

Summary of Procedures and Specific Requirements for the Ph.D. in Chemistry - Research (Ph.D. - Research)

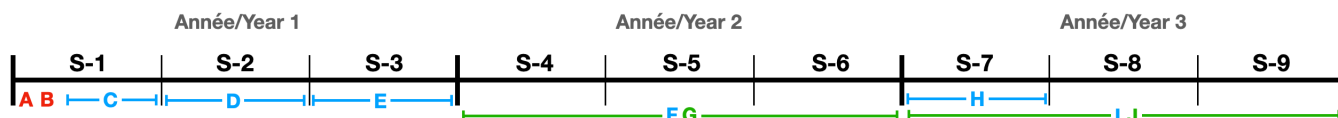
Department of Chemistry, Université de Sherbrooke Version 2025-09

This document summarizes information useful for your progress in the PhD in Chemistry program. You can find the most recent version at this [link](#).

Please report any broken link to chimie@usherbrooke.ca

ACADEMIC COURSE

Here is a visual summary of your doctoral degree timeline, with the main tasks you are responsible for upon arrival (in red), with your monitoring committee (in blue) and concerning your pedagogical activities (in green). The details of these tasks are contained in the following pages.



A - Registration of information related to your [monitoring committee](#) on the [OSER platform](#)

B - [Safety training](#) to be completed

C – 1st monitoring committee meeting – Explanation of its role and the PhD timeline

D – 2nd meeting of your monitoring committee – Definition of the research project

E – 3rd meeting of your monitoring committee – [General Examination](#)

F – 4th meeting of your monitoring committee – Progress report, usually at the same time as Seminar II

G – “[Seminar II](#)” pedagogical activity to be completed

H – 5th meeting of your monitoring committee – Discussion/Approval of Seminar III project subject

I – 6th meeting of your monitoring committee – Progress report, usually at the same time as Seminar III

J – “[Seminar III](#)” pedagogical activity to be completed

**After session 9, you will have three additional meetings to follow up on your writing.*

USEFUL INFORMATION

Welcome to the Department of Chemistry at Université de Sherbrooke! We hope your PhD degree will meet your expectations and help you achieve your professional goals. Throughout this document, several committees and resource persons will be indicated. Here is the updated list of names and roles of these persons/committees:

Departmental Graduate Studies Committee (DGSC/CESD)

Philippe Dauphin-Ducharme – President – Professor in the field of analytical chemistry

Allison Wustrow – Member – Professor in the field of materials/physical chemistry

Vincent St-Onge – Member – Research Officer

Natasha Siebert – Member – Academic Coordinator

Céline Gosselin (celine.gosselin2@usherbrooke.ca) – member – Student representative, Ph.D. – Organic

Marc-Olivier Gosselin (Marc-Olivier.Gosselin@USherbrooke.ca) – member – Student representative, M.Sc. – Inorganic

Role of the DGSC/CESD

The DGSC/CESD manages special approval files for MSc and PhD program standards and advises the Faculty of Science on student requests. Requests typically come from the Chair of the Monitoring Committee and include authorization for courses outside the department, permission to write a thesis with articles, and extensions for thesis deadlines. [All requests must be submitted to the DGSC/CESD.](#)

Academic Coordinator: Natasha Siebert (chimie@usherbrooke.ca)

She will answer questions about the educational activities to be completed during your program. When you begin writing your thesis, you must submit the notice of writing directly to them.

Department Secretary: Anne Couture (secretariat-chimie@USherbrooke.ca)

She will activate your key card and submit a key request for your laboratory. With the help of your supervisor, she will also prepare your stipend requests during your program.

Editorial Advisor: Natasha Siebert (chimie@usherbrooke.ca)

After you submit your notice of writing, she will provide you with useful information to facilitate your writing. She also keeps the template up to date. She will approve your first deposit on the OSER platform before it is officially to the Faculty (The process is automatic on the platform).

USEFUL LINKS

[Page containing all documents related to your PhD program](#)

FACULTY OF SCIENCE GUIDE AND GUIDELINES

The Faculty of Science has developed a document entitled "[Guide and Guidelines for Graduate Students in the Faculty of Science](#)" (In French). In addition to the information contained in this document, we encourage you to read this guide.

MONITORING COMMITTEE

Within the first month following the first registration in the PhD program, the student will be assigned a monitoring committee by the Graduate Studies Committee of the Department of Chemistry.

Composition of the monitoring committee: The monitoring committee is made up of: 1) the student, 2) the research director, 3) a professor with an expertise in your field and 4) a professor who is not an expert in your field (president).

The monitoring committee supports the research director and advises the student throughout the program to ensure academic success. They monitor progress and offer suggestions for the scientific project, but the supervisor and student are ultimately responsible for its direction and advancement.

The mandate of the monitoring committee:

1. The monitoring committee sets goals and deadlines with the student, keeping track of progress.
2. If there are gaps or weaknesses, they suggest relevant activities.
3. The committee participates in all academic stages and assesses research progress.
4. They report any conflicts or major issues to department management.

Operating mode:

1. The monitoring committee meets as needed and at a minimum the required meetings outlined in the training plan.
2. The quorum is established as follows: the president, the expert, the supervisor, and the student.
3. After each activity and meeting with the monitoring committee, the president updates the training plan and transmits it to the committee members.
4. The student is responsible for setting up the meeting dates in consultation with the committee.

OSER PLATFORM

The Faculty of Science has developed an online platform to allow you to follow your progress during your master's program. Once the CESD has provided you with the composition of your monitoring committee, it is your responsibility to complete the registration of your supervisor and the composition of this committee on the [OSER platform](#). The platform will send you reminders of the meetings you must attend in relation to your academic progress. However, you are responsible for ensuring you follow the deadlines for the various meetings in the training plan.

TRAINING PLAN

You will fill out the collaboration agreement and the training plan (on OSER) with your research director to assign roles and responsibilities for the program. Complete them and submit them before your first committee meeting. The committee will review and revise them as needed.

SAFETY TRAINING

All new students must complete mandatory safety training within the first month of enrollment. This mandatory safety training must be completed before initiating any work in the lab. This mandatory safety training is available online: [Formations santé-sécurité - Service de la mobilité, de la sécurité et de la prévention - Université de Sherbrooke \(usherbrooke.ca\)](#). Trainings are available in English. We encourage you to read the manual that has been designed by the Service de la Mobilité, de la Sécurité et de la Prévention at the [following link](#).

TEACHING ASSISTANT POSITIONS

Once a year, at the beginning of the summer, the lab coordinator will send a list of available teaching assistantships to all graduate students. You will then be asked to apply for the desired positions, specifying your preferences, on the page: [Auxiliaires de recherche et d'enseignement - Emplois - Université de Sherbrooke \(usherbrooke.ca\)](https://usherbrooke.ca/monaccs/identifiant-oublie) The department head then proceeds to assign loads in conjunction with the heads of educational activities.

ADMINISTRATION AND MANAGEMENT OF YOUR DOSSIER

Upon your arrival, you must meet with Natasha Siebert (Chemistry-D1-2142) to be informed of the procedures to be followed as soon as possible:

- 1- Obtaining a CIP: <https://www.usherbrooke.ca/monaccs/identifiant-oublie>
- 2- Email activation: <https://www.usherbrooke.ca/courriel/creation/>
- 3- Submit original transcripts to the Office of the Vice Dean of the Faculty of Science (in D3-1038) and information on health insurance requirements.

For international students:

- 4- Submission of the CAQ and study permit to the Registrar's office.
- 5- Presentation of a photocopy of the study permit to the Student Life Services (room E1-118).

Once these formalities have been completed, you will very quickly need to register online for the upcoming session. The electronic registration procedure must be completed following the sending of an email by the Faculty of Sciences and is carried out via [horaire web](#).

Note 1: Please see below for the registration of research activities I, II, III and IV.

Note 2: If you have registered an educational activity (course, seminar, etc.) in one session and the activity is not completed by the end of that session, you do not have to register the activity again in the next session.

Note 3: You may not have any educational activities to register for a session (no classes, seminars, etc.). However, you must confirm your registration for the session.

Note 4: For a more consistent progression, several pedagogical activities of the program have been scheduled for a specific semester (general exam, seminar II, seminar III). It is not possible to delay one of these activities unless there is a significant reason. In such a case, you must communicate this reason to your supervisory committee, which will propose to the Departmental Graduate Studies Committee (forwarded by the supervisory committee chair to the DGSC/CESD chair). The Graduate Studies Committee will recommend or not that a delay be granted for this pedagogical activity to the Vice Dean of Research, who will ultimately grant or not the requested delay.

CHM 891/CHM 893/CHM 894/CHM 895 – RESEARCH ACTIVITIES I, II, III AND IV

These four pedagogical activities are mandatory and correspond to the laboratory activities. The computerized system automatically enrolls students in CHM 891-Research Activities I in the first term, CHM 893-Research Activities II in the fourth term, CHM 894-Research Activities III in the seventh term, and CHM 895-Research Activities IV in the tenth term. These activities receive R or E grades from the advisor at the end of the first year for CHM891, the second year for CHM893, the third year for CHM894, and at the first filing for CHM895.

CHM 897-GENERAL EXAMINATION

Registration

The General Review must be completed no later than 12 months after your registration (by the end of Session 3). The activity will be added automatically to your registration form for session 3 if not already done in a previous session. For any exceptions, please refer to the "Administration and file management" section. You reserve the date of the general examination in consultation with your jury and you notify the [Department secretary](#) of the date of the general examination AT LEAST 1 MONTH IN ADVANCE.

Objectives, format and evaluation

See [Appendix 1](#) at the end of the document for a detailed description.

Jury

It includes at **least 4** professors from (or affiliated with) the Chemistry Department, including monitoring committee members and any available evaluators of your expertise. Typically, the jury chair is also the monitoring committee chair. No forms are required; the Faculty of Science will send the official documents to the monitoring committee chair.

Decision

It includes a grade (R: excellent, very good, good, fair, or E). A grade of E leads to automatic exclusion from the program. In exceptional cases, the jury may request a written adjournment through its Chair to the Chair of the Departmental Graduate Studies Committee (DGSC/CESD), providing reasons for the deferral. The Graduate Studies Committee then recommends deferment to the Vice Dean of Research, who grants or denies it. **An adjournment does not constitute a new evaluation.** An adjournment allows further evaluation of specific items not fully assessed, as most were satisfactorily evaluated initially. A maximum of four months is typically allowed for the adjourned assessment, culminating in a grade being given (no further adjournments allowed).

The decision (R, E or adjournment) is indicated on the "Jury Report" form, which the jury chair provides on the OSER platform.

CHM 803-SEMINAR II

Registration

Seminar II must be completed during the second year of the PhD program (between Session 4 and Session 6). This activity will be automatically added to your registration form for session 6 if you did not complete it in a previous session. For any exceptions, please refer to the "Administration and File Management" section. You must register for the mandatory activity [CHM 803](#) (2 credits) by adding it to your electronic registration form for the session in which you will present.

Format

It consists of a public oral presentation (average length 40-45 minutes) of your research results: working hypothesis, positioning in relation to the literature, concepts and theory useful for the assessment of the work, methodology used, results and outcomes. It is encouraged to create an online Teams session to allow off-campus viewers to attend the presentation. The pedagogical character of the presentation must be emphasized. If the content of the presentation is confidential, you will need to complete and print the Non-Disclosure Agreement (NDA) form available on the [following page](#), any viewers in the room will be required to sign the agreement. In this case, do not generate an online session on Teams.

Documentation

You are responsible for providing the date, time and title of your presentation to the secretary and coordinator at least two weeks before the seminar. In addition, you must upload your presentation (PowerPoint or PDF format) **at least two business days prior to the event to the channel "SEMINAIRE 2 – SEMINAR 2" of the Teams [SEMINAIRES CHIMIE](#).**

Your file must be named according to the format: NAME_LASTNAME_CHM803_DATE where the date is that of your seminar (for example: SMITH_JOHN_CHM803_14-05-2021).

Please note that late submission of the required documentation will have a negative impact on the grade awarded.

Jury

made up of the student's monitoring committee and the graduate students. However, all professors present may evaluate.

Evaluation

consists of a question period open to the public. The evaluation criteria as well as the scale used by the professors and the students are available on the chemistry department intranet ([course outline](#)). The jury meets with the student at the end of the evaluation to comment on the presentation and to give some advice and recommendations.

Decision

consists of a grade (A+, A, A-, B+, B, B-, or E) submitted to the Faculty of Science at the end of the term.

CHM 804-SEMINAR III

Registration

Seminar III must be completed during your third year of doctoral studies (between Session 7 and Session 9), and at least four months before your doctoral defense. This activity will be automatically added to your registration form for session 9 if you have not done it in a previous session. For any requests for exemptions, please refer to the "Administration and file management" section. You must register for the mandatory activity [CHM 804](#) (3 credits) by adding it to your electronic registration form for the session in which you will present.

Format

consists of a public oral presentation (average length 40-45 minutes) of a literature review to identify an innovative research question and to propose a research project to answer the identified question. This proposal must be well defended and supported. The topic of the presentation must be discussed beforehand with the monitoring committee during the meeting dedicated to this purpose (see training plan). The pedagogical nature of the presentation and the report must be emphasized. It is encouraged to create an online Teams session should be created to allow off-campus viewers to attend the presentation.

Documentation

You are responsible for providing the date, time and title of your presentation to the secretary and coordinator at least two weeks prior to the seminar. In addition, you must upload your presentation (PowerPoint or PDF format) **at least two business days prior to the event to the channel "SEMINAIRE 2 – SEMINAR 2" of the Teams [SEMINAIRES CHIMIE](#).**

Your file must be named according to the format: NAME_LASTNAME_CHM803_DATE where the date is that of your seminar (for example: SMITH_JOHN_CHM804_14-05-2021).

Please note that late submission of the required documentation will have a negative impact on the grade awarded.

Jury

made up of the student's monitoring committee and the graduate students. However, all professors present may evaluate.

Evaluation

consists of a question period open to the public. The evaluation criteria as well as the scale used by the professors and the students are available on the chemistry department intranet ([course outline](#)). The jury meets with the student at the end of the evaluation to comment on the presentation and to give some advice and recommendations.

Decision

consists of a grade (A+, A, A-, B+, B, B-, or E) submitted to the Faculty of Science at the end of the term.

CHM 899-THESIS, ARTICLE INSERTION, FIRST DEPOSIT AND FINAL DEPOSIT

Registration

To make your first thesis deposit, you must be registered for the CHM 899-Thesis activity. You are responsible for adding this activity to the electronic registration form on time. Please note that no deposits will be permitted if Seminar III is not completed.

Writing duration: Once you have registered for the CHM899 activity, the editorial consultant can organize a written information session at your request.. All professors agree that thesis writing should not exceed 12 months. If the first deposit isn't completed after this time, the Faculty of Science will close your student file, resulting in a loss of status. To make your first deposit, apply to the Vice-Dean to reactivate your file and continue your program. In exceptional circumstances justifying a delay, notify your supervisor and the Departmental Graduate Studies Committee in writing before the deadline. The DGSC/CESD will evaluate the reasons and, if acceptable, contact the Vice Dean of Research for additional writing time.

Reproduction of material

Under current laws, copyright holders must obtain written permission to reproduce material from literature and websites. This is of great importance for depositing your thesis at the National Library.

Writing Template

Faculty guidelines for writing a dissertation are available in the " [*Règles facultaires pour la rédaction d'une thèse ou d'un mémoire*](#) ". For organic chemistry students, a self-explanatory Word file is available for writing and should be used. All styles (layout, diagrams, tables etc.) are pre-formatted to meet the requirements of the Faculty of Science. The document "Template for Writing a Thesis or Dissertation in Organic Chemistry" is available at:

[Études supérieures - Département de chimie - Université de Sherbrooke \(usherbrooke.ca\)](#)

A product characterization compilation table is available. Also, a template for writing a thesis in physical chemistry that meets all the requirements of the Faculty of Science is available at:

[Études supérieures - Département de chimie - Université de Sherbrooke \(usherbrooke.ca\)](#)

The thesis must be between 50 and 200 pages in length, excluding bibliography and annex.

How to proceed

1. In the "Dissertation" section of OSER, the student fills "Composition of the dissertation jury." Faculty rules stipulate that the jury must include 3 professors from the (or affiliated with the) Department of Chemistry who are experts in the student's research area, including the thesis supervisor and an external expert. If the jury chair is not an expert in the student's field, an additional expert from the department must be added. The jury chair then does not evaluate the thesis but presides over the defence.
2. After the jury members and DGSC/CESD have approved the composition, the student can make the initial deposit. The editorial advisor will approve the dissertation on the OSER platform, which will notify the jury that the electronic version is available. The Faculty allows about 6 weeks for evaluation, after which the student can contact the jury chair for progress updates evaluation.
3. Doctoral thesis defence: The candidate sets the defence date with the jury and informs the department secretary at least two weeks in advance. The jury chair ensures all jury members complete corrections and receives confirmation that the thesis is defensible—with at most only minor corrections needed. If approved, the president-reporter authorizes the defence. In the case of refusal or major corrections, the deposit process starts again from the beginning. The defence is public, featuring a 45-minute presentation followed by questions from the jury and public. If content is confidential, complete the

Non-Disclosure Agreement (NDA) form; all attendees must sign the form at the [following page](#). A private defence can be scheduled at the jury's request before the mandatory public defence.

4. After the jury's feedback, the student must submit the corrected dissertation on the OSER platform in the "Final submission" section. A brief document detailing the changes made in response to the evaluators' comments must also be provided (email) to the jury chair. There is no other final deposit form required.
5. When the jury chair has approved the final submission on the OSER platform, the student makes his (electronic) final submission by following the procedure described on the [following page](#), in the tab entitled "Thesis submission procedure".
6. The final dissertation submission by insertion of articles must be accompanied by the "[Authorization Form](#)" of the co-authors.

Thesis by insertion of articles: A thesis by insertion of articles must not be a simple juxtaposition of articles. It must constitute a coherent and integrated whole, including an introduction, a description of the problem to be addressed, a description of the research problem in the form of research objectives or hypotheses, a theoretical framework, a methodological approach, a section on the analysis and interpretation of the results in the case of empirical research, and finally a conclusion. The institutional rules regarding the dissertation by insertion of articles are available in the tab "[Faculty rules for writing a thesis or a dissertation](#)" (In French).

The thesis by article insertion must meet the following standards:

1. The student must obtain permission from the CESD (or equivalent) before writing a thesis by insertion of articles (see procedure described in **8**). The CESD is responsible for accepting or refusing to allow the student to replace a portion of the results with one or more manuscripts (submitted or accepted). The purpose of this contingency is to allow the candidate to derive maximum benefit from any written publication.
2. The work that led to the production of the manuscripts must be an integral part of the doctoral research project.
3. Since scientific writing is integral to doctoral training, the student must be the **first author** (principal author) **of at least one article**.
4. The article(s) inserted in the thesis must be submitted, accepted, or published in refereed journals or conference proceedings (computer science only) at the time the student applies to the CESD for the opportunity to write a thesis by article insertion. Each article must be inserted into the thesis in its manuscript form - in the form in which it was, is, or will be submitted for publication. Manuscript form means that figures and tables are inserted in the correct places in the text. Review articles (literature reviews) do not meet the minimum requirements for an article-based thesis.
5. Each author's contribution must be clearly presented in a preliminary note for each manuscript incorporated into a thesis. The same article must not have been previously included in another thesis by article insertion.
6. Thesis articles can be in French or English, but everything else must be in French unless approved. The jury is the sole judge of whether the sum of the contributions from the inserted articles and the other parts of the thesis contribute sufficiently to the advancement of knowledge in the field of research to justify granting the Doctoral degree.
7. **Procedure for requesting authorization to deposit a thesis by inserting articles:**

- The student fills out the authorization form ([Études supérieures - Département de chimie - Université de Sherbrooke \(usherbrooke.ca\)](http://www.usherbrooke.ca/etudes-superieures/departement-de-chimie)) and submits it to the president of the monitoring committee.
- For each paper, the starred author (corresponding) will be required to certify to the committee that the student's contributions to the experiments and writing as described by the student in their paper.
- For each published article, the student will provide the committee with the DOI (hyperlink to the article)
- For each accepted but unpublished paper, the student will need to provide their committee with the letter of acceptance of the paper from the publisher.
- For each submitted paper, the student will need to provide their committee with the submission confirmation with the submission number.
- The supervisory committee reviews all of the material the student provided and decides whether to forward the application for an article to the departmental GSC. The Chair of the Mentoring Committee transfers the request and all documentation to the Departmental GSC.
- The departmental GSC informs the student and the student's supervisor of the decision made based on all the documents/information received.
- Important Note: To be able to file a thesis with inserted articles, the article(s) included in the latter must at least be submitted at the time of the initial deposit. If no article has been submitted at the time of the request for writing by inserting article(s) to the CESD, please indicate the expected date of submission of the article(s). The CESD's decision is conditional on the demonstration of proof of submission before the initial submission of the thesis.

Doctoral thesis defense: The PhD candidate establishes the date of the defense with the jury and advises the department secretary of the scheduled date as soon as possible. Once the chair-reporter has ensured that all jury members have completed the corrections, he or she must obtain a clear statement from each jury member that the thesis is defensible, i.e., that it is acceptable with at most minor corrections. If this is the case, the president-reporter then authorizes the thesis defense. In the case of refusal or return of the thesis for major corrections, the deposit process starts again from the beginning.

The defense is public. It consists in a ~45 min oral presentation of the research, followed by a period of questions (from the jury then the public) on the research. If the presentation's content is confidential, you will need to complete and print the Non-Disclosure Agreement (NDA) form available on the [following page](#), any viewers in the room will be required to sign the agreement.

A private defense can be schedule prior to the public defense at the jury request, but the public defense is mandatory.

PLAGIARISM

What is plagiarism?

Paul Asselin, August 2019
Department of Chemistry, University of Sherbrooke

Plagiarism is the act of falsely attributing originality to a work.

The formal definition of plagiarism at the University is as follows:

Passing off or attempting to pass off as one's own, in an assessed production, the work of another person or passages or ideas taken from the work of another (this includes, but is not limited to, failing to acknowledge the source of a production, passage or idea, taken from the work of another) UdeS Academic Regulations, section 9.4.1, June 6, 2019 revision.

There is also self-plagiarism:

Submit, without prior authorization, the same production, in whole or in part, to more than one pedagogical activity or in the same pedagogical activity (particularly in the case of repetition) UdeS Academic Regulations, Article 9.4.1, revision of June 6, 2019.

Not to mention other similar offenses, including cheating:

Providing or obtaining any unauthorized assistance, whether group or individual, for a production being evaluated;

Copy, forge, or falsify a document for the evaluation of an educational activity;

Excerpts from the UdeS Academic Regulations, Section 9.4.1, June 6, 2019 revision.

How is plagiarism dealt with at UdeS?

As described in Chapter 9 of the UdeS Academic Regulations, when a case of plagiarism is suspected, the professor forwards the work and all relevant information to the faculty, which holds a disciplinary hearing to decide whether plagiarism has occurred. If plagiarism is proven, the faculty will determine the sanction to be applied. **A provisional sanction may be applied before the hearing.**

Penalties for plagiarism generally range from a grade of "0" on a specific question in an assignment to **expulsion from the University**. The severity of the sanction depends on the seriousness of the case and the number of repeat offenses. A notation of plagiarism will be noted on the academic record of the person(s) responsible. A notation of the plagiarism disciplinary hearing may be kept on file **even if the plagiarism charge is dismissed**.

What are my rights if I am charged?

The rights of a person accused of an academic offence are set out in Chapter 9 of the UdeS Academic Regulations. A person summoned to a disciplinary hearing has the right: to be informed of the charge and of the hearing, to be present accompanied and represented; to have access to the file, to defend oneself and to refute the charge; to undergo an impartial hearing; to have access to the written and motivated decision; to request a review of a decision, all within a reasonable time. **A person also has the right to confidentiality of his or her file.**

The UdeS Student Ombudsman is the independent recourse that ensures that the rights of students at the University are respected.

The class representatives and the student associations are also there to assert your rights with the professors.

How to avoid unpleasant surprises?

Original work should come from your own thinking about the topic at hand. Limit "copy and paste" and be sure to include the direct source when you do so. All references used but not directly cited should be in your bibliography.

Copy and paste => Cite-Contextualize! Paraphrase your sources. If you include a quote, then repeat it in your own words. This shows that there was thought put into it on your part.

In team work, all members are responsible for the entire work. It is your responsibility to review the final work with all your colleagues. If you submit the work by email, copy your colleagues.

Inter-team collaboration: In some courses, collaboration between different teams may be allowed or even encouraged. Remember that each assignment should be different. Discuss the concepts covered ("What did you talk about?") rather than the verbatim ("What did you write?"). **In all cases, check with your teacher and let him/her know! Also, keep a written record (e.g., email) of your exchanges with the professor on this subject.**

References and useful links

- University of Sherbrooke Academic Regulations, June 6, 2019 revision.
<https://www.usherbrooke.ca/registraire/droits-et-responsabilites/reglement-des-etudes/>
- Student Bill of Rights and Responsibilities. December 2001. https://www.usherbrooke.ca/a-propos/fileadmin/sites/a-propos/documents/direction/documents_officiels/declaration.pdf
- [Plagiarism awareness and quiz](#)
- UdeS training support service: <https://www.usherbrooke.ca/ssf/>
- Student Ombudsman: <https://www.usherbrooke.ca/ombudsman/>
 - 819 821-7706 1 800 267-8337, ext. 67706
 - ombudsman@usherbrooke.ca

APPENDIX 1-CHM 897 - GENERAL EXAMINATION (6 CR.)

OBJECTIVES OF THE GENERAL REVIEW

To determine whether the student has a thorough knowledge of their research topic, a good knowledge of the area in which they are presenting, and an adequate knowledge of chemistry in general;

To assess the student's ability to make connections between these various pieces of knowledge and to use them for problem solving;

Ensure the student's potential to do original and independent research.

LANGUAGE OF PRESENTATION OF THE GENERAL EXAMINATION

The written work, the jury's questions and the student's answers must be in French for a French-speaking student, and may be in English for a non-French-speaking student. It is the sole responsibility of the student to have reached a satisfactory level of written and oral expression for the general examination. A poor understanding of the language of assessment (French or English) may justify a failing grade for the general examination.

CONTENT AND FORMAT OF THE GENERAL EXAMINATION

The Department of Chemistry requires the student to:

1. form the jury of the general exam (all monitoring committee members + at least 1 additional expert in the sector in which the student wishes to be evaluated). In addition, you must send by email (or upload to OSER) to the members of your jury your written document at least one month before the oral exam.

Please note that late submission of the required documentation will have a negative impact on the grade awarded.

The jury evaluates the document, the chairperson collects the evaluations of each member of the jury, and sends the results to the student at least one week before the oral exam is held. Following the results of the evaluation of the written portion, the Chair will inform the student that:

- a) The oral portion will be held as the document is considered acceptable. Points to be clarified during the oral presentation can be provided to the student, if necessary;
- b) The oral portion is postponed* because although the document is deemed acceptable, it contains specific deficiencies that need to be addressed. In this case, it is important that the general examination jury meet with the student to provide precise and clear feedback on the points to be addressed, and to set a specific deadline (maximum 4 months) for the submission of the new version of the written portion;
- c) The oral portion is cancelled* because the written document, according to all the evaluation criteria presented in the following sections, does not meet a sufficient level. This decision leads to the failure of CHM897 and exclusion from the program.

** In the event of an adjournment or failure, the general examination board announces the decision to the student and has it ratified by the CESD, providing the student with a detailed report justifying the decision.*

2. make an **oral presentation of** the research project to the members of the jury during the general examination*;
3. **answer a series of oral questions** from all members of the jury to assess the student's knowledge and potential to do research. *

(1) Written presentation of the research project

Content of the written presentation

- Contextualization of the research area (review of relevant literature);
- Originality of the project in relation to the literature and the identified problem;
- General and specific objectives of the project and working hypothesis ;
- Methodology (experimental protocol) that will be used to achieve the objectives of the research project;
- Preliminary results obtained and/or expected results on this research project, their interpretation and impact;
- Bibliography.

Format of the written presentation

- About 20 pages (excluding bibliography);
- The document should be written in Times new roman 12 pts, 1.5 line spacing, with the following margins: top 2.5 cm, bottom 1.5 cm, left 2.5 cm, and right 1.5 cm. Include pagination. Alternatively, you may use the Chemistry Department's writing template for thesis, without changing the margins, line spacing, or anything else:

[Études supérieures - Département de chimie - Université de Sherbrooke \(usherbrooke.ca\)](http://usherbrooke.ca)

(2) Oral presentation of the research project

During the general examination, make an oral presentation of the research project of no more than 15 minutes. It is important to respond to any points that may have been raised in relation to the written submission.

(3) Oral question period by all members of the jury for assessment of knowledge and research potential

Based on the paper submitted and the oral presentation, all members of the jury ask questions to assess the student's knowledge. The student must demonstrate a thorough knowledge of the field in which he or she is working, a good knowledge of the area in which he or she is presenting, and an adequate knowledge of chemistry in general. The student must also demonstrate the potential to do independent and original research by defending his/her research project after presenting it.

Course of action

The question period is not time-limited and lasts as long as is necessary for an in-depth evaluation of the student. The chairperson-reporter ensures that the examination is conducted properly and that the weighting of the evaluation criteria is respected - see Part B in Evaluation Criteria.

EVALUATION CRITERIA

For evaluation purposes, the three parts of the general examination are grouped into two equally weighted evaluation sections:

Part A 50%

- (1) Written presentation of the research project 40
- (2) Oral presentation of the research project 10

Part B 50%

- (3) Oral Question Period

Success in the exam depends on the success (>60%) in each of the sections. Each section is evaluated according to the following criteria, the weighting of which is shown to the right. For each criterion, each evaluator determines whether the student's performance is excellent, good, poor, or insufficient.

(1) Written presentation of the project 40

%	Criteria*
15	Conciseness, linguistic quality and respect of the requested format (Report contains all required elements but is not overly long)
15	Contextualization and relevance of the literature covered in relation to the research project
15	Highlighting the value of the subject's problem statement in light of the contextual setting
15	Clarity of project objectives (general and specific) and working hypotheses
15	Appropriateness of the identification of the project's originality and the potential impact of the main results expected and/or obtained
10	Appropriateness of the methodology proposed/used to achieve project objectives
10	Identification and interpretation of the main results expected and/or achieved
5	References

** Each criterion must be successfully met; failure to meet one or more of these criteria may result in adjournment or failure.*

(2) Oral presentation of the research project 10

%	Criteria
40	Quality of oral expression
40	Respect for the content of the written presentation
20	Quality of the visual support

Part B

(3) Oral question period 50

%	Questions*
50	Mastery of concepts directly related to the research project
30	Mastery of concepts identified for the sector in which the student is presenting (see Themes selected by sector)
20	Level of knowledge of chemistry in general, outside the sector in which the student is presenting

** In exceptional cases, an adjournment may be granted if the majority of points have been assessed satisfactorily, but time is needed to (re)assess specific points.*

Themes selected by sector (to be specified)

FUNCTIONAL MATERIALS (CLAVERIE, DAUPHIN-DUCHARME, DORY, HARVEY, SOLDERA, ZHAO, WUSTROW)

- | | |
|------------------------|--------------------------------|
| 1. Solid state | 5. Nanomaterials |
| 2. Polymers | 6. Composites |
| 3. Colloids | 7. Synthesis and preparation |
| 4. Inorganic Materials | 8. Methods of characterization |

ANALYTICAL CHEMISTRY AND ENVIRONMENT (BELLENGER, BONNEAU, BRISARD, DAUPHIN-DUCHARME, SEGURA, GUÉGUEN)

- | | |
|--|--|
| 1. Chemical equilibria and constants (K, pKa, pH...) | 4. Instrumental analysis / Principles of calibration / Detectors and instruments (UV, FLD, ESI-MS, IR, FID, ICP-AES) |
| 2. Oxidation-reduction | 5. Basic inorganic chemistry |
| 3. Separation techniques / Preparatory techniques (acid digestion, SPE, liquid-liquid extraction, etc.) / Principles of chromatography / Analytical techniques (LC, GC, Electrophoresis, etc.) | 6. Basic principles of statistics / Mean, standard deviation, error |

ORGANIC SYNTHESIS AND MEDICINAL CHEMISTRY (BÉLANGER, DORY, LEGAULT, BOUDREAU, GUÉRIN, SPINO)

- | | |
|---|---|
| 1. Reaction mechanisms | 5. Conformations and 3D |
| 2. Energy aspects (energy diagrams, thermodynamics, kinetics, etc.) | 6. Synthesis and transformations (aspects of chemoselectivity, regioselectivity, protecting groups, transformation sequences, etc.) |
| 3. Orbital theory (OMF, stereoelectronics, etc.) | 7. Biochemistry (targets, non-covalent interactions, etc.) |
| 4. Physical chemistry (pKa, induction, resonance, isotopic kinetic effects, etc.) | 8. Organometallic |

PHYSICAL AND THEORETICAL CHEMISTRY (AYOTTE, SOLDERA, WUSTROW)

- | | |
|---|--|
| 1. Thermodynamics and chemical thermodynamics (Fundamental laws of thermodynamics, Helmholtz and Gibbs Free energies and equilibrium, Maxwell Relations) | equation and its solutions, wavefunctions, linear combinations and superposition states, variational principle, perturbation theory) |
| 2. Reaction Kinetics (reaction order, rate equations, steady-state approximation, detailed balance, kinetic and thermodynamic control, catalysis, kinetic theory, transport properties, chemical dynamics). | 5. Spectroscopy (Transition energy scales, selection rules, group theory, experimental geometries) |
| 3. Statistical Mechanics (Boltzmann distributions, partition functions, entropy) | 6. Computational Methods (Density Functional Theory, Ab initio electronic structure calculations, molecular dynamics simulations, Monte-Carlo simulations) |
| 4. Quantum Mechanics (Particle in a box, harmonic oscillator, rigid rotor, hydrogen atom, Schrödinger | 7. Experimental Apparatuses (Lasers, vacuum systems, detectors, Fourier analysis, etc.) |
| 8. Principles of statistics / Mean, standard deviation, error | |