Welcome to Fall 2023

Chemistry 301 **The Chemical World**

Feel free to save a copy of this unofficial outline for your use during the semester.
You can change the font, colours, etc.
The official signed version is in PDF form in D2L. Grey text is auto-populated into my outline by the Faculty of Science and the Department of Chemistry.

More importantly, if you would like to "Request edit access", you can also embed polite questions if you like as **Insert Comment** and tag me for a reply! @sandblomscience@gmail.com

OR just email me nicole.sandblom@ucalgary.ca

If you use an informative subject line that includes CHEM301, you will get the speediest reply.

1. Course: CHEM 301, The Chemical World - Fall 2023

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 MS 325

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

How can you reach me?

Email: nicole.sandblom@ucalgary.ca (you might also see 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

If you tell me that 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!

Let me know if there's something I can do to make the course more equitable and inclusive.

I typically try to run my courses with the rule: w*hen 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 due dates.
- 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 two 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.

An editable copy of this outline is available here: https://bit.ly/F23Outline including the *Detailed Syllabus* for Chemistry 301 that is provided at the end of this document in Section 13 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.

In-Person Delivery Details

We will use scheduled class time: we will use many Tuesday and Thursday times for in-person classes. A tentative planned calendar will be posted in D2L and is available here: https://bit.ly/F23Calendar. I planned for a *Catch-up or Get-ahead week* as a mini-break week for October 10-13, where you have **one drop-in class** and one brief activity and one brief survey. On November 21 and 28, I also planned for **drop-in classes**, where you can wrap-up coursework and ask questions.

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.

Back-up Planning: 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 L01-(Fall 2023)-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)

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[1]	14%	Ongoing		
Reflection and Feedback Activities: Peer Feedback[2]	8%	Ongoing		
Individual Assignments[3]	34%	Ongoing		
Team Activities[4]	10%	Ongoing		
Term Project[5]	34%	Ongoing		

1. Reflection and Feedback Activities: Learning Connections
See https://bit.ly/F23Calendar : *Aligned to Course Learning Outcome 4*. Goals *September 6 & 8* (4%); Mid-semester Learning Connections *October 13* (4%); Final Reflection *December 6* (6%)

2. Reflection and Feedback Activities: Peer Feedback
See https://bit.ly/F23Calendar : *Aligned to Course Learning Outcome 1.* ITP Metrics Written Feedback *October 12* (2%); Version 1 Peer Review *November 22* (4%); ITP Metrics Written Feedback *December 6* (2%)

3. Individual Assignments

See https://bit.ly/F23Calendar : *Aligned to Course Learning Outcomes 2-7.* Encountering Academic Integrity *September 15* (4%); Chemist Profile *October 6* (15%); Molecule *November 10* (15%)

4. Team Activities
See https://bit.ly/F23Calendar : *Aligned to Course Learning Outcomes 1-8*. Team Contract *September 22*(2%); In-class Activities all semester (8%): I plan to drop your 3 lowest scores

5. Term Project
See https://bit.ly/F23Calendar : *Aligned to Course Learning Outcomes 2-8*. Planning Activities: Topic

Survey *September 29* and Test your Proposal *October 17* (2%); Proposal Assignment *October 27* (6%); Showcase and Response to Reviewers *November 30* (2%); Final Version of Project *November 30* (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
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.

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. 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 or here https://bit.ly/F23Calendar. You can still submit after the *D2L Due Date* since these due dates are *Best-By-Dates*. See more information about my flexible policies 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:

In the event that a student legitimately fails to submit any online or in-person assessment on time (e.g. due to illness, domestic affliction, 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, or possible exemption and reweighing of components. Absences not reported within 48 hours will not be accommodated. Students may be asked to provide supporting documentation (Section M.1) for an excused absence, See FAQ.

Please see the detailed syllabus in Section 13 for more information about my flexible policies.

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 aids are allowed on tests or 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.

- **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 t o 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
- **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) or phone at403-220-2208. The complete University of Calgary policy on sexual violence can be viewed here.

d. Student Ombuds Office:

A safe place for all students of the University of Calgary to discuss student related issues, interpersonal conflict, academic and non-academic concerns, and many other problems.

e. Student Union Information:

SU contact, Email your SU Science Reps: science1@su.ucalgary.ca, science2@su.ucalgary.ca, science3@su.ucalgary.ca,

f. 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 preferably 10 business days before the due date of an assessment or scheduled absence.

g. 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 o f 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 theStudent Success Centre Academic Integrity page

h. 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.

i. 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.

j. 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.

in 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 the 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 Planning Steps leading to Proposal

First you will develop your topic choice and test your proposal before submitting this milestone Assignment that 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 due date 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 as part of your Peer Feedback Activities score.

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 two 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 21*. You might not be able to participate in the peer review if your work is not submitted on time and may forfeit the 4% for Version 1 Peer Review and part of the 2% for the Response to Reviewers.**

What about due dates?

Best-By-Dates description modified and used with permission from Joshua Eyler.
https://twitter.com/joshua_r_eyler/status/1427756768210337797?s=21

For most Assignments, I aim to balance being **fair** and **reasonable** about due dates. You might notice that I also included some due dates for myself on your calendar. Ideally, I won't need to penalize late work and I know that life happens during the semester. I think adding due dates 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)

How will this flexibility happen?

Most 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 due dates 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 *Due Date Modification Form* (https://bit.ly/F23DueDates) ideally before the original due date, and **at the latest 48 hours** after the original due date. You can modify the date up to the Stale Date. If you cannot meet your Modified Date, you can change it again by emailing me within 48 hours of the Modified Date. 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 your work is not submitted by the Stale Date, in most cases I will enter zero for that Assignment.

Assignment Name	D2L Due Date	Due Date Modification Form completed	Stale Date
Chemist Profile	October 6 11:59PM	October 8 11:59PM	October 23 9AM
Proposal	October 27 11:59PM	October 29 11:59PM	November 6 9AM
Molecule	November 8 11:59PM	November 10 11:59PM	December 6 9AM
Final Project	November 30 11:59PM	December 2 11:59PM	December 6 9AM

What about flexibility for Activities?

For Activities, I won't get you to modify dates. Many Activities will just be due during class. Other Activities submitted electronically will have D2L Due Dates and I am happy to accept your work until I return the feedback to the class, then I will enter zeroes. If your situation requires an extension, you should contact me within 48 hours of the D2L Due Date and we will work something out.

Which dates are not flexible?

Set due dates will be used for the following work for logistical reasons: ITPMetrics Team Formation Survey (September 18), ITPMetrics 1st Assessment (October 12), Test your proposal Activity (October 17), Version 1 of Project (November 21), Version 1 Peer Reviews (November 22), Response to Peer Reviewers (November 30), ITPMetrics Final Assessment (December 6). In most cases, I will enter zeroes for any of these missed gradebook items.

What if I really improve as the semester progresses?

I think part of being flexible involves options for final grade calculations. In addition to the official grading scheme in Section 3, I will calculate your grade in a few different ways and use your best score to determine your letter grade.

Work submitted	Section 3 Official Scores	Option 1	Option 2	Option 3
Chemist Profile	15%	0%	6%	18%
Molecule	15%	30%	30%	18%
Final Version of Term Project	24%	24%	18%	18%

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) a photo of something makes you smile: a pet, a book, a song, a meme

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