



CAMOSUN COLLEGE
School of Arts & Science
Department of Chemistry & Geoscience

CHEM-120-002
College Chemistry 1
W2018

COURSE OUTLINE

The course description is online @ <http://camosun.ca/learn/calendar/current/web/chem.html>

* Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.

1. Instructor Information

| | |
|------------------|--|
| (a) Instructor | Dr. Steve McKinnon |
| (b) Office hours | See Schedule or by appointment |
| (c) Location | Fisher 348A |
| (d) Phone | 250-370-3472 Alternative: _____ |
| (e) E-mail | mckinnons@camosun.bc.ca |
| (f) Website | D2L |

2. Intended Learning Outcomes

(If any changes are made to this part, then the Approved Course Description must also be changed and sent through the approval process.)

Upon completion of this course the student will be able to:

1. Utilize nomenclature rules to name ionic and covalent compounds.
2. Demonstrate an understanding of stoichiometry by balancing chemical equations and performing mathematical calculations involving chemical reactions.
3. Describe the electronic structure of any atom in the periodic table and apply it to explain many of the physical and chemical properties of the elements.
4. Utilize simple bonding theories to explain why elements combine to form the compounds they do and also to explain many of the properties of compounds.
5. Apply knowledge of intermolecular interactions to rationalize many important physical properties of bulk matter in the gas, liquid and solid phases.
6. Use standard chemistry lab equipment, including burets, pipets, Buchner filters, and volumetric glassware in the correct manner.
7. Perform many standard laboratory procedures, such as titrations, preparation of standard solutions, the preparation, isolation, and purification of compounds, as well as use spectrophotometers to make analytical measurements.

3. Required Materials

- (a) **Mastering Chemistry Course Code.** \$50 Access Code can be purchased from the Pearson Website <http://www.pearson.com.au/9781442563902> or the bookstore (\$75). If you choose to purchase a new textbook or ebook (see below) then a Mastering Chemistry Course Code is included. (valid for 24 months after activation).

- (b) Lab Experiments: Chemistry 120 Laboratory Manual, (In-house)
- (c) Safety Glasses

Other Recommended Materials

CHEMISTRY, The Central Science: a Broad Perspective” by Brown, Lemay, Bursten, Langford, Sagatys, and Duffy. Prentice Hall, Australian 3rd edition.
 \$145 (Hard copy with access code)
 \$114 (ebook with access code)

The 1st and 2nd editions or other texts are also acceptable, but you will still need to purchase a **Mastering Chemistry access code**.

4. Course Content and Schedule

| Lecture Plan: | |
|------------------------------------|---|
| Textbook chapter (Brown at al.) | Topic (approximate number of hours) |
| 2-4 | Review of selected topics (6) |
| 6 | Electronic structure of atoms (7-8) |
| 7 | Periodic properties of the elements (3) |
| 8 | Basic concepts of chemical bonding (3-4) |
| 9 | Molecular geometry & bonding theory (3) |
| 10 | Gases (3-4) |
| 11 | Intermolecular forces, liquids and solids (3) |
| 12 | Solutions (3) |
| 13 | Chemistry of the environment (3) |

5. Basis of Student Assessment (Weighting)

| | | |
|---------------------|----------------|-----|
| (a) Midterm Test I | (L.O. 1 and 2) | 10% |
| (b) Midterm Test II | (L.O. 3 – 5) | 15% |
| (c) Final Exam | Cumulative | 35% |
| (d) Laboratory | (L.O. 6 and 7) | 25% |
| (e) MyLabMastering | Online | 15% |

Notes

- Students must complete a minimum of 70% of the laboratory work to pass the laboratory component of Chem 120. Students must pass the laboratory portion (>50%) of the course in order to obtain credit for Chem 120.
- A test score that is not as high as that of the April final exam will be dropped automatically and its weight redistributed to the final exam. For anyone who misses both tests, your final exam will then be 60% of the course grade.
- Students must write each test as scheduled. No one is allowed to write late and there will be no exceptions. Early exam is a privilege and not a right, at full discretion of the instructor.

Important Dates

Feb 8 (Thurs): **Test I 9:30-11:00am in Lab**
Feb 12-16: Reading Break
Mar 15 (Thurs): **Test II 9:30-11:00am in Lab**
Mar 30 (Fri): Good Friday
Apr 2 (Mon): Easter Monday

Final Exam Period: April 16 - 24

See Camosun website for information on fee and drop deadlines.

<http://camosun.ca/learn/fees/#deadlines>

6. Grading System

(If any changes are made to this part, then the Approved Course description must also be changed and sent through the approval process.)

(Mark with "X" in box below to show appropriate approved grading system – see last page of this template.)

Standard Grading System (GPA)

Competency Based Grading System

7. Recommended Materials to Assist Students to Succeed Throughout the Course

8. College Supports, Services and Policies



Immediate, Urgent, or Emergency Support

If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), **SEEK HELP**. Resource contacts @ <http://camosun.ca/about/mental-health/emergency.html> or <http://camosun.ca/services/sexual-violence/get-support.html#urgent>

College Services

Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the **STUDENT SERVICES** link on the College website at <http://camosun.ca/>

College Policies

Camosun strives to provide clear, transparent, and easily accessible policies that exemplify the college's commitment to life-changing learning. It is the student's responsibility to become familiar with the content of College policies. Policies are available on the College website at <http://camosun.ca/about/policies/>. Education and academic policies include, but are not limited to, Academic Progress, Admission, Course Withdrawals, Standards for Awarding Credentials, Involuntary Health and Safety Leave of Absence, Prior Learning Assessment, Medical/Compassionate Withdrawal, Sexual Violence and Misconduct, Student Ancillary Fees, Student Appeals, Student Conduct, and Student Penalties and Fines.

A. GRADING SYSTEMS <http://camosun.ca/about/policies/index.html>

The following two grading systems are used at Camosun College:

1. Standard Grading System (GPA)

| Percentage | Grade | Description | Grade Point Equivalency |
|------------|-------|--------------------------------------|-------------------------|
| 90-100 | A+ | | 9 |
| 85-89 | A | | 8 |
| 80-84 | A- | | 7 |
| 77-79 | B+ | | 6 |
| 73-76 | B | | 5 |
| 70-72 | B- | | 4 |
| 65-69 | C+ | | 3 |
| 60-64 | C | | 2 |
| 50-59 | D | | 1 |
| 0-49 | F | Minimum level has not been achieved. | 0 |

2. Competency Based Grading System (Non GPA)

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes

| Grade | Description |
|-------|---|
| COM | The student has met the goals, criteria, or competencies established for this course, practicum or field placement. |
| DST | The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement. |
| NC | The student has not met the goals, criteria or competencies established for this course, practicum or field placement. |

B. Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at <http://camosun.ca/about/policies/index.html> for information on conversion to final grades, and for additional information on student record and transcript notations.

| Temporary Grade | Description |
|-----------------|---|
| I | <i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family. |
| IP | <i>In progress:</i> A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course. |
| CW | <i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement. |

Winter 2018 Lab Schedule

Chem 120-002 – Thursdays, 9:30-12:20 in Fisher 356

| Week Number Begins on | Activity & Experiment Number | Actual Date of Lab Thursday |
|--|--|---------------------------------------|
| I Jan 8 th | Intro and Safety Orientation - Mandatory | Jan 11 th |
| II Jan 15 th | Expt. 2 - Densities of Solids & Liquids | Jan 18 th |
| III Jan 22 nd | Expt. 3 - Stoichiometry of Chemical Reactions— Gp A | Jan 25 th |
| IV Jan 29 th | Expt. 3 - Stoichiometry of Chemical Reactions— Gp B | Feb 1 st |
| V Feb 5 th | Test I in Lab (1.5 hours) | Feb 8 th |
| VI Feb 12 th | Family Day / Reading Break | Feb 15 th |
| VII Feb 19 th | Expt. 4 - Spectroscopic Determination of [Ni ²⁺] in Aqueous Solution | Feb 22 nd |
| VIII Feb 26 th | Expt. 5 - Spectrophotometric Determination of Iron | Mar 1 st |
| IX Mar 5 th | Expt. 6 - Determination of Copper Using Atomic Absorption Spectroscopy | Mar 8 th |
| X Mar 12 th | Test II in Lab (1.5 hours) | Mar 15 th |
| XI Mar 19 th | Expt. 7 - Determination of the Total Hardness of Water Using E.D.T.A. | Mar 22 nd |
| XII Mar 26 th | Expt. 8 - Molecular Shapes & VSEPR Lecture | Mar 29 th |
| XIII Apr 2 rd | Expt. 9 - The Preparation of Potassium Tris(oxalato)Ferrate(III) | Apr 5 th |
| XIV Apr 9 th | Expt. 10 - Analysis of Potassium Tris(oxalato)Ferrate(III) | Apr 12 th |
| Final Exam Period - Apr 16 – 24 | | |

Note: This is only a preliminary lab schedule, changes will be made due to equipment &/or glassware problems, or rescheduling of tests...

Eye protection is mandatory!!