Course Outline
CHEM 1023: General Chemistry 2, Winter 2020

Lectures			Location
Section 1023A2:	Dr. Vlad Zamlynny	M/W/F: 8:30am – 9:30am	ELL 207
Section 1023B2:	Cathy Murimboh	M/W/F: 9:30am – 10:30am	BAC 236
Section 1023C2:	Dr. Anthony Tong	M/W/F: 10:30am – 11:30am	ELL 207
Section 1023D2:	Dr. Anthony Tong	M/W/F: 11:30am – 12:30pm	HSH 173

Office Hours	Instructor	Email	Location
Mon., 1:00-4:00	Dr. Vlad Zamlynny	vlad.zamlynny@acadiau.ca	ELL 118
Tues., 1:00-4:00	Cathy Murimboh	catherine.murimboh@acadiau.ca	ELL 211
Wed., 1:00-4:00	Dr. Anthony Tong	anthony.tong@acadiau.ca	ELL 304
Labs	Ashely Parsons	ashley.parsons@acadiau.ca	ELL 215

Textbook
Chemistry: A Molecular Approach (3rd Canadian Edition)
Tro, Nivaldo J., Travis Fridgen, and Lawton Shaw
Pearson Canada, 2019
Note: older editions are also acceptable

Alternate Textbooks
1. Principles of General Chemistry v1.0 (Averill and Eldredge) [HTML]
2. Chemistry Virtual Textbook (Stephen Lower, Simon Fraser University) [HTML]
3. Any first-year chemistry textbook

LEARNING, TEACHING, AND ASSESSMENT INFORMATION

Assessment		
Labs	20%	
Assignments	10%	Best 10 Assignments
Midterm 1	10%	Thursday Jan. 30, 2020
Midterm 2	10%	Thursday Feb. 27, 2020
Midterm 3	10%	Thursday March 19, 2020
Final Exam	40%	TBA
Total	**100%**	
Students with a valid excuse (e.g. illness) must contact their instructor at least one hour prior to the start of the midterm to be excused. 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.**		

Labs

Lab Instructor: Ashley Parsons, ashley.parsons@acadiau.ca, ELL 215
Monday-Friday: 1:30-4:30 pm (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 1020L A1-E1 CHEM 1023 LABORATORY [2019-20]) for more details.

Lab Manual, Glasses, and Gloves: Purchase from the Chemistry Club (Elliott Hall Lobby)
Jan. 6-10th, 12:30-1:30 pm. Cash only!

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

Assignments

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

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!

Topics

Unit 1: Kinetics
Unit 2: Thermochemistry
Unit 3: Spontaneity
Unit 4: Chemical Equilibrium
Unit 5: Electrochemistry
Unit 6: Phase Equilibrium and Solutions
Unit 7: Solids

Learning Outcomes	
Knowledge and understanding	1. Calculate the relative rates of change of reactant/product concentrations 2. Determine reaction order using the method of initial rates 3. Use integrated rate laws to calculate reactant concentrations or time elapsed 4. Use the Arrhenius equation to determine rate constants at a different temp. 5. Understand and label energy profile diagrams 6. Calculate heat transfer, work, and total internal energy of a system 7. Use heating/cooling curves to find total heat transferred to/from a substance 8. Calculate $\Delta_rH°$ using Hess' Law, bond dissociation enthalpies, and stoichiometry 9. Use coffee cup calorimetry and bomb calorimetry 10. Calculate lattice energy or enthalpy of reaction using the Born-Haber cycle 11. Compare the relative standard entropies of various substances 12. Calculate standard entropy change and standard Gibbs energy change 13. Predict the direction of a reaction under a given set of conditions 14. Interconvert between $\Delta G°$ and K; ΔG and Q 15. Use ICE tables to calculate concentrations or K 16. Calculate the solubility of a salt and determine if pH affects its solubility 17. Predict the effect of various stresses on the equilibrium position 18. Balance redox reactions 19. Represent an electrochemical cell using short-hand notation 20. Calculate $E°_{cell}$, $\Delta G°$ and K for an electrochemical cell 21. Calculate E_{cell} for an electrochemical cell with non-standard concentrations 22. Calculate vapour pressure or boiling point with Clausius-Clapeyron equation 23. Understand and label phase diagrams 24. Calculate solubility of a gas in a liquid using Henry's Law 25. Quantify colligative properties: vapour pressure lowering, boiling point elevation, freezing point depression, osmotic pressure

OTHER DETAILS

Accessible Learning Services
If you are a student with documentation for accommodations or if you anticipate needing supports or accommodations, please contact Marissa McIsaac, Accessibility Resource Facilitator at 902-585-1520, disability.access@acadiau.ca or Emily Duffett, Accessibility Officer, disability.access@acadiau.ca. Accessible Learning Services is located in Rhodes Hall, rooms 111-115.

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 2018/2019 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.