

SAMPLE COURSE OUTLINE**Course Code, Number, and Title:**

CHEM 2100: Science Projects

Course Format:

[Course format may vary by instructor. The typical course format would be:]

Lecture 1 h + Seminar 1 h + Lab 4 h

Credits: 4

Transfer credit: For information, visit bctransferguide.ca

Course Description, Prerequisites, Corequisites:

This course is intended for students who want an applied experiential learning opportunity which will build practical skills valued by employers, and be of use to subsequent academic studies. Each student is assigned a unique science project, typically based on an industry or non-profit identified need. Students are responsible for understanding the problem, designing experiments to approach the problem, performing bench experiments, interpreting the results, and preparing a written and oral report.

Prerequisites: Chemistry 1220 or permission from the instructor

Learning Outcomes:

Upon successful completion of this course, students will be able to:

- Clarify the objective of an assigned problem
- Locate, analyze and summarize relevant research from literature that addresses similar problems
- Predict a controlling variable that will affect the physical system under study
- Design experiments to ascertain the effect of a variable change on a physical system
- Schedule proposed laboratory time with course supervisor
- Explain the purpose of instrument calibration
- Perform instrument calibration
- Prepare appropriate blanks and controls
- Record experimental data according to accepted professional standards
- Organize and manipulate experimental data so as to demonstrate the effect of the changed variable
- Propose a theoretical basis for the observed effect of a variable change on a physical system
- Present experimental results and conclusions in written form according to scientific literature standards, including citations
- Orally present results and conclusions
- Defend proposed connections between observations and conclusions
- Critique draft reports of colleagues

snəwəyət leləm Langara College acknowledges that we are located on the unceded territory of the Musqueam people.

Instructor(s): TBA

Office: TBA **Phone:** 604 323 XXXX **Email:** TBA

Office Hours: TBA

Textbook and Course Materials:

[Textbook selection may vary by instructor. An example of texts and course materials for this course might be:]

For textbook information, visit https://mycampusstore.langara.bc.ca/buy_courselisting.asp?selTerm=3|8

Note: This course may use an electronic (online) instructional resource that is located outside of Canada for mandatory graded class work. You may be required to enter personal information, such as your name and email address, to log in to this resource. This means that your personal information could be stored on servers located outside of Canada and may be accessed by U.S. authorities, subject to federal laws. Where possible, you may log in with an email pseudonym as long as you provide the pseudonym to me so I can identify you when reviewing your class work.

Assessments and Weighting:

Final Exam %

Other Assessments %

(An example of other assessments might be:) %

Lab work: 30%

Project: 40%

Portfolio: 30%

There is no final exam because this is a project based course

Proportion of individual and group work:

Individual: 60%

Group: 40%

Grading System: Letter grade

Specific grading schemes will be detailed in each course section outline.

Passing grade: C-

Topics Covered:

[Topics covered may vary by instructor. An example of topics covered might be:]

Week 1: Introduction. Nature, operation, expectations of course. Introduction to approaches to research in industry, non-disclosure agreements, intellectual property concepts.

This generic outline is for planning purposes only.

Week 2: Basic bench, analytical equipment, note taking techniques. Projects assigned.

Week 3: Hands on equipment familiarization with concepts such as calibration, blanks, controls and signal-to-noise explored. Students begin literature search related to their projects.

Week 4: Continuation of equipment familiarization. Students report on results of literature search and describe experimental approach to problem solution. Feedback from instructor.

Week 5: Finalization of project design.

Week 6: Bench work on projects. Progress reports and feedback.

Week 7: Bench work on projects. Progress reports and feedback.

Week 8: Bench work on projects. Progress reports and feedback.

Week 9: Bench work on projects. Progress reports and feedback.

Week 10: Data review and processing. Preparation of written and oral reports.

Week 11: Data review and processing. Preparation of written and oral reports. Draft written reports submitted.

Week 12: Oral presentations and re-write of reports.

Week 13: Oral presentations and final reports submitted.

Exam period: Portfolio assembled, including all lab notes, progress reports, final report and presentation

As a student at Langara, you are responsible for familiarizing yourself and complying with the following policies:

College Policies:

[E1003 - Student Code of Conduct](#)

[F1004 - Code of Academic Conduct](#)

[E2008 - Academic Standing - Academic Probation and Academic Suspension](#)

[E2006 - Appeal of Final Grade](#)

[F1002 - Concerns about Instruction](#)

[E2011 - Withdrawal from Courses](#)

Departmental/Course Policies:

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