

Biology MS students, undergraduate majors, and minors may apply the following out-of-department courses toward their elective unit requirements. These are advanced content courses; generally, they require the Bio core, math, chemistry, or physics as prerequisites.

Not all courses have been approved for the maximum course units offered. Maximum course units and approved Biology unit values appear in parentheses below, i.e., (maximum/approved).

Since these courses are given in other departments, course availability and schedule is subject to change without notice. Students should contact the sponsoring department for additional details. Please check the prerequisites for each course, as these may vary.

Out-of-department courses taken for Biology elective credit must appear on this list or be approved by petition. If you took a course which appears on a previous list or has since been discontinued by its sponsoring department, the units can still apply towards your elective requirement if you took it during the year in which the list included it.

Undergraduate Students: There are a few courses under the 100-level that are on this list. These courses, and these courses ONLY are the exception to the rule that students must take courses numbered 100 or above to fulfill elective or minor requirements. Whenever possible, register for a 100-level course or higher. For example, instead of enrolling in ANTHRO 006 or HUMBIO 006, enroll in BIO 106.

Coterminal/MS Students: You must take courses designated primarily for graduate students. If the course you are interested in has an offering at the 100- and 200- level, be sure to enroll in the 200-level section. Courses on this list that are numbered below 100 are not permissible for fulfilling your degree requirements.

Anthropology (ANTHRO)

- 006 Human Origins (also 206; same as BIO 106, HUMBIO 006) (5/5) **graduate students cannot enroll in ANTHRO or HUMBIO 006; courses below 100 cannot count toward degree requirements.
- 113 Faunal Analysis (also 213; same as BIO 166/266) (5/5)
- 130C Current Issues in Paleoanthropology (also 230C; same as BIO 130) (1/1)
- 177 Environmental Change and Emerging Infectious Disease (formerly 179; also 277; same as HUMBIO 114) (5/3)
- 363 Demography and Life History Theory (formerly 155) (5/5)

Applied Physics (APPPHYS)

- 136 Biology by the Numbers (same as BIOC 236) (3/3)
- 192 Introductory Biophysics (also 292) (3/3)
- 223 Stochastic & Nonlinear Dynamics (also BIO 223) (3/3)
- 294 Cellular Biophysics (same as BIO 294) (3/3)

Biochemistry (BIOC)

- 218 Computational Molecular Biology (same as BIOMEDIN 231) (3/3)
- 224 Advanced Cell Biology (same as BIO 214) (5/5)
- 236 Biology by the Numbers (same as APPPHYS 136) (3/3)
- 241 Biological Macromolecules (same as BIOPHYS 241, SBIO 241) (5/5)

Biomedical Informatics (BIOMEDIN)

- 231 Computational Molecular Biology (same as BIOC 218) (3/3)
- 374 Algorithms in Biology (same as CS 374) (3/3)

Biophysics (BIOPHYS)

- 228 Computational Structural Biology (same as SBIO 228) (3/3)
- 232 Advanced Imaging Lab in Biophysics (same as BIO 132/232, MCP 232) (4/4)
- 241 Biological Macromolecules (same as BIOC 241, SBIO 241) (5/5)
- 250 Seminar in Biophysics (1/1)

Cancer Biology (CBIO)

- 101 Cancer Biology (same as PATH 101) (4/4)
- 241 Molecular, Cellular and Genetic Basis of Cancer (5/5)

Chemical Engineering (CHEMENG)

- 174 Environmental Microbiology I (also 274; same as CEE 274A) (3/3)
- 181 Biochemistry I (also 281; same as CHEM 181, BIO 188/288) (3/3)
- 183 Biochemistry II (also 283; same as CHEM 183, BIO 189/289) (3/3)
- 450 Advances in Biotechnology (3/3) **may only count toward the Biology requirements once.
- 456 Metabolic Biochemistry of Microorganisms (same as CEE 274B) (3/3)

Chemistry (CHEM)

- 181 Biochemistry I (Same as CHEMENG 181/281, BIO 188/288) (3/3)
- 183 Biochemistry II (Same as CHEMENG 183/283, BIO 189/289) (3/3)

Civil & Environmental Engineering (CEE)

- 274A Environmental Microbiology I (same as CHEMENG 174/274) (3/3)
- 274B Metabolic Biochemistry of Microorganisms (same as CHEMENG 456) (3/3)
- 278B Atmospheric Aerosols (3/3)

Computer Science (CS)

- 374 Algorithms in Biology (same as BIOMEDIN 374) (3/3)

Developmental Biology (DBIO)

- 156 Human Developmental Biology and Medicine (same as HUMBIO 141) (4/4)
- 201 Development and Disease Mechanisms (4/4)
- 210 Developmental Biology (5/5)
- 257 The Biology of Stem Cells (same as HUMBIO 157) (3/3)

Earth Systems (EARTHSYS)

- 111 Biology & Global Change (same as BIO 117) (4/4)
- 147 Controlling Climate Change in the 21st Century (also 247; same as BIO 147/247, HUMBIO 116) (3/3)
- 180 Fundamentals of Sustainable Agriculture (also 280; same as BIO 180/280) (3/3)

Genetics (GENE)

- 202 Human Genetics (4/4)

Geological and Environmental Sciences (GES)

- 090 Introduction to Geochemistry (4/3)
- 123 Invertebrate Paleobiology (4/4)

Human Biology (HUMBIO)

- 006 Human Origins (same as ANTHRO 006/206, BIO 106) (5/5) **graduate students cannot enroll in ANTHRO or HUMBIO 006; courses below 100 cannot count toward degree requirements.
- 112 Conservation Biology (formerly 119; same as BIO 144) (4/4)
- 114 Environmental Change & Emerging Infectious Disease (formerly 179; same as ANTHRO 177/277) (5/3)
- 116 Controlling Climate Change in the 21st Century (same as BIO 147/247, EARTHSYS 147/247) (3/3)
- 119 Demography: Health, Development, Environment (formerly 137; same as BIO 102) (3/3)
- 129S International Health (formerly 167) (4/4)
- 133 Human Physiology (same as BIO 112/212) (4/4)
- 135 Exercise Physiology (formerly 155) (4/4)
- 141 Human Developmental Biology and Medicine (formerly 156; same as DBIO 156) (4/4)
- 147 Controlling Climate Change in the 21st Century (same as BIO 147/247, EARTHSYS 147/247) (3/3)
- 154 Cancer Epidemiology (4/4)
- 155B The Vaccine Revolution (formerly 115B; same as MI 115B) (6/2)
- 155H Humans and Viruses I (same as MI 155H) (6/3)
- 157 The Biology of Stem Cells (same as DBIO 257) (3/3)
- 158 The Human Genome and Disease (formerly 114; same as BIO 109A/209A) (3/3)
- 160 Human Behavioral Biology (same as BIO 150/250) (5/5)
- 163 Neural Systems and Behavior (same as BIO 163/263) (4/4)
- 183 Astrobiology and Space Exploration (formerly 107) (4/2)
- 186 Biological Clocks (formerly 182; same as BIO 135) (3/3)

Immunology (IMMUNOL) **only appropriate for graduate students

- 201 Advanced Immunology I (same as MI 211) (3/3)
- 202 Advanced Immunology II (same as MCP 202) (3/3)

Mechanical Engineering (ME)

- 280 Skeletal Developmental and Evolution (3/3)

Microbiology and Immunology (MI)

- 104 Innate Immunology (also 204) (3/3)
- 115B The Vaccine Revolution (same as HUMBIO 155B) (6/2)
- 155H Humans and Viruses I (same as HUMBIO 155H) (6/3)
- 185 Topics in Microbiology (3/3)
- 211 Advanced Immunology I (same as IMMUNOL 201) (3/3)

Molecular and Cellular Physiology (MCP)

- 200 Cardiovascular Physiology (5/5)
- 202 Advanced Immunology II (same as IMMUNOL 202) (3/3)
- 222 Imaging: Biological Light Microscopy (same as BIO 152, NBIO 222) (3/3)
- 232 Advanced Imaging Lab in Biophysics (same as BIO 132/232, BIOPHYS 232) (4/4)

Neurobiology (NBIO)

- 206 The Nervous System (8/5)
- 218 Neural Basis of Behavior (4/4)
- 222 Imaging: Biological Light Microscopy (same as BIO 152, MCP 222) (3/3)

Neurology & Neurological Sciences (NENS)

- 220 Computational Neuroscience (4/4)
- 267 Molecular Mechanisms of Neurodegenerative Disease (4/4)

Overseas Studies - Australia (OSPAUSTL) **graduate students cannot take courses in Overseas Studies; Overseas Studies courses are for undergraduates only.

- 010 Coral Reef Ecosystems (3/2)
- 020 Coastal Resource Management (3/2)
- 030 Coastal Forest Ecosystems (3/2)

Overseas Studies - Santiago (OSPSANTG) **graduate students cannot take courses in Overseas Studies; Overseas Studies courses are for undergraduates only.

- 025 The Evolution and Ecology of the South American Biota (3/3)
- 085 Marine Ecology of Chile and the South Pacific (5/5)

Pathology (PATH)

- 101 Cancer Biology (same as C BIO 101) (4/4)

Philosophy (PHIL)

- 167A Philosophy of Biology (also 267A) (4/4)

Psychology (PSYCH)

- 120 Cellular Neuroscience: Cell Signaling & Behavior (same as BIO 153) (4/4)
- 121 Ion Transport and Intracellular Messengers (also 228) (3/3)
- 202 Cognitive Neuroscience (3/3)
- 221 Applied Vision and Image Systems (3/3)

Statistics (STATS)

- 116 Theory of Probability (5/5)
- 141 Biostatistics (same as BIO 141) (5/5)

Structural Biology (SBIO)

- 228 Computational Structural Biology (same as BIOPHYS 228) (3/3)
- 241 Biological Macromolecules (same as BIOC 241, BIOPHYS 241) (5/5)

Surgery (SURG)

- 101 Regional Study of Human Structure (5/5)