

Chemistry for Life Science Students

Summary: A three semester course sequence, with a total of 13 course credit hours including both lecture and laboratory, was designed to provide a strong chemistry foundation for students planning to pursue degrees and/or careers in areas related to the life sciences. This sequence is an *alternative to*, and not a replacement for the four semester sequence (CHEM 1061/2/5/6, CHEM 2301/2/4, CHEM 2311). The directive is to prepare students for future study in the life sciences, and includes satisfying the prerequisite requirements of the biochemistry course for non-majors, currently BIOC 3021 but being redesigned as BIOC 3022.

Who is this course sequence designed to serve? UMN students with interests in life science related subjects and majors, and/or planning for futures working in life science related careers. The first and second semesters may also be appropriate for many programs requiring less than the full chemistry complement.

Who is this course sequence NOT specifically designed to serve? UMN students with interest in chemistry intensive majors, those planning to pursue chemistry related careers, or students that simply want to take more chemistry. Examples include, but are not limited to, chemistry, chemical engineering, and biochemistry majors. These students will continue to be served by the current four semester chemistry sequence.

Motivation

- The need for students that are pursuing majors in the life sciences or planning for futures in related areas to reduce the time and number of course credits required to complete the foundational chemistry content through the biochemistry for non-majors course, BIOC 3021.
- The fact that many programs have already de facto reduced the chemistry requirements by a semester. Due to prerequisites, they only had one way to accomplish this in the current system, and they eliminated the last semester lecture and laboratory of organic chemistry even though the content was more relevant to life science studies than other parts of the four semester chemistry curriculum.
- The opportunity to improve service to all students taking chemistry. The large number of degree programs represented (138 majors have representation) presents an extreme challenge when trying to address the enormous breadth of backgrounds with a single course sequence. Focusing on life science related students allows for more targeted and relevant course design.

Course Sequence Structure

semester 1	semester 2	semester 3
lecture (CHEM 1081, 3 cr.)	lecture (CHEM 1082, 3 cr.)	lecture (CHEM 2081, 3 cr.)
laboratory [†] (1 cr.)	laboratory (CHEM 1086, 1 cr.)	laboratory (CHEM 2085, 2 cr.)

[†]The first semester laboratory will be CHEM 1065, a course that is currently offered and is shared with the current general chemistry sequence.

University of Minnesota Student Learning Outcomes Addressed

- Can identify, define, and solve problems
- Can locate and critically evaluate information
- Have mastered a body of knowledge and a mode of inquiry
- Can communicate effectively
- Have acquired skills for effective citizenship and life-long learning