



Chem 1027A Course Outline

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If you need technical assistance with OWL, seek support on the OWL Help page. Alternatively, contact the Western Technology Services Helpdesk by phone at 519-661-3800.

Course Materials

There is no required textbook for the course. In addition to the lecture notes, any required resource will be posted to the OWL site for your reference.

A simple calculator may be used for midterms and final exam, but no smart phones.

Crib Sheet

A crib sheet is allowed on the midterms and final exam. Rules for the crib sheet:

- Must be entirely *handwritten*, no computerized graphics or text. You may write on a tablet and make a print copy.
- For each midterm and the final exam one 8.5 x 11 inch piece of paper is allowed. That is one sheet of paper in total.

Use of Generative AI

You may use use generative artificial intelligence (AI) tools/software/apps in completing your assignments, but the final result submitted should be your own.

Class Topics

The lecture component will introduce students to the fundamentals of chemistry and explore various relevant topics to make connections to the chemical world around us. The tentative topics below will be explored and may change slightly based on timing of material covered each week.

1 The Chemical Perspective

Atomic scale, measurements, scientific notation, SI-units, unit conversions, scientific review

2 Matter: Atoms and Molecules

The periodic table, groups, elements, atomic structure, isotopes, mass spectroscopy, hydrocarbons, line drawings, allotropes, supercritical fluids

3 Matter and Energy

Changes in physical and chemical properties, states of energy, laws of conservation, balanced chemical equations

4 Organic Molecules

What organic means, carbon sources, combustion reactions, isomers, uses of petroleum

5 Plastics

Plastic utility, synthesis, composition, properties, recycling and disposal

6 Bioorganic Molecules

Hydrogen bonding, proteins, lipids (triglycerides, phospholipids, terpenes, steroids), detergents, carbohydrates, nucleic acids, COVID-19 vaccine

7 Electromagnetic Energy

Electromagnetic radiation, quantum mechanics, IR spectroscopy, UV-visible spectroscopy, NMR spectroscopy, x-ray crystallography, chromophores, Jablonski diagrams, greenhouse gasses and

Key Dates

Sept 5	Classes begin
Sept 10	Assignment 1. Reflection 1
Sept 30	No Class. National Day for Truth and Reconciliation (observed at Western)
Oct 4	Assignment 2
Oct 12 – 20	No Class. Reading Week
Oct 25	Midterm 1
Nov 1	Assignment 3
Nov 15	Midterm 2
Nov 22	Assignment 4
Nov 29	Assignment 5, Reflection 2 becomes available on OWL
Dec 6	Assignment 6. Reflection 2. Last day of class
Dec 10 – 22	Examination Period (schedule TBA by Registrar)

Contingency Plan

Although the intent is for this course to be delivered in person, should any university-declared emergency require some or all of the course to be delivered online, either synchronously or asynchronously, the course will adapt accordingly. The grading scheme will not change. Any assessments affected will be conducted online as determined by the course instructor.

Evaluation

Uploading PDF's and Scanning. All documents uploaded to OWL must be in pdf format. Documents that can not be generated as a pdf (such as something drawn by hand) must be scanned. Photos will not be accepted. If you don't have a scanner, then use the document scanning feature in a smartphone app such OneDrive or Dropbox. OneDrive is free from the University as part of your Office 365 suite.

Late submissions: *Assignments* and *reflections* will not be accepted after the due date (see below).

Midterms and Final Exam

The midterm tests will take place in-class on Oct 25 and Nov 15. Students will have *45 minutes* to complete the test. The midterm exam is a closed-book assessment except for the allowed crib sheet described above and a simple calculator. The exam may consist of any of the following types of questions: calculations, multiple choice, true or false, matching and/or short answer questions. The weight of a missed midterm with academic accommodation will be added to the final exam.

The final exam is cumulative and will take place during the scheduled final examination period from December 9th - 22nd, 2024. You will have 3 hours to complete the final exam. You may use a simple calculator and the crib sheet described above. The exact date, time and location will be posted by the registrar.

Use of Electronic Devices

Only basic scientific calculators (that cannot connect to the internet) are permitted on tests and exams. All other electronic devices (cell phones, laptops, tablets, cameras, etc.) are prohibited. Students found in possession of prohibited devices will receive a mark of ZERO for the entire test or exam.

Conditions Required to Pass the Course

Students must receive a passing grade of 50% or higher on the final exam and an overall grade of 50% or higher. Students who fail to take the final exam will receive an F (40%) even if the calculated score is higher.

Absences

If you miss ANY component of the evaluation, regardless of its weight, due to illness or other serious circumstances and wish to be excused, you must provide valid medical or supporting documentation to the Academic Counselling Office of your Faculty of Registration as soon as possible.

For further information, please consult the University's medical illness policy at:
https://www.uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration.pdf

The Student Medical Certificate is available at:
https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf

The general academic policy is available here:

https://uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration_Sep24.pdf

Students should note that individual *instructors are not permitted to receive documentation directly from a student*, whether in support of an application for consideration on medical grounds, or for other reasons. All documentation required for absences must be submitted to the Academic Counselling unit or Dean's Office of your home faculty or affiliated college.

Assessments worth less than 10% of the overall course grade:

With academic accommodation a missed *assignment* will be reweighed over the average of the other *assignments* or the other *reflection*. Without accommodation missed *assignments* and *reflections* will receive a grade of zero.

Assessments worth 10% or more of the overall course grade:

Missed midterm exams will be weighted to the final exam with academic accommodation. Without accommodation a missed midterm will receive a grade of zero.

Missed Final Exs ~~seiv~~.hn227TjMC P MICID 14 BDC 7T4 1 Tf-23.45-78 53.826.52 Tm3sP MICID 14

Accommodation Policies

Students with disabilities are encouraged to contact Accessible Education, which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf

