

CHEMISTRY: CHEMICAL BIOLOGY SPECIALIZATION (CCB)

This track overlaps with the Chemistry and the Biochemistry and Molecular Biology major in Years 1–2, allowing students to explore both chemistry and biology courses without limiting their options later. This specialization has better overlap with pre-health requirements than the other chemistry majors, making it a good choice for future health professionals.

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

Core Courses

1. General Chemistry with Quantitative Analysis (2 semesters)
 - Recommended: CH109 + CH110
 - **or** CH101 + CH102 + CH201(2 units) **or** CH101 + CH116 + CH201(2 units)
2. Organic Chemistry with Qualitative Analysis (2 semesters)
 - Recommended: CH211 + CH212
 - **or** CH203 + CH214 **or** CH203 + CH204 + CH220(2 units) **or** CH214 + CH218
3. Inorganic Chemistry (1 semester)
 - CAS CH232 (spring)
4. Physical Chemistry (2 semesters)
 - CH352 – Physical Chemistry II: Statistical Thermodynamics (fall)
 - CH525 – Biophysical Chemistry (spring course, CH225 recommended, not required)
5. Biochemistry and Chemical Biology (3 semesters)
 - BB421(fall)
 - BB422 (spring) or CH623 (fall)
 - CH524 (spring)

Required Related Courses

1. Biology (1 semester):
 - CAS BI08 (spring)
2. Cell Biology (1 semester)
 - Recommended: CAS BI213 (fall) **or** BI203 (both semesters)
3. Calculus (2 semesters)
 - Recommended: CAS MA123 + MA124
 - **or** MA 121 + MA122 + CH225
4. General Physics (2 semesters, calculus-based)
 - Recommended: CAS PY211 + PY212
 - **or** PY211+ PY106 **or** PY251 + PY252)

Electives

Two additional 4-unit electives must be completed. At least one elective must be at the **400-level or higher**, and at least one must be a **CAS CH course**. Completion of two terms of research

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(CAS CH 401, 402 or CAS CH 461, 462) can be used to fulfill one elective requirement; the research must involve a project at the chemistry-biology interface.

Sample 4-Year Plan

Year	Fall Semester	Spring Semester	Notes
First	CH109*, MA123, Language 1, CC101/WR120	CH110*, MA124, Language 2, BI108*	CH195 is not required, but it is a good way to get oriented in the major and meet other aspiring chemists.
	<u>Optional</u> CH195/FY101		
Second	CH211*, BI213/203, PY211*, Language 3	CH212*, PY212*, WR15x, Language 4	
Third	BB421*, CH352, Open/HUB x2	BB422*/Open CH524*, CH525, Open/HUB	Pre-med students should take BB422, rather than CH623, to prepare for the MCAT.
Fourth	CH401/461/Open, CH623/CCB Elective #1, Open/HUB x2	CH402/462/Open, CH232*, CCB Elective #2, Open/HUB	CH401/402 = Honors Research CH461/462 = Senior Research
		<u>Optional</u> SY101	

* = course with laboratory component