

**Faculty of Science Course Syllabus**  
**Department of Chemistry**

*Chemistry 3801*  
*Experiential Learning in Chemistry*  
*Winter, 2019*

- Coordinator:** Dr. Peter D. Wentzell  
Room 511, Chemistry Ph. 494-3708 e-mail: peter.wentzell@dal.ca
- Supervisor:** To be arranged by student. The supervisor directs the student's learning experience and is responsible for assisting the student in achieving the learning outcomes. The supervisor is normally a faculty member from the Department of Chemistry, but may be a faculty member from another department or a senior staff member from a government or private laboratory, provided they can direct a suitable chemistry-related learning experience.
- Format:** There are no formal lectures for this class. The student and the supervisor will arrange a mutually acceptable schedule for the student's activities related to the course, including laboratory work and meetings. This should represent a minimum of 72 hours (total) of meaningful learning experience and at least 6-8 hours per week.
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**Course Description (from calendar)**

This is an outside-the-classroom learning experience in which students work to acquire knowledge and skills relevant to chemistry under the direction of a supervisor. Suitable work environments can be located at Dalhousie or in a commercial/industrial setting.

**Course Prerequisites**

At least four of the following courses are required: CHEM 2101, CHEM 2201, CHEM 2301, CHEM 2304, CHEM 2401 and CHEM 2402. (In special cases, permission may be given by the coordinator when this condition is not met.)

**Restrictions/Exclusions**

This course is restricted to students in their third year or above (minimum of 10 credits) who are registered in a 20-credit degree program in which Chemistry is a formal component (honours, major, minor).

To register for this course, each student must first find a supervisor willing to supervise the chemistry work experience. The student and supervisor must sign a learning agreement that has been approved by the course coordinator.

The following may not be used towards CHEM 3801: work that is part of another scheduled course at a learning institution, study that would qualify for a Special Topics course, co-op work terms, and paid work. Only one experiential learning course is permitted per degree.

**Textbook**

There is no textbook for this class, but readings may be assigned by the supervisor.

## Laboratory Safety

Students working in laboratories must be familiar with the safety policies of the environment in which they are working, whether this is inside or outside of the Chemistry Department. The student should meet with the supervisor before beginning any laboratory work to discuss safety issues and Standard Operating Procedures (SOPs). Students working in Dalhousie laboratories are, at a minimum, required to complete the Workplace Hazardous Materials Information System (WHMIS) training, available online at:

<http://www.dal.ca/dept/safety/programs-services/chemical-safety/whmis.html>

**It is the responsibility of the supervisor to ensure that all safety requirements (including background checks and immunizations) are satisfied for the learning environment.**

## Course Requirements

The following are the course requirements for Chemistry 3801.

- The student and supervisor must complete a Learning Agreement Form (attached) which outlines the learning activities and outcomes for the experience. Assessment of the student will be based on the successful achievement of the learning outcomes. This form should be signed by the student and supervisor(s) and submitted to the CHEM3801 Coordinator no later than the first week of classes in the term in which the course takes place.
- The student must record activities related to the course in a hard cover laboratory notebook, including a log of dates and times spent in meetings, laboratory work and other related activities. The format of the notebook should be discussed with the supervisor within the first ten hours of the learning experience. The supervisor will monitor the entries in the lab book and provide feedback as required.
- Students will submit a final report/summary to the CHEM3801 Coordinator (maximum 1000 words) before the first day of exams for the term. The supervisor will provide direction with regard to format and content of the report. Students will pass a draft document to their supervisor for review not later than after 60 hours of the learning experience. The supervisor will review the draft report before the termination of the learning experience, and will provide feedback as appropriate.

## Course Assessment

This course is graded as **Pass/Fail**.

Supervisors will complete the CHEM3801 Supervisor's Evaluation Form (attached) and submit it to the CHEM3801 Coordinator before the first day of exams for the term, along with the grade recommendation. The CHEM3801 Coordinator is responsible for submitting the grade.

## Other Policies

- Students may not receive pay from their Chem 3801 supervisor or for work in their laboratory for the duration of the academic term in which Chem 3801 is taken.
- Students should consult with their supervisor regarding other policies that are specific to their learning environment.

## **Faculty of Science Course Syllabus (Section B)**

### *Chemistry 3801*

#### **University Policies and Statements**

**This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate**

##### **Academic Integrity**

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.

**Information:** [https://www.dal.ca/dept/university\\_secretariat/academic-integrity.html](https://www.dal.ca/dept/university_secretariat/academic-integrity.html)

##### **Accessibility**

The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia).

**Information:** [https://www.dal.ca/campus\\_life/academic-support/accessibility.html](https://www.dal.ca/campus_life/academic-support/accessibility.html)

##### **Student Code of Conduct**

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution.

**Code:** [https://www.dal.ca/dept/university\\_secretariat/policies/student-life/code-of-student-conduct.html](https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html)

##### **Diversity and Inclusion – Culture of Respect**

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness

**Statement:** <http://www.dal.ca/cultureofrespect.html>

##### **Recognition of Mi'kmaq Territory**

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel and support. Visit or e-mail the Indigenous Student Centre (1321 Edward St) ([elders@dal.ca](mailto:elders@dal.ca)).

**Information:** [https://www.dal.ca/campus\\_life/communities/indigenous.html](https://www.dal.ca/campus_life/communities/indigenous.html)

##### **Important Dates in the Academic Year (including add/drop dates)**

[https://www.dal.ca/academics/important\\_dates.html](https://www.dal.ca/academics/important_dates.html)

##### **University Grading Practices**

[https://www.dal.ca/dept/university\\_secretariat/policies/academic/grading-practices-policy.html](https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html)

##### **Missed or Late Academic Requirements due to Student Absence (policy)**

[https://www.dal.ca/dept/university\\_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html](https://www.dal.ca/dept/university_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html)

## Student Resources and Support

### Advising

**General Advising** [https://www.dal.ca/campus\\_life/academic-support/advising.html](https://www.dal.ca/campus_life/academic-support/advising.html)

**Science Program Advisors:** <https://www.dal.ca/faculty/science/current-students/academic-advising.html>

**Indigenous Student Centre:** [https://www.dal.ca/campus\\_life/communities/indigenous.html](https://www.dal.ca/campus_life/communities/indigenous.html)

**Black Students Advising Centre:** [https://www.dal.ca/campus\\_life/communities/black-student-advising.html](https://www.dal.ca/campus_life/communities/black-student-advising.html)

**International Centre:** [https://www.dal.ca/campus\\_life/international-centre/current-students.html](https://www.dal.ca/campus_life/international-centre/current-students.html)

### Academic supports

**Library:** <https://libraries.dal.ca/>

**Writing Centre:** [https://www.dal.ca/campus\\_life/academic-support/writing-and-study-skills.html](https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html)

**Studying for Success:** [https://www.dal.ca/campus\\_life/academic-support/study-skills-and-tutoring.html](https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html)

**Copyright Office:** <https://libraries.dal.ca/services/copyright-office.html>

**Fair Dealing Guidelines** <https://libraries.dal.ca/services/copyright-office/fair-dealing.html>

### Other supports and services

**Student Health & Wellness Centre:** [https://www.dal.ca/campus\\_life/health-and-wellness/services-support/student-health-and-wellness.html](https://www.dal.ca/campus_life/health-and-wellness/services-support/student-health-and-wellness.html)

**Student Advocacy:** <https://dsu.ca/dsas>

**Ombudsperson:** [https://www.dal.ca/campus\\_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html](https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html)

### Safety

**Biosafety:** <https://www.dal.ca/dept/safety/programs-services/biosafety.html>

**Chemical Safety:** <https://www.dal.ca/dept/safety/programs-services/chemical-safety.html>

**Radiation Safety:** <https://www.dal.ca/dept/safety/programs-services/radiation-safety.html>

**Scent-Free Program:** <https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html>

## Agreement Form for CHEM3801: Experiential Learning in Chemistry

Please discuss with your supervisor and the CHEM3800 Coordinator. The agreement must be signed by all.

**CHEM3801 Coordinator:** Peter Wentzell ([peter.wentzell@dal.ca](mailto:peter.wentzell@dal.ca), 902-494-3708)

### A. Logistics and Contact Details

Student's Name:	
Student's Banner Number and Email:	
Term and Year: Sept-Dec/ Jan-Apr/ May-Aug	
CHEM3801 Supervisor Name(s):	
Company/Institution and Department:	
Supervisor(s) Email and phone number:	
Time/day commitment e.g. Tuesdays and Thursdays, 1.30-5.00pm for 12 weeks starting September 9 <sup>th</sup> = 84 hours	

## B. Learning Activities and Outcomes

A *Learning Activity* is a task that the student will do (e.g. record data in Excel, produce a figure), whereas a *Learning Outcome* describes the skill that the student will acquire (e.g. familiarity with spreadsheets for data management).

[illegible]

### C. Criteria for Evaluation

- Students will record research activity in a hard-cover bound lab book (provided by the student) using a format provided/demonstrated by the supervisor within the first 10 hours of the learning experience.
  - The supervisor will monitor the entries in the lab book, and provide feedback as appropriate.
- Students will submit a final report/summary to the CHEM3801 coordinator (maximum 1000 words, to be submitted before the first day of exams for the term), using direction provided by the supervisor as regards format and content. Students will pass a draft document to their supervisor for review not later than after 60 hours of the learning experience.
  - The supervisor will review the draft report before the termination of the learning experience, and will provide feedback as appropriate.
  - Supervisors will complete the Dalhousie University CHEM3801 Supervisor's Evaluation Form and submit it to the coordinator before the first day of exams for the term.

### D. Acceptance – signatures

The student, the supervisor and the CHEM3800 coordinator must all agree to this learning experience.

Student	Supervisor(s)	Coordinator
Date:	Date:	Date:

## Dalhousie University CHEM3801 Supervisor's Evaluation Form

### A. Logistics and contact details

Student's Name:	
Student's Banner Number and Email:	
Term and Year: Sept-Dec/ Jan-Apr/ May-Aug	
CHEM3801 Supervisor Name(s):	
Company/Institution and Department:	
Supervisor(s) Email and phone number:	

### B. Evaluation

This form will be used by the Department of Chemistry in assessing the student's completion of the learning outcomes set for this class, and assigning a final grade (pass/fail). Please discuss your evaluation with the student.

For the above-named student, please provide your evaluation of each of the following during the period that the student spent in your lab for their CHEM3800 work experience.

	Excellent	Good	Satisfactory	Inadequate	N/A
Lab Book					
Communication – written					
Communication – verbal					
Initiative					
Positive attitude					
Productivity					
Quality of work					
Application of technical knowledge					
Planning/time management skills					
Reliability/dependability					
Creativity					
Judgment					
Team/interpersonal behavior					
Response to supervision and constructive criticism					
Adaptation to organization/rules/policies					
Attendance and punctuality					
Overall performance					

**Has this evaluation been discussed with the student?**

**Would you recommend this student to another supervisor?**

**Please comment on the student's:**

- Areas of strength

- Areas for improvement

**Signature of supervisor:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Please return this completed form to the CHEM3801 Coordinator before the first day of exams for the term.