

Biology MS students and undergraduate majors may apply the following out-of-department courses toward their elective unit requirements. Biology minors may apply these courses toward the minor provided the course has been approved for at least 3 units toward biology. 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 check ExploreCourses (<http://explorecourses.stanford.edu/>) to verify offerings or 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. Students should enroll in the BIO section of cross listed courses whenever possible. 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.

MS Students: There are a few courses under the 100-level that are on this list – these are not allowable for graduate students per university policy. You must take courses designated primarily for graduate students. If the course you are interested in has an offering at the 100- and 200- levels, be sure to enroll in the 200-level section.

Anthropology (ANTHRO)

- 6 Human Origins (also 206; same as HUMBIO 6) (5/5) graduate students cannot enroll in ANTHRO or HUMBIO 6; courses below 100 cannot count toward degree requirements.
- 177 Environmental Change and Emerging Infectious Diseases (also 277; same as HUMBIO 114) (5/3)
- 363 Demography and Life History Theory (formerly 155) (5/5)

Applied Physics (APPPHYS)

- 236 Biology by the Numbers (same as BIOC 236) (3/3)

Biochemistry (BIOC)

- 158 Genomics, Bioinformatics and Medicine (also 258; same as HUMBIO 158G, BIOMEDIN 258) (3/3)
- 218 Computational Molecular Biology (same as BIOMEDIN 231) (3/3)
- 236 Biology by the Numbers (same as APPPHYS 236) (3/3)
- 241 Biological Macromolecules (same as BIOPHYS 241, SBIO 241) (5/5)

Bioengineering (BIOE)

- 214 Representations & Algorithms for Computational Molecular Biology (same as BIOMEDIN/GENE 214, CS 274) (4/4)
- 220 Introduction to Imaging & Image-Based Neuro Anatomy (same as RAD 220) (3/3)
- 280 Skeletal Developmental and Evolution (same as ME 280) (3/3)
- 450 Advances in Biotechnology (Same as CHEMENG 450) (3/3) **may only count toward the Biology requirements once.

Biomedical Informatics (BIOMEDIN)

- 210 Modeling Biomedical Systems: Ontology, Terminology, Problem Solving (same as CS 270) (3/3)
- 214 Representations and Algorithms for Computational Molecular Biology (same as BIOE/GENE 214, CS 274) (4/4)

- 231 Computational Molecular Biology (same as BIOC 218) (3/3)
- 258 Genomics, Bioinformatics and Medicine (same as BIOC 158/258, HUMBIO 158G) (3/3)
- 374 Algorithms in Biology (same as CS 374) (3/3)

Biophysics (BIOPHYS)

- 228 Computational Structural Biology (same as SBIO 228) (3/3)
- 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 (4/4)
- 275 Tumor Immunology (same as IMMUNOL 275) (3/3)

Chemical Engineering (CHEMENG)

- 174 Environmental Microbiology I (also 274; same as CEE 274A) (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)

- 184 Biological Chemistry Laboratory (4/4)
- 185 Biochemistry III (3/3)

Civil & Environmental Engineering (CEE)

- 177 Aquatic Chemistry & Biology (4/4)
- 274A Environmental Microbiology I (same as CHEMENG 174/274) (3/3)
- 274B Metabolic Biochemistry of Microorganisms (same as CHEMENG 456) (3/3)
- 274D Pathogens & Disinfection (3/3)
- 278B Atmospheric Aerosols (3/3)

Computer Science (CS)

- 270 Modeling Biomedical Systems: Ontology, Terminology, Problem Solving (same as BIOMEDIN 210) (3/3)
- 274 Representations and Algorithms for Computational Molecular Biology (same as BIOE/BIOMEDIN/GENE 214) (4/4)
- 374 Algorithms in Biology (same as BIOMEDIN 374) (3/3)

Developmental Biology (DBIO)

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

Earth Systems (EARTHSYS)

- 122 Paleobiology (same as GS 123) (4/4)
- 128 Evolutionary History of Terrestrial Ecosystems (same as GS 128/228) (4/4)
- 134 Stable Isotopes in Biogeochemistry (same as EARTHSYS 234) (3/3)
- 144 Fundamentals of Geographic Information Science (GIS) (same as ESS 164) (4/4)
- 158 Geomicrobiology (same as EARTHSYS 258) (3/3)
- 176 Peninsula Open Space Trust Practicum: Community-Based Research for Open Space Management (3/3)

Energy (ENERGY)

- 240 Geostatistics for Spatial Phenomena (same as GS 240) (3/3)

Earth System Science (ESS)

164 Fundamentals of Geographic Information Science (GIS) (same as EARTHSYS 144) (4/4)

Genetics (GENE)

202 Human Genetics (4/4)

214 Representations and Algorithms for Computational Molecular Biology (same as BIOE/BIOMEDIN 214, CS 274) (4/4)

Geological Sciences (GS)

123 Paleobiology (same as EARTHSYS 122) (4/4)

128 Evolutionary History of Terrestrial Ecosystems (same as GES 228, EARTHSYS 128) (4/4)

240 Geostatistics for Spatial Phenomena (same as ENERGY 240) (3/3)

Human Biology (HUMBIO)

114 Environmental Change & Emerging Infectious Disease (same as ANTHRO 177/277) (5/3)

135 Exercise Physiology (4/4)

154C Cancer Epidemiology (4/4)

155B The Vaccine Revolution (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)

158G Genomics, Bioinformatics and Medicine (same as BIOC 158/258, BIOMEDIN 258) (4/4)

Immunology (IMMUNOL)

201 Advanced Immunology I (same as MI 211) (3/3) only appropriate for graduate students

202 Advanced Immunology II (same as MCP 202) (3/3) only appropriate for graduate students

204 Innate Immunology (same as MI 104/204) (3/3)

275 Tumor Immunology (same as CBIO 275) (3/3)

Mechanical Engineering (ME)

280 Skeletal Developmental and Evolution (same as BIOE 280) (3/3)

Microbiology and Immunology (MI)

104 Innate Immunology (also 204; same as IMMUNOL 204) (3/3)

115B The Vaccine Revolution (same as HUMBIO 155B) (6/2)

116 The Human Virosphere (also 216) (5/5)

155H Humans and Viruses I (same as HUMBIO 155H) (6/3)

155V Humans and Viruses II (6/3)

185 Topics in Microbiology (also 285) (3/3)

211 Advanced Immunology I (same as IMMUNOL 201) (3/3) **only appropriate for graduate students

Molecular and Cellular Physiology (MCP)

126 Neurons and Disease (4/4)

156 How Cells Work: Energetics, Compartments, and Coupling in Cell Biology (also 256) (4/4)

202 Advanced Immunology II (same as IMMUNOL 202) (3/3) **only appropriate for graduate students

Neurobiology (NBIO)

206 The Nervous System (8/5)

218 Neural Basis of Behavior (5/4)

Neurology & Neurological Sciences (NENS)

220 Computational Neuroscience (4/4)

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

- 10 Coral Reef Ecosystems (3/2)
- 25 Freshwater Systems (3/2)
- 30 Coastal Forest Ecosystems (3/2)

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

- 73 The Neuroscience of Language Learning (3/2)

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

- 83 The Cancer Problem: Causes, Treatments, and Prevention (4/4)
- 88 Principles of Biochemistry (3/3)

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

- 27 Humans and the Environment: The Great Transitions (5/3)
- 85 Marine Ecology of Chile and the South Pacific (5/5)

Pathology (PATH)

- 101 Cancer Biology (same as CBIO 101) (4/4)

Philosophy (PHIL)

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

Physics (PHYSICS)

- 105 Intermediate Physics Lab I: Analog Electronics (3/3)

Psychology (PSYCH)

- 121 Ion Transport and Intracellular Messengers (also 228) (3/3)
- 202 Cognitive Neuroscience (3/3)
- 221 Applied Vision and Image Systems (3/3)

Radiology (RAD)

- 220 Introduction to Imaging & Image-Based Neuro Anatomy (same as BIOE 220) (3/3)

Statistics (STATS)

- 116 Theory of Probability (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)