

Suggested Course Schedule for Chemistry Majors

The information below outlines the sequence of required **science** courses for a typical chemistry major. AP credits or a change of majors may have you on a different track. Please feel free to contact the chemistry advisor (Dr. Goodenough, dgoodeno@nd.edu) if you have questions about what courses you should take. **Note:** *Students who are interested in study abroad options should see Dr. Goodenough as soon as you know where you would like to go. Studying abroad requires some extra planning and rearrangement of a few of your science courses. The sooner we start planning out your schedule, the easier it will be to open up the semester you want to be abroad.*

Freshman Year - (16 credits minimum - 18 credits **maximum** recommended load each semester)

Fall	CHEM 10181/11181	Intro to Chemical Principles (with lab)
	PHYS 10310/11310	General Physics I (with lab)
	MATH 10550	Calculus I

Spring	CHEM 10182/11182	Organic Structure and Mechanism (with lab)
	PHYS 10320/11320	General Physics II (with lab)
	MATH 10560	Calculus II

Additional Notes:

- If you arrived with AP credit for physics (PHYS 10310/10320) and you are considering a pre-professional track, note that some medical schools require physics to be taken in college. Therefore, you may want to retake physics during your freshman year (PHYS 10310/11310 fall, 10320/11320 spring). If you know that you are not going the pre-professional route, then you may accept the AP credit and take other courses instead.
- CHEM 20262 provides a broad survey of the mathematics required for Physical Chemistry, so it is best to take this class during the spring semester before you start the Physical Chemistry sequence. If you are considering a double or supplemental Mathematics or ACMS major, or the bioengineering minor, CHEM 20262 *should* be replaced with Calc III + Intro to Linear Algebra / Differential Equations.
- You are not required to use Calc I/II AP credits, and there is value in seeing this content at a college level. If you really enjoy math or are considering studying it further, you may want to consider taking Calc III instead of repeating Calc I/II.

Sophomore Year

Fall	CHEM 20283/21283	Organic Reactions and Applications (with lab)
	CHEM 23201	Chemistry Seminar (one with Thurston Miller)

Spring	CHEM 20284/21284	Chemistry Across the Periodic Table (with lab)
	CHEM 20262	Mathematical Methods

Additional Notes:

- If you are pre-professional and have not already taken the introductory biology courses, you should try to fit them in sophomore year (Fall: BIOS 10171/11173; Spring: BIOS 10172/11174).
- If you are interested in studying abroad or one of the combination programs, consider taking analytical chemistry (CHEM 30333/31333) during the spring of your sophomore year. There are no prerequisites for this class so it can be taken at any level.
- After completing CHEM 23201, you will need to take two more chemistry seminars. You may take any combination of CHEM 23202 (offered in the spring) or 23203 (offered in the fall). Only one may be taken per semester.
- If you are interested in medical or professional school, sophomore year is the time to connect with the pre-professional advisors, to think about volunteer activities and other ways to prepare you for medical school.

(Sophomore notes continued on back)

- If you are considering study abroad and have not already done so, please see Dr. Goodenough.
- If you are interested in research, the sophomore year is also a great time to talk with the faculty and to find a lab that matches your interests. You must be registered for CHEM 48498 (or an equivalent course in another department) to receive credit for research. Students typically enroll in 1-2 credits of research, depending on time commitments to other classes. Exact expectations should be discussed with the research advisor you choose. Contact Dr. Steven Wietstock (swietsto@nd.edu) for research overrides.

Junior Year

Fall CHEM 30321 Physical Chemistry I
 CHEM 30333/31333 Analytical Chemistry (with lab)
 Chem Seminar and/or Science Elective (optional)

Spring CHEM 30322/31322 Physical Chemistry II (with lab)
 CHEM 40420 Principles of Biochemistry
 Chem Seminar and/or Science Elective (optional)

Additional Notes:

- Check your GPS and see Dr. Goodenough if there are issues with any chemistry credits. Remember that you need 6 credits in science electives by the end of your senior year. CHEM 48498 (Undergraduate Research) is one way to satisfy the elective requirement.
- Analytical Chemistry (CHEM 30333/31333) and Biochemistry (CHEM 40420) are offered in both the fall and spring semesters. These can be taken either semester in your junior or senior years. If you are interested in medical or other professional schools, you should make sure you have taken CHEM 40420 by the end of your junior year in preparation for the MCAT (or other professional entrance exams).
- If you are interested in teaching, you might explore jobs in the undergraduate labs and first-year tutoring programs.

Honors in Chemistry and Biochemistry Program Criteria and Requirements

- You must have an overall GPA of 3.50 or higher.
- You should submit your application by the end of the first week of your senior year. The application can be found on the undergraduate page of the chemistry department website.
- You must complete a minimum of two semesters of CHEM 48498 (or another approved research course) during your **junior or senior year**.
- In your last semester, you should enroll in CHEM 48500 (Research Thesis in Chemistry or Biochemistry) – see Dr. Wietstock for the course override. You can take CHEM 48500 concurrent with CHEM 48498. To receive honors you must achieve a grade of B or higher in CHEM 48500.

Senior Year

Please double check your GPS and make sure that all the classes you believe are being counted show up properly. Make sure you sketch out both semesters to ensure that you are able to fulfill all of your university and departmental requirements during the remaining two semesters.

Fall CHEM 40443/41443 Advanced Inorganic Chemistry (with lab)
 Chem Seminar and/or Science Elective (optional)

Spring CHEM 40434 or 40436 Physical Methods or Instrumental Methods
 Chem Seminar and/or Science Elective (optional)

Additional Notes: If you are interested in graduate school, register for the GRE and subject tests in the fall semester (subject tests are only offered on specific dates, so pay attention to deadlines for registration for those exams).