

Biology

Phone: 314-935-6860
Email: webmaster@biology.wustl.edu
Website: http://wubio.wustl.edu

Minors

The Minor in Biology

Units required: 18 units of biology and 14 units of chemistry

Required courses:

Code	Title	Units
Biol 2960	Principles of Biology I	4
Biol 2970	Principles of Biology II	4
Chem 111A	General Chemistry I	3
or Chem 105	Introductory General Chemistry I	
Chem 112A	General Chemistry II	3
or Chem 106	Introductory General Chemistry II	
Chem 151	General Chemistry Laboratory I	2
Chem 152	General Chemistry Laboratory II	2
Chem 261	Organic Chemistry I with Lab	4
Total Units		22

Elective courses:

The minor requires 10 advanced units in biology selected from the following:

Code	Title	Units
Biol 3010	Biotechnology Project	3
Biol 3041	Plant Biology and Genetic Engineering	4
Biol 3058	Physiological Control Systems	2
Biol 3100	R Workshop in Biology	1
Biol 3110	Vertebrate Structure Laboratory	4
Biol 3151	Endocrinology	3
Biol 3220	Woody Plants of Missouri	3
Biol 324	Human Genetics	3
Biol 328	Principles in Human Physiology	4
Biol 334	Cell Biology	3
Biol 3411	Principles of the Nervous System	3
Biol 3421	Introduction to Neuroethology	3
Biol 3422	Genes, Brains and Behavior	3
Biol 3423	Behavioral Genetics Laboratory	3
Biol 347	Darwin and Evolutionary Controversies	3
Biol 349	Microbiology	4
Biol 3491	Microbiology Laboratory	3

Biol 3492	Laboratory Experiments with Eukaryotic Microbes	3
Biol 3493	Bacterial Bioprospecting and Biotechnology	3
Biol 3501	Evolution	4
Biol 354	Physics of Living Systems	3
Biol 360	Biophysics Laboratory	3
Biol 370	Animal Behavior	3
Biol 373W	Laboratory on the Evolution of Animal Behavior (Writing Intensive)	3
Biol 381	Introduction to Ecology	3
Biol 4023	How Plants Work: Physiology, Growth and Metabolism	3
Biol 4030	Biological Clocks	3
Biol 404	Laboratory of Neurophysiology	4
Biol 4071	Developmental Biology	3
Biol 4181	Population Genetics	3
Biol 4182	Macroevolution	3
Biol 4183	Molecular Evolution	3
Biol 419	Community Ecology	3
Biol 4193	Experimental Ecology Laboratory	4
Biol 4195	Disease Ecology	4
Biol 4220	Practical Bioinformatics	4
Biol 424	Immunology	4
Biol 4270	Problem Based Learning in Biomedical Sciences	3
Biol 4310	Biology of Aging	3
Biol 4342	Research Explorations in Genomics	4
Biol 434W	Research Explorations in Genomics (Writing Intensive)	4
Biol 437	Laboratory on DNA Manipulation	4
Biol 4381	Cell-Based Tissue Engineering and Regenerative Medicine	3
Biol 4492	Infectious Diseases: History, Pathology, and Prevention	3
Biol 451	General Biochemistry	4
Biol 4522	Laboratory in Protein Analysis, Proteomics and Protein Structure	3
Biol 4523	Molecular Methods in Enzyme Analysis	4
Biol 4525	Structural Bioinformatics of Proteins (Writing Intensive)	4
Biol 4540	Physics of Living Systems	3
Biol 4580	Principles of Human Anatomy and Development	3
Biol 4715	Basic Cancer Biology	3
Biol 4716	Advanced Cancer Biology	3

Biol 472	Behavioral Ecology	4
Biol 4810	General Biochemistry I	3
Biol 4820	General Biochemistry II	3
Biol 4833	Protein Biochemistry	3

Additional Information

All courses used for the biology minor must be taken for a letter grade. A grade of C- or better must be earned in all of these courses. A student may not receive credit for both Biol 370 and Biol 472, or for both Biol 4342 and Biol 434W.

The Minor in Bioinformatics

Mindful of the emerging opportunities at the interface of biology and computer science, the Department of Biology and the Department of Computer Science & Engineering have fashioned the minor in bioinformatics. This program serves students from both departments as well as other students from the natural sciences and engineering with an interest in this field.

Units required: 23 to 24 units, as described below

Core courses:

Code	Title	Units
Biol 2960	Principles of Biology I	4
Biol 2970	Principles of Biology II	4
CSE 131	Introduction to Computer Science	3
CSE 247	Data Structures and Algorithms	3
ESE 326	Probability and Statistics for Engineering	3
or Math 2200	Elementary Probability and Statistics	
or Math 3200	Elementary to Intermediate Statistics and Data Analysis	
or Math 3211	Statistics for Data Science I	
or DAT 120 & DAT 121	Managerial Statistics I and Managerial Statistics II	
Total Units		17

Advanced biology elective: Choose one of the following:

Code	Title	Units
Biol 3492	Laboratory Experiments with Eukaryotic Microbes	3
Biol 4181	Population Genetics	3
Biol 4220	Practical Bioinformatics	4
Biol 4342	Research Explorations in Genomics	4
Biol 437	Laboratory on DNA Manipulation	4
Biol 4525	Structural Bioinformatics of Proteins (Writing Intensive)	4

Computer Science & Engineering elective: Choose one of the following:

Code	Title	Units
CSE 514A	Data Mining	3
CSE 584A	Algorithms for Biosequence Comparison	3
or Biol 5504	Algorithms for Biosequence Comparison	
CSE 587A	Algorithms for Computational Biology	3

Additional Information

It is anticipated that, for those students majoring in biology or computer science & engineering (CSE), some portion of the introductory sequence will overlap with the courses required for the major and that these courses will be applicable to both the major and the minor. Upper-level courses in biology and CSE used to fulfill the minor requirements may not be used to fulfill the requirements of another major or minor in Arts & Sciences. A minimum grade of C- is required for all courses to count toward the minor.