REQUIREMENTS FOR BIOLOGY MAJORS AT USD
(Fall 2009 and later)

Introductory Courses
All students must complete the two-semester sequence of introductory courses before selecting a specialization. These provide students with a comprehensive introduction to biology and are prerequisites for most upper-level biology courses. Students must receive a C or better in each of these courses.

General Biology I (BIOL 151/151L)..... 4 cr
General Biology II (BIOL 153/153L)..... 4 cr

Specialization A. *Ecology & Evolution*
2 courses from the Ecology & Environmental Science Group..... 6 cr
2 courses from the Evolution and/or Diversity Groups..... 6 cr
1 course from the Cell & Molecular Group or the Physiology & Function Group……..... 3 cr

See Biology Course Groups for classification of courses within biological topics.
Of the two upper level Biology lab courses that are required of all majors (see below), one must be from the Ecology & Environmental Science Group and one must be from the Diversity Group.

Specialization B. *Molecular Biology & Physiology*
2 courses from the Cell & Molecular Group ..... 6 cr
2 courses from the Physiology & Function Group..... 6 cr
1 course from the Ecology & Environmental Science, Evolution, or Diversity Groups (other than BIOL 473 if this was taken to satisfy the BIOL 471 or BIOL 473 requirement below)……. 3 cr

See Biology Course Groups for classification of courses within biological topics.

Other Biology Courses
Genetics (BIOL 471) OR Evolution (BIOL 473)..... 3 cr
Biology electives..... 12 cr
Topical Senior Seminar (BIOL 490)..... 1 cr
TOTAL (minimum)..... 39 cr

Additional Biology Requirements
All students must complete two upper-level (300 or above) Biology lab courses.
All students must complete one designated botany course and one designated zoology course.

Nondepartmental Requirements (15-16 credit hours)

CHEM 112 General Chemistry I & CHEM 114 General Chemistry II…… 4,4 cr
Or CHEM 112 General Chemistry I & CHEM 116 Principles of Chemistry (Honors)…….. 4,5 cr
CHEM 326 Organic Chemistry I & CHEM 328 Organic Chemistry II…… 4,4 cr
Or CHEM 326 Organic Chemistry I & CHEM 482 Environmental Chemistry…… 4,3 cr
Or CHEM 326 Organic Chemistry I & CHEM 332 Analytical Chemistry…… 4,4 cr

Recommendations For Both Specializations

CHEM 326/328 Organic Chemistry I, II and PHYS 111/113 Introduction to Physics I, II or PHYS 211/213 University Physics I, II are highly recommended for both specializations and may be required for pre-health/professional/graduate programs.

BIOL 420 Biostatistics is highly recommended for both tracks and may be used to fulfill, in part, university and college math requirements.

Biology Course Groups

CELL & MOLECULAR GROUP
Bioc 430 Principles of Biochemistry
Biol 425 Cell Physiology
Biol 438 Molecular Ecology and Evolution
Biol 441 Histology *Z
Biol 443 Cell Biology
Biol 449 DNA Sequencing Methods *
Biol 470 Cancer Biology
Biol 475 Introduction to Molecular Biology
Biol 483 Developmental Biology
Micr 320 Microbiology & Infectious Disease

DIVERSITY GROUP
Biol 401 Plant Systematics *B
Biol 405 Insect Biology *Z
Biol 407 Plants and Civilization *B
Biol 410 Conservation Biology
Biol 434 Herpetology*
Biol 435 Animal Diversity and Evolution Z
Biol 452 Comparative Plant Morphology *B
Biol 463 Ornithology *Z
Biol 469 Fish Biology *Z
Biol 485 Invertebrate Paleontology
Biol 486 Advanced Paleontology
Micr 320 Microbiology & Infectious Disease

ECOLOGY & ENVIRONMENTAL SCIENCE GROUP
Biol 310 Environmental Science
Biol 311 Principles of Ecology
Biol 402 Animal Behavior Z
Biol 408 Landscape Ecology
Biol 410 Conservation Biology
Biol 412 Freshwater Ecology *
Biol 414 Animal Ecology *Z
Biol 417 Field Ecology *
Biol 419 Plant Ecology *B
Biol 433 Environmental Physiology of Animals Z
Biol 436 Biogeography
Biol 466 Environ. Toxicology & Contaminants

EVOLUTION GROUP
Biol 416 Evolution of Disease
Biol 435 Animal Diversity and Evolution Z
Biol 436 Biogeography
Biol 438 Molecular Ecology and Evolution
Biol 473 Evolution

PHYSIOLOGY & FUNCTION GROUP
Biol 425 Cellular Physiology
Biol 426 Endocrinology Z
Biol 427 Plant Physiology *B
Biol 428 Comparative Physiology Z (*opt)
Biol 429 Biology of Reproduction Z
Biol 430 Neurobiology Z
Biol 432 Behavioral Neuroscience Z
Biol 433 Environmental Physiology of Animals Z
Biol 452 Comparative Plant Morphology *B
Biol 456 Mammalian PhysiologyZ
Biol 481 Vertebrate Anatomy and Embryology *Z

OTHER COURSES
Biol 420 Intro. to Biostatistics and Comp. Biol. Biol 471 Genetics
Biol 490 Senior Seminar
Biol 491 Independent Study
Biol 495 Teaching Internship-up to 1 credit
Biol 498 Undergraduate Research/Scholarship
Uhon 498 Honors Thesis (*if research is done on a biological topic*)

* = Lab Course
B = Botany Course
Z = Zoology Course