

What Courses To Take After CHEM BC3231x (Organic II)

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Congratulations on your upcoming completion of Organic II! As you plan your Spring 2022 program, here is a guide to help decide which chemistry courses to take next.

- 1) If you are considering a major in chemistry or biochemistry then you should enroll in *both* **CHEM BC3242y (Quantitative Analysis Lecture)** and **CHEM BC3338y (Quantitative and Instrumental Techniques Laboratory)**. If you are *also* considering a pre-health or other professional track, CHEM BC3242y will count as a second semester of 'general' chemistry for any programs you apply to that require it.
- 2) If you are *not* considering a major in chemistry or biochemistry and want to complete the fourth semester of a two-year chemistry sequence, you have several options. These options may be of particular interest to students preparing for future study in the health professions. We recommend that you consult both with the chemistry department and Health Professions Advising at Beyond Barnard if you have questions about which option is best for you. **Note that CHEM BC3232 Chemistry IV will not be offered in Spring 2022.**
 - a. Take **CHEM BC3282 Biological Chemistry** as your fourth-semester chemistry class. This course will be offered in Spring 2022, Fall 2022, and every fall semester thereafter. The prerequisites are Organic II (which you will soon have completed) and BIOL BC1502y Molecular and Cellular Biology. Taking Biological Chemistry right after completing the organic chemistry sequence is an ideal time. One semester of general chemistry, two of organic, and one of biochemistry meets the chemistry requirements at a range of health-professions-training institutions, including some (but not all) medical schools. **Biochemistry UN3501** and **UN3300** courses at Columbia are also available. Either of these two Columbia courses is appropriate for pre-health admission prerequisites. However, only **Biochemistry UN3501** can be counted toward a chemistry or biochemistry major or for the chemistry minor. Also, Barnard students have had difficulties getting into **Biochemistry UN3501** in recent semesters.
 - b. Take **CHEM BC3271y Inorganic Chemistry**. For students having completed the organic chemistry sequence and requiring a second semester of 'general' chemistry, this is the best option for Spring 2022.
 - c. Take **CHEM BC3242y Quantitative Analysis Lecture**. This course can also serve as a match for a second semester of 'general' chemistry following completion of Organic I and II. Students who are not chemistry or biochemistry majors and are taking CHEM BC3242y as their fourth-semester chemistry course are *not* required to take the Quantitative Analysis Lab (CHEM BC3338y).
 - d. Beginning in Spring 2023, the Barnard Chemistry Department plans to offer a **Descriptive Inorganic Chemistry** course. This will be a second semester of 'general' chemistry, covering topics including the speciation of elements, redox and acid/base reactions, transition-metal and coordination chemistry, bioinorganic chemistry, and chemistry of the main-block elements (including P, N, S).

Please Note: Every year, some students attempt to take Columbia's CHEM UN1404 *after* Organic II and discover that they do not receive course credit. This is because the Barnard chemistry sequence is designed beginning with a one-semester general chemistry course leading directly into organic and incorporating material covered in both semesters of a two-semester general chemistry sequence like that at Columbia. This results in significant overlap between Barnard's General Chemistry (CHEM BC2001x), for which you have already received credit, and CHEM UN1404. A zero-point course has two consequences: (1) the grade does not count in GPA calculations, and (2) professional schools may not accept a zero-point course to fulfill admissions prerequisites.

Can't Get Enough Organic Chemistry?

Students who have completed Organic Chemistry II and would like to continue their study of the subject are encouraged to enroll in the 3.0-credit lecture course **CHEM BC 3280y Advanced Organic Chemistry**. Advanced Organic is offered every other academic year and will be offered next in Spring 2023. You do not have to be a chemistry or biochemistry major to take Advanced Organic, and we have had a number of non-majors take the course in past years.

The Chemistry Minor

We offer a minor in Chemistry which overlaps considerably with the courses required for most pre-health professions programs. After completing Organic II lecture, to earn a minor in chemistry, you must complete the following courses: **CHEM BC3338y Quantitative and Instrumental Techniques Laboratory**, **BC3333x Modern Techniques of Organic Chemistry Laboratory** (if you did not already take it this semester) and one additional course from the following list:

CHEM BC3242y Quantitative Analysis

CHEM BC3252 Thermodynamics and Kinetics

CHEM BC3271 Inorganic Chemistry

CHEM BC3282 Biological Chemistry (**Biochemistry UN3501** is also acceptable, but UN3300 is *not*)

Please Note: If your major requires Organic I lecture *and* lab as major requirements, then in addition to the three courses above you must take one additional chemistry course at the 3000 level or higher. This is because there are limits on the number of courses that can be counted toward both a major and a minor.