

CHEMISTRY MAJOR & PRE-HEALTH (CH)

The Chemistry major provides a strong foundation in all core areas of the discipline, including organic, inorganic, physical, and analytical chemistry. Students completing this major will obtain a degree certified by the American Chemical Society. Some of our other majors also lead to ACS certification, depending on the electives chosen.

For simplicity, the recommended path through the major is presented below. See the advising worksheet for alternative paths that satisfy this major's requirements.

Core Courses

1. General Chemistry with Quantitative Analysis (1 year)
 - o Recommended: CH109 + CH110
 - o **or** CH101 + CH102 + CH201(2 units) **or** CH101 + CH116 + CH201(2 units)
2. Organic Chemistry with Qualitative Analysis (1 year)
 - o Recommended: CH211 + CH212
 - o **or** CH203 + CH214 **or** CH203 + CH204 + CH220(2 units) **or** CH 218 + CH214 **or** CH218 + CH204 + CH220(2 units)
3. Inorganic Chemistry (1 semester)
 - o CAS CH232 (spring)
4. Physical Chemistry (2 semesters)
 - o CH351 – Physical Chemistry I: Quantum Mechanics (spring)
 - o CH352 – Physical Chemistry II: Statistical Thermodynamics (fall)
5. Biochemistry (1 semester)
 - o BB421 (fall)
6. Advanced Chemistry Lab Electives (choose 2)
 - o CH301, CH303, CH354, CH524

Required Related Courses

1. Calculus (2 semesters)
 - o CAS MA123 + MA124
2. Mathematical Methods for Molecular Science (1 semester)
 - o CAS CH225 (fall)
3. General Physics (2 semesters, calculus-based)
 - o Recommended: CAS PY211 + PY212 **or** PY251 + PY252

Electives Two versions of the major are available: Option A and Option B.

- **Option A:** Two advanced 4-unit CH courses at the 400-level or above, excluding CH525. CAS BB 422 can satisfy this requirement as can CAS CH courses numbered 600–999. One elective may be satisfied by:
 - o One semester of Senior or Honors Research (CH401/CH402 or CH461/CH462)
 - o Declared STEM major or minor in select disciplines
 - o Participation in the MMEDIC program

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- **Option B:** One advanced 4-unit CH course at the 400-level or above (excluding CH525 and research courses) or BB422.

Sample 4-Year Plan

Year	Fall Semester	Spring Semester	Notes
First	CH109*, MA123, BI107* , CC101/WR120 <u>Optional:</u> CH195/FY101	CH110*, MA124, BI108* , WR15x	~ CH225 is recommended for fall if MA124 is complete. Students could then begin PY211 in their spring semester. ~CH195 is a good way to get oriented in the major and meet other aspiring chemists. If CH195 conflicts with your other courses, register for FY101.
Second	CH211*, CH225 BI (203/213, 206/216, or physiology*), PY211*, <u>Optional:</u> FY103	CH212*, BI (203/213, 206/216, or physiology*), PY212*, Statistics	~ See notes below regarding pre-health recommendations for additional upper-level biology courses.
Third	BB421*, CH352, PS/SO Course, Language 1	BB422* , CH351, PS/SO Course Language 2	~Advanced Chemistry labs can be delayed to senior year for flexibility. ~CH232 is typically completed junior year, but many pre-health students take to senior year. ~BB422 will satisfy one of your major electives.
Fourth	CH401/461/Open, CHE elective #2, Lab elective* #1, Language 3	CH402/462/Open, CH232*, Lab elective* #2, Language 4, <u>Optional</u> SY101	~CH401/402 = Honors Research ~CH461/462 = Senior Research

* = laboratory course. **Bold** = pre-health courses outside of your major

**Advice from Pre-Health Advising:

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- If you have AP/IB or other advanced credit for CAS BI 107 and CAS BI 108, we still recommend you take CAS BI 107 and CAS BI 108, and one additional upper-level biology course.
 - Some health profession schools do not accept advanced credits towards their prerequisite requirements.
 - To enhance your foundational knowledge in the biological sciences, we recommend you consider taking an additional upper-level biology course such as:
 - BI 203 (Cell Biology) or BI 213 (Intensive Cell Biology)
 - BI 206 (Genetics) or BI 216 (Intensive Genetics)
 - Or a physiology course – BI315 (Systems Physiology)
 - If you wish to use advanced credits or take a different set of biology course work to satisfy the health profession schools' biology requirement, we recommend you meet with a pre-health advisor to discuss your plans.
- One semester each of Psychology and Sociology are recommended for pre-medical students to prepare for the MCAT.
 - For Psychology, we recommend PS101 or PS261
 - For Sociology, we recommend SO100 or SO215
- Many health profession schools require a semester of statistics. You can select from MA113, MA115, MA116, MA213, or MA214
 - Please note that students are only allowed credit for one of the following: MA113/115/213 and MA116/214.
- As a Chemistry major, two semesters of biochemistry are recommended to satisfy prerequisite requirements and for pre-medical students to prepare for the MCAT. If you do not take BB422, you will need to self-study that content for medical school.
- If you do not intend to take a gap year, pre-medical students should complete Biochemistry, Statistics, and Psychology/Sociology by the end of your third year at BU.

** The Pre-professional Advising Office: Pre-health provides conservative course recommendations based on each student's major(s), minor(s), and intended health profession. These recommendations may change over time in response to updates in your academic or career goals, as well as evolving requirements from health profession schools and programs. Ultimately, it's the student's responsibility to be aware of the specific requirements of the schools to which they plan to apply.