B.S., MAJOR IN BIOLOGY

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BIO 202 & BIO 206
General Biology: Cellular and Molecular
and General Biology: Cellular and Molecular Laboratory

BIO 201 & BIO 205
General Biology: Organismal and Population
and General Biology: Organismal and Population Laboratory

Upper Division Biology courses

Seven upper-division lecture courses. All Biology courses of three or more credits, except BIO 297, BIO 397, BIO 493, BIO 495 and BIO 497, are lecture courses. These courses must consist of:

- Five lecture courses at the 300- and/or 400-level. These courses must include at least one course from each of the following three areas:
  - Molecular/Cellular
    - BIO 317: Genetics
    - BIO 362: Cell Structure and Function
    - BIO 432: Immunology
    - BIO 451: Microbiology
    - BIO 462: Neurobiology
  - Organismal:
    - BIO 335: Zoology
    - BIO 341: Botany
    - BIO 371: Animal Behavior
    - BIO 433: Vertebrate Comparative Anatomy
    - BIO 445: Environmental Physiology
    - BIO 449: Animal Physiology
    - BIO 461: Entomology
    - BIO 462: Neurobiology
    - BIO 467: Developmental Biology
  - Population/Ecology/Evolution:
    - BIO 385: The Ecology, Geography and Health of Lakes
    - BIO 390: Environmental Science
    - BIO 435: Coastal and Estuarine Ecology
    - BIO 445: Environmental Physiology
    - BIO 481: Terrestrial Ecology
    - BIO 485: Marine And Freshwater Ecology

- One 500-level "focus" course

Applicable courses are:
- BIO 501: Bioinformatics: Genomics Approach
- BIO 517: Current Topics in Genetics
- BIO 520: Genomes and Chromosomes
- BIO 523: Environmental Toxicology
- BIO 532: Current Topics in Cellular and Molecular Biology
- BIO 539: Ecology of Zoonotic Diseases
- BIO 541: Advanced Topics in Plant Biology
- BIO 545: Plant Diversity and Evolution
- BIO 551: Current Topics in Microbiology
- BIO 559: Special Topics in Physiology
- BIO 567: Current Topics in Neuroscience
- BIO 580: Current Topics in Ecology

One additional course of the student’s choice. This course can be any upper-division BIO lecture course or one of a select group of offerings by other departments. Please check with the Biology department for a list of currently approved courses.

Four laboratory courses

This requirement may be satisfied by any combination of 4 credit lecture + laboratory or 1 or 2 credit laboratory-only courses. Lecture + laboratory courses may apply simultaneously to both the lecture and laboratory requirements.

The following courses apply toward this requirement:

Lecture/Laboratory courses
- BIO 310: Biostatistics
- BIO 335: Zoology
- BIO 341: Botany
- BIO 385: The Ecology, Geography and Health of Lakes
- BIO 433: Vertebrate Comparative Anatomy
- BIO 435: Coastal and Estuarine Ecology
- BIO 445: Environmental Physiology
- BIO 451: Microbiology
- BIO 461: Entomology
- BIO 467: Developmental Biology
- BIO 481: Terrestrial Ecology
- BIO 501: Bioinformatics: Genomics Approach
- BIO 520: Genomes and Chromosomes

Laboratory-only courses
- BIO 318: Genetics Laboratory
- BIO 372: Animal Behavior Laboratory
- BIO 419: Molecular Genetics Laboratory
- BIO 450: Animal Physiology Laboratory
- BIO 463: Neurobiology Laboratory
- BIO 486: Freshwater Ecology Laboratory

In addition, one of the following may be used as the equivalent of a laboratory course: BIO 490 may be counted as one lab course if taken twice. BIO 497 may be counted as one lab course if: 1. At least six credits of 497 are taken over multiple semesters. 2. The research work is presented by the student at a regional or national scientific meeting. 3. The research work is also presented by the student as a poster at the Department of Biology Research Colloquium.

Total Credits

BIO 297 Directed Research, BIO 397 Directed Independent Research (Extramural), BIO 492 Seminar in Undergraduate Classroom Instruction, BIO 493 Directed Independent Readings, BIO 495 Directed Independent Study and BIO 497 Directed Independent Research do not apply toward the major requirements. BIO 490 Seminar In Undergraduate Biology Instruction can be applied toward the lab requirement if taken twice.

Upon petition prior to enrollment, courses in departments other than Biology (such as CHM 371 Biochemistry of Metabolism or BMS 521 Principles of Biochemistry) may be approved for non-laboratory biology major credit; a student may exercise this option for only one such course.

Requisite Courses

At least twenty-four credits in the following courses: CHM 203 General Chemistry I, CHM 204 General Chemistry I Laboratory, CHM 205 General Chemistry II (or CHM 285 Advanced General Chemistry II), CHM 206 General Chemistry II Laboratory (or CHM 286 Chemical and Statistical
Analysis Laboratory), CHM 321 Organic Chemistry I, CHM 322 Organic Chemistry I Laboratory, CHM 323 Organic Chemistry II, CHM 324 Organic Chemistry II Laboratory; General Physics I (201 or 211 or 213); PHY 205 General Physics Laboratory I; General Physics II (202 or 212); PHY 206 General Physics Laboratory II.