

# CHEM 1005 - Elementary Chemistry I

## Fall 2022

**Instructor:** Alyssa Nause

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*CHEM 1005 has returned to in-person lectures, tutorials and labs for the Fall 2022 term*

### Lecture Hours

*Lectures:* Tuesdays and Thursdays, 6:05PM to 7:25PM, **AT 302**

*Tutorials:* Thursdays, 9:05PM to 9:55PM EST, **AT 302**

### Contact

*Email:* [alyssa.nause@carleton.ca](mailto:alyssa.nause@carleton.ca)

Email is usually easiest for everyone, and often the fastest contact.

Please use your Carleton email account to make sure I realize who you are. Avoid leaving questions/concerns to the last minute though; it may take *a full day* to receive a reply.

*Office Hours:* TBD (see course Brightspace page for upcoming in-person and/or online office hour times)

*Check Brightspace often for updates, announcements and course material.*

### Textbook

**Recommended:** *CHEMISTRY* – Fourth Canadian Edition by Olmsted, Williams and Burk, published by Wiley, with a two-term access code to WileyPlus, a homework management system we will be using.

The book is available from Carleton's bookstore, or see more information in the "Textbook Choices for CHEM 1005" file on the course Brightspace page.

### Dates

- Midterm Test 1: Thursday, October 20<sup>th</sup>; **online, during lecture time**
- Midterm Test 2: Tuesday, November 22<sup>nd</sup>; **online, during lecture time**
- Final Exam: online, date and time to be scheduled by Examination Services
  - **The Final Exam Schedule should be released on/near October 7<sup>th</sup>\***

*\*December 2022 exam period is December 10<sup>th</sup> through 22<sup>nd</sup>, including weekends (keep this in mind if making any travel plans for the end of the term...maybe wait until the schedule is released to finalize them).*

A [full list of important dates](#) is available on the University Calendar website. Please note that the academic withdrawal dates have changed recently. Consult the Calendar website for the most updated information: <https://calendar.carleton.ca/academicyear>

## Grades

Laboratory 20% \*  
Online Assignments (WileyPlus): 20%  
Mid-term Test (x2, 15% ea.) 30% \*\*  
Final Exam 30%  
*Bonus assignments (adaptive, in WileyPlus): up to 5%*

\* All laboratory experiments **MUST** be completed to pass the course. If lab grade is “incomplete”, you will receive a course grade of F, regardless of your lecture-based grade.

\*\* If you miss a midterm test for any reason, the weight will be transferred to your final exam:

- 1 midterm missed = Final Exam weighted to 45%
- 2 midterms missed = Final Exam weighted to 60%

Grades for each component of the course will be released only through Brightspace.

## Laboratory

The lab portion of this course is separate from the lecture portion. All components of the lab material must be completed to complete the entire course. **If a lab grade of “incomplete” is given at the end of the term, the resulting course grade is an F, regardless of your grade for the lecture portion.**

All labs will be live and in-person for CHEM 1005 in the Fall 2022 term.

Labs will begin the week of September 12<sup>th</sup>. Read and follow the instructions provided by your Lab Coordinator (Mastaneh Azad or Natalie Mesnic) on the course Brightspace page (*including the tasks that must be completed before your first in-person session!*).

## Assignments (WileyPlus and ORION)

Short online WileyPlus assignments will be posted for each topic. Each of the seven Topics' assignments will be equally weighted. The due dates for WileyPlus Assignments will align to shortly after that Topic's lecture material is completed.

Bonus marks can be earned with online bonus assignments (Adaptive Assignments in WileyPlus). Each of the seven Topic's bonus assignment will be equally weighted. The due dates for Bonus Assignments will permit use as extra review/studying for midterms or the final exam (i.e. they are grouped for the content of each exam).

Due dates for both assignment types are posted with the assignments on Brightspace.

## Practice Questions

Lists of good practice questions to complete from your textbook will be posted on Brightspace (for both the Fourth and Third Editions of the textbook), with additional practice questions also set up through WileyPlus.

I will also provide some practice questions separate from those in your textbook and WileyPlus, some of which will be reviewed during the tutorial sessions.

## Midterm Tests

The online midterm tests will be marked and manually reviewed, and the grades released approximately two weeks after the test was written. Any concerns regarding the returned grades/online grading must be reported to me *before* the next test.

*Remember: If you miss one midterm, your final exam will make up 45% of your course grade; missing both midterms makes the final exam 60% of your course grade.*

## Academic Accommodation or Special Arrangements

### Requests for Academic Accommodation

You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes can be found here: <https://students.carleton.ca/course-outline/>

## Syllabus

*Approximate order of topics below, subject to change as time permits.*

Topic 1: Measurements and Math in Chemistry (*Textbook Chapter 1 and Appendix A*)

- Notation
- Error
- Counting and Conversions

Topic 2: Building Blocks for Reactions and Solutions (*Textbook Chapter 1*)

- Balancing Equations
- Stoichiometry

Topic 3: Periodicity (*Textbook Chapters 4 and 5*)

- Light and Atoms
- Electrons and Quantum Numbers
- Atomic Orbitals and the Periodic Table
- Atomic Properties

Topic 4: Bonding (*Textbook Chapters 6 and 7*)

- Lewis Structures
- VSEPR Model and Geometry
- Hybridization of Atomic Orbitals

Topic 5: Gases (*Textbook Chapter 2*)

- Describing Gases
- Mixtures and Stoichiometry
- Ideal and Non-Ideal Gases

Topic 6: Equilibrium (*Textbook Chapter 14*)

- Equilibrium Constants
- Shifts in Equilibrium
- Working with Equilibria

Topic 7: Organic Chemistry (*Textbook Chapter 10*)

- Hydrocarbons
- Functional Groups
- Intro to Stereochemistry and Reactions