

Five Year B.S./M.S. in Biochemistry

The Department of Chemistry and Biochemistry offers the opportunity for Biochemistry students to participate in an **accelerated curriculum** that leads to both the Bachelor of Science and Master of Science degrees. This curriculum follows the normal B.S. degree for three years, but adds two graduate level courses during their fourth year that are applied to the subsequent M.S. program. These graduate courses cannot be included in the student's B.S. degree program. The fifth year includes three graduate courses, research credits, and the Masters Thesis. [Should a student have completed 12 graduate credits, but not yet completed the undergraduate degree, they will be considered graduate for financial aid and tuition purposes and coded as 'graduate' in SIS. They will no longer be eligible for undergraduate scholarships, nor will they be eligible for graduate assistantships]. Students must apply to the Graduate College during their fourth year for official admission to the M.S. program immediately following completion of their B.S. degree requirements.

Students who are interested in this unique opportunity should meet with a member of the **CBC Graduate Program Committee** in the fall semester of their junior year to plan for the course work and thesis. In the spring semester of their junior year, students must have their Senior Thesis and M.S. Thesis mentor approved by the Advisory Committee. This research mentor must have an appointment (primary or joint) in CBC or must have an ongoing research collaboration with one of our primary faculty members. | [General advice concerning selection of a research mentor](#) ^[1] | and a list of | [specific faculty who qualify as research mentors for the M.S. degree](#) ^[2] | are provided on a separate page. The Senior Thesis (or Honors Thesis) for the B.S. degree comprises preliminary work for the M.S. Thesis that is to be completed during the fifth year. A thesis committee consisting of the approved mentor and two faculty from the CBC program must be selected during the spring semester of their junior year. This committee will approve the proposed graduate requirements in completing the BS/MS degree.

The **Master of Science** degree requires 30 units (minimum) of graduate work in 500-level courses or above, up to 15 of which may be in thesis research. At least one-half of the required units must be in courses offering regular letter grades. Up to 12 units of graduate credit earned as an undergraduate and not applied toward the baccalaureate degree can be applied for credit toward a master's degree. Required courses for the M.S. degree include Proteins and Enzymes 565 and two other courses from the list below. The student, with approval from the thesis committee, chooses the remaining graduate courses required for the degree.

B.S./M.S. Degree Course List

- **Genetics, GENE 545** — covers basic concepts of genetic analysis, primarily in Eukaryotes.
- **Proteins and Enzymes, BIOC 565** — covers principles of protein structure and function, and the kinetics and mechanisms of enzyme action.
- **Nucleic Acids, BIOC 568** — covers DNA replication and repair, transcription and RNA processing, translation, gene regulation, critical analysis of papers, and hypothesis-testing.
- **Biological Structure, BIOC 585** — covers approaches to the study of biomolecular structure.

[Biochemistry Academic Plan for the 5-Year B.S./M.S. Program](#) ^[3]

Plan for Freshman Year through Fifth Year

[Application form](#) ^[4] [\[pdf\]](#)

[Undergraduate](#) ^[5] [Courses](#) ^[6]

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