

CHEM 1013: General Chemistry 1

September 7, 2022

Lectures			Location
Section 1013-FA01	John Murimboh	M/W/F: 8:30am – 9:30am	ELL 207
Section 1013-FA02	Cathy Murimboh	M/W/F: 9:30am – 10:30am	CAR 203
Section 1013-FA03	Martin Sichinga	M/W/F: 10:30am – 11:30am	ELL 207
Section 1013-FA04	Amitabh Jha	M/W/F: 11:30am – 12:30pm	UH 201
Office Hours	Instructor	Email	Location
M: 1:00 – 4:00pm	Martin Sichinga	martin.sichinga@acadiau.ca	ELL 314
T: 1:00 – 4:00pm	Cathy Murimboh	catherine.murimboh@acadiau.ca	ELL 211
W: 1:00 – 4:00pm	Amitabh Jha	amitabh.jha@acadiau.ca	ELL 120
Th: 1:00 – 4:00pm	John Murimboh	john.murimboh@acadiau.ca	KCI 034
Th: 9:30 – 11:30am (labs)	Ashley Parsons	ashley.parsons@acadiau.ca	ELL 215
Chemistry Help Centre			Location
Mon/Tue/Wed: 6:00 – 9:00pm			ELL 303
Restrictions			
Pre-requisite	Nova Scotia grade 12 chemistry or equivalent with 60% or better		
Textbook			
Chemistry: A Molecular Approach (3 rd Canadian Edition) Tro, Nivaldo J., Travis Fridgen, and Lawton Shaw Pearson Canada, 2019 Note: any edition is also acceptable			
Alternate Textbooks			
I. Principles of General Chemistry v1.0 (Averill and Eldredge) [HTML]			
II. Chemistry Virtual Textbook (Stephen Lower, Simon Fraser University) [HTML]			
III. Any first-year chemistry textbook			

LEARNING, TEACHING, AND ASSESSMENT INFORMATION

Assessment		
Labs	20%	
Assignments	10%	Best 10 Assignments
Midterm 1	10%	Thursday, September 29, 2022, 7:00pm
Midterm 2	10%	Thursday, October 20, 2022, 7:00pm
Midterm 3	10%	Thursday, November 17, 2022, 7:00pm
Final Exam	40%	
Total	100%	
<p>Students with a valid excuse (e.g. illness) must contact their instructor at least one hour prior to the start of the midterm, complete the Declaration of Cause form, and submit to the Registrar's Office in person, by fax, by mail, or by email. The weight of the midterm will be transferred to the final exam. Students who miss all three midterms, regardless of the reason, will receive a failing grade in the course.</p>		

Labs

Lab Instructor: Ashley Parsons, ashley.parsons@acadiau.ca, ELL 215

Monday – Friday: 1:00 – 4:00pm (ELL 204, 206)

Prelab (ELL 207)

Attendance is required for all scheduled laboratories. This includes all laboratory activities, including pre-lab meetings. Absences during laboratory time will be categorized as either 'excused' or 'unexcused'. Unexcused absences will result in a grade of zero for that laboratory session. A student who is absent for three (3) labs, with any combination of excused and/or unexcused absences per course, will receive a failing laboratory grade. The laboratory is an integral part of the course. **You must earn a passing grade in the laboratory to pass the course.**

The penalty for late lab reports is a deduction of 10% to a maximum of 4 days.

See the lab ACORN page [CHEM 1010L/1110L FA01 CHEM 1013 Laboratory 2022 Fall](#) for more details.

Lab Manual and Safety Glasses: Purchase from the Chemistry Club (Elliott Hall Lobby)
Sept. 7 – Sept. 16, 12:30 – 1:00pm, lab manuals: \$15, safety glasses: \$5, oversize safety glasses: \$7

Lab Coats and Notebooks: Available at the Acadia University Bookstore.

Assignments

Due: Thursdays at 11:30pm (NO EXCEPTIONS)
via ACORN

Late assignments automatically receive a grade of zero. There are no exceptions, including illness or power failures. i.e. Do not wait until the last minute to work on the assignments!

Course Description

An introductory treatment of the fundamentals of chemistry: atoms, molecules, ions, chemical equations, stoichiometry, enthalpy, electronic structure and periodic properties of the elements, chemical bonding, and molecular structure, acids and bases, and gases.

Assessment will be by assignments, examination, and submission of laboratory reports.

Topics

Unit 1: Fundamentals (Review)

Unit 2: Atomic Theory

Unit 3: Periodic Trends

Unit 4: Lewis Structures

Unit 5: Intermolecular Forces

Unit 6: Hybridization

Unit 7: Acids and Bases

Unit 8: Salts, Buffers, and Titrations

Unit 9: Gases

Unit 10: Nuclear Chemistry

Learning Outcomes

Content-Specific

- Proficiently be able to a) name compounds, (b) balance chemical reactions, and (c) perform unit conversions, making proper use of prefixes and significant figures.
- Describe and apply: (a) the Bohr and quantum mechanical models of the atom, (b) electron configurations of atoms and ions, and (c) periodic trends using the Periodic Table.
- Write Lewis structures based on chemical formulae and use them to predict molecular shape and properties of molecules.
- Apply the necessary equations to qualitatively and quantitatively describe (a) stoichiometric relationships, (b) acid-base reactions involving strong and weak acids and bases, salts, buffers, and titrations, (c) ideal gases, and (d) nuclear chemistry.

Scientific Practices and Critical Thinking Skills

- Formulate strategies for solving a problem and investigating the properties of a chemical system.
- Draw conclusions that are appropriate given the information provided, for example, by recognizing whether calculations or conclusions "make sense".
- Combine knowledge of different chemical processes to understand and characterize chemical systems.
- Solve problems in chemistry while following standard practices such as reporting the correct number of significant figures, using appropriate units, notation, and symbols, sketching diagrams, making and stating appropriate approximations and simplifications, and comparing results with other known quantities.
- Recognize appropriate methods to analyze data and evaluate the significance of experimental results.

Laboratory and Technical Skills

- Practice and identify safety rules and procedures specific to a chemical compound, experimental procedure, or work environment, including wearing personal protective equipment.
- Demonstrate care in basic laboratory and chemical handling skills, including following procedures correctly, using balances and common glassware, transferring material with the accuracy and precision required by the experiment, preparing solutions, and identifying potential sources of error.
- Dispose of laboratory waste properly and demonstrate knowledge of common waste streams.
- Prepare and maintain a laboratory notebook that has enough detail that another person could reproduce the experiment.

Communication Skills

- Write about chemistry with clarity and in an organized way; use correct terminology while avoiding unnecessary jargon; and accurately summarize scientific information from relevant and reputable sources.
- Present scientific data using graphics and tables so that it is clear, has appropriate units, and accurately represents the data (including error where appropriate).
- Work effectively and efficiently with others, for example, by establishing roles and responsibilities.

Professional Skills, Scientific Attitudes, and Learning Strategies

- Demonstrate ethical standards in presenting data and work accurately as one's own, for example, by avoiding plagiarizing.
- Make informed decisions about contemporary issues related to chemistry by being objective, data-driven, and open to new ideas.
- Effectively prepare for in-class and laboratory learning by completing readings, assignments, and other homework and by reviewing course notes from previous lectures.
- Review feedback on course assignments to learn from mistakes and to understand where improvement can be made.
- Be more confident in discussing and seeking information to better understand chemistry-related issues.
- Self-identify as a scientist.

OTHER DETAILS

Accessible Learning Services

If you are a student with documentation for accommodations or if you anticipate needing supports or accommodations, please contact Gillian Hasteley (Accessibility Resource Facilitator) or Marissa McIsaac (Manager) at 902-585-1823, accessible.learning@acadiau.ca. Accessible Learning Services is located in Rhodes Hall, rooms 111-115.

Equity and Diversity

Acadia University is committed to becoming a culturally safe and anti-oppressive community. This can only be achieved where there are simultaneous efforts to eliminate all forms of discrimination and harassment from our campus community, including the elimination of all discrimination, harassment and violence based on one's identity, including but not limited to, gender, race, class, ethnicity, sexual orientation, disability, gender identity, gender expression, and Indigeneity.

The Equity, Diversity and Inclusion Officer is available to **students, staff, and faculty**. The fundamental objective of the Equity Office is to **prevent discrimination, sexual harassment, and personal harassment** from occurring, in part by managing [Acadia's Policy Against Harassment and Discrimination](#). For more information, as well as for resources for students who believe they may have experienced or witnessed discrimination, sexual harassment, or personal harassment please contact Acadia's Equity, Diversity and Inclusion Officer, Polly Leonard, MSW, RSW (she/her/hers) at equity@ACADIAU.CA, and check out the [website](#).

Academic Integrity

It is your responsibility to acquaint yourself with the university policy on academic integrity. Academic dishonesty such as cheating and plagiarism are not tolerated. Any form of academic dishonesty in examinations, tests, labs, or assignments is subject to serious academic penalty. The full description of the penalties associated with academic dishonesty is outlined in the 2020/2021 Academic Calendar.

- Cheating is copying or the use of unauthorized aids or the intentional falsification or invention of information in any academic exercise
- Plagiarism is the act of presenting the ideas or words of another as one's own. Students are required to acknowledge and document the sources of ideas that they use in their written work.
- Self-plagiarism is also a form of plagiarism. It is the presentation of the same work in more than one course without the permission of the instructors involved.
- A student who knowingly helps another to commit an act of academic dishonesty is equally guilty.
- Penalties are levied in relation to the degree of the relevant infraction. They range from failure on that piece of work, to failure in the course, to dismissal from the university.