

Chemistry Department Graduate Curriculum

Revised October 2025

Year 1

- **Fall Semester**

- Coursework
 - Three of six core classes required
 - *Mechanistic organic chemistry*
 - *Modern methods in organic synthesis*
 - *Thermodynamics and statistical mechanics*
 - *Physical chemistry: principles and applications*
 - *Principles of chemical biology*
 - *Chemical genomics and proteomics*
 - Maximum of four courses permitted (3 core courses and 1 elective course)
 - Any questions regarding course selection can be directed to the Graduate Studies Director or any individual faculty member within the student's area of interest.
- Group selection process
 - Students are required to obtain signatures from 8 faculty members
 - Signatures can be obtained through an individual meeting with the faculty member or attending an open house (with approval from the faculty member).
 - Attending group meetings is not sufficient to obtain a signature
 - Signature sheet with the required signatures and list of 1st, 2nd and 3rd choices for research labs is due on December 1st.
- Seminar Attendance (recommended; especially seminars within the student's division of interest)
 - Weekly graduate research seminars – Fridays at 3pm
 - Departmental seminars
- All students will be full-time teaching assistants (TAs)

- **Spring Semester**

- Enrollment in Science Communication in Chemistry is required
 - Enrollment in one or two additional elective courses based on each student's research track is required
 - Maximum of four courses permitted (science communication and 3 electives)
 - All students will be full-time teaching assistants (TAs)
- It is recommended that all students complete **6 courses** by the end of their first year
 - Students are **required** to maintain a cumulative GPA of 3.0 at the end of Year 1

Year 2

- **Graduate Symposium**
 - All second-year students are required to present a poster at the Fall Graduate Symposium
- **Oral Candidacy Exam**
 - Scheduled towards the end of Year 2 (May)
 - Student undergoes an oral examination assessed by at least 3 faculty members (Thesis Committee)
 - Each student should submit their project title and abstract to their Committee when requested by their respective division
 - Each student should send their presentation slide deck to their Committee at least 24hrs prior to the oral exam
 - See accompanying powerpoint slides for best practices in Oral Presentation (preparation and execution) from the Science Communications course
 - One student in each division is selected for the Frank Tsung (Physical chemistry)/Jeff Byers (Organic and organometallic chemistry)/Chemical biology Graduate Fellowships

Year 3

- **Departmental Research Seminar**
 - Scheduled during the Spring/Fall semesters of Year 3/4 (Fridays at 3pm)
 - Students present a 30-45 min seminar to the department on their research project (background and progress), followed by a 15-min Q&A
 - Assessed by the student's Thesis Committee
 - See accompanying powerpoint slides for best practices in Oral Presentation (preparation and execution) from the Science Communications course
 - All third-year students are required to attend these Departmental Research Seminars

Year 4

- **Original Research Proposal**
 - Scheduled towards the end of Year 4 (May/June)
 - Each student is required to submit a written proposal on a research topic that is not directly related to their own research project
 - The written proposal should be submitted 1 week prior to their proposal defense
 - The written proposal should follow NIH R21 format (See attached document with detailed instructions and sample proposal)
 - Each student will undergo an oral proposal defense in front of their Thesis Committee
 - Each student should send their presentation slide deck to their Committee at least 24hrs prior to the oral proposal defense
 - After the proposal defense, all students will be required to submit a 1-page rebuttal addressing any issues that were raised by the committee during the defense. (Rebuttal needs to be submitted to the Thesis Committee 1 week after the proposal defense).

Year 5+

- **Thesis defense**

- Students must submit their written PhD thesis to their Committee at least 1 week prior to their scheduled defense date.
- Students are required to present a public seminar (~ 1hour) on their thesis research
- The public seminar will be followed by a private oral defense assessed by the student's Thesis Committee.
- Students are **required** to submit their final written thesis (together with signed signature page) to the university before the next designated graduation deadline (April 1, August 1, or December 1).
- Under no circumstances will a student delay submission of their final thesis beyond 6 months of completing their thesis defense.
- Instructions on final thesis preparation and submission below:
<https://www.bc.edu/content/bc-web/schools/morrissey/sites/current-graduate-students/dissertation-checklist.html>
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Additional Notes:

- Student's thesis committee will be defined at their second-year orals, and this committee will follow the student's progress throughout their time at BC – third year seminar, fourth-year proposal and final thesis defense.
- Departure from the PhD program with a Master's (MS) degree requires the following:
 - Completion of 18 course credits (6 courses)
 - Cumulative GPA of 3.0
 - Completion of at least 1 full year (January to December) of research
 - Submission of a written thesis to the thesis committee (at least 1 week prior to oral defense, if applicable)
 - Oral defense of the thesis to the thesis committee
 - Students that have already completed their oral exam are exempt from the oral defense of their Master's thesis (regardless of pass/fail status of their orals).
 - Students are **required** to submit their final written thesis (together with signed signature page) to the university before the next designated graduation deadline (April 1, August 1, or December 1).
 - Under no circumstances will a student delay submission of their final thesis beyond 6 months of completing their thesis defense.
 - Instructions on thesis preparation and submission below:
 - <https://www.bc.edu/content/bc-web/schools/morrissey/sites/current-graduate-students/thesis-checklist.html>