar. I don't plan to penalize late work and I know that life happens during the semester and especially this year. I think adding deadlines to the calendar keeps us all on track and means that we can have "flexibility with guardrails" (Aebersold quoted in [Teaching: Staying Flexible Without Becoming Overwhelmed](#))

All work can still be submitted after D2L Due Dates.

Just like with your groceries, I prefer to think of the dates I wrote as Best-By-Dates. Ideally, you keep my schedule. I put many deadlines on Fridays, but I will not be marking over the weekend, so every Friday date can be automatically extended to Monday morning at 9AM.

If you know you cannot meet the Best-By-Date, you can complete my Deadline Change Form (<https://bit.ly/F22Deadlines>) before the original deadline and I can plan your subsequent deadlines as needed.

Like other kinds of Best-By-Dates, if you wait too long, your work will be "stale" compared to the pace of the course: I might not be able to offer you feedback as quickly and you might not be able to apply feedback to subsequent work.

If you have read all the way to the end of Section 13, hurrah for you!

For extra credit, email me ([nicole.sandblom@ucalgary.ca](mailto:nicole.sandblom@ucalgary.ca)) a photo of something makes you smile:

a pet, a book, a song, a meme

Electronically Approved - Aug 31 2022 00:38

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**Department Approval**