

Emphasis-Molecular, Cellular, & MicroBio

- [B.S. in Biological Science](#)
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B.S. in Biological Science Description

The B.S. in biological science offers in-depth study of biology and other natural sciences while preparing the student for a variety of careers or for graduate work in many fields including medicine, organismal biology, dentistry, pharmacy, veterinary medicine, education, cell or molecular biology, ecology and conservation biology. This is the degree of choice for those aspiring to be professional scientists. Students may choose one optional emphasis in ecology and evolutionary biology; integrative biology; molecular, cellular, and microbiology; organismal biology; pre-health biological sciences.

Minimum Total Credit Hours: 120 General Education Requirements

Math 261 and 262 are required for the B.S. degree.

Course Requirements

A major in biological science for the B.S. degree consists of a minimum of 42 semester hours of biology including including the introductory courses Bisc 160, 161, 162, 163; ecology (Bisc 322); genetics (Bisc 336); physiology (Bisc 330 or Bisc 438 or Bisc 516); one of the following advanced biology courses (BISC 415, 418, 427, 440, 504, 512, 518, 519, 521, 530, 547, 553); and biology electives to bring the total to 42 credit hours with at least 34 hours at the 300-level or above. Graduating seniors are required to complete the major field achievement test (Bisc 498)

Biology majors may choose to specialize by using their biology electives to add one optional emphasis, which requires a minimum of three courses from the approved list for the emphasis. The same course may not satisfy the biology core courses and an emphasis area. Students who complete relevant special topics, travel course, or research course will consult with the department prior to enrollment in the course to determine if it fulfills a course for an emphasis area.

Seminars and nonmajor courses do not satisfy the minimum or 300-level requirements. In addition, two courses in calculus (Math 261 and 262), 8 hours of general chemistry (Chem 105, 106, 115, and 116), and two semesters of organic chemistry (Chem 221, 222, 225, 226) are required. Bisc 336 and Bisc 330 should be taken during the sophomore year, and Bisc 322 and Bisc 440 should be taken during the junior year.

Other Academic Requirements

Students must achieve a grade of C or better in all course work counted for the major in biological science, and every biology course requires a grade of C or better in all prerequisite courses, including those prerequisite courses from other departments. For example, Bisc 160 and 161 must be passed with a grade of C or better before Bisc 162 and 163 may be taken. In addition, Bisc 160, 161, 162, and 163 must be passed with a grade of C or better before any additional biology course at the 300 level or above is attempted.

Bisc 150, 206, 207, 210, 220, and 492 can not be used toward a major in biological sciences.

Emphasis-Molecular, Cellular, & MicroBio Course Requirements

Emphasis in Molecular, Cellular, and Microbiology:

Requires a minimum of three courses from the following list:

- Bisc 300: Research Methods in Biology
- BISC 305: Science in Practice
- Bisc 306: Virology
- Bisc 333: General Microbiology
- Bisc 370: Introductory Molecular Genetics
- Bisc 372: Introductory Cell Biology
- Bisc 414: Immunology and Serology
- Bisc 418: Introduction to Molecular Systematics
- Bisc 436: Human and Vertebrate Genetics
- Bisc 438: Microbial Physiology
- Bisc 439: Developmental Biology
- Bisc 440: Cell and Molecular Biology
- Bisc 503: Topics in Bioinformatics
- Bisc 507: Cell Biology of Cancer
- Bisc 509: Microbial Genetics
- Bisc 511: Applied Microbiology
- Bisc 520: Medical Microbiology
- Bisc 521: Cell Physiology
- Bisc 522: Microbial Ecology
- Bisc 523: Molecular Microbiol. of Soils & Sediment
- Bisc 541: Cell Biol. of Neurodegenerative Disease
- Bisc 542: Microbial Diversity
- Bisc 548: Plant Cell and Developmental Biology
- Bisc 555: Radiation Biology
- BISC 560: Microbial Experimental Evolution

