

Biology courses fulfilling A, B, C, or D requirements, and introductory courses, for Biology BS degree (Semester system)

<i>BIOL #</i>	<i>Description</i>	<i>Prerequisites</i>	<i>Units</i>
2010	PRINCIPLES OF BIOLOGY I Provides a foundational understanding of the process of life and the universality of life processes at the molecular and cellular level. Introduces diversity, structure and function of Bacteria, Archaea, protists, and plants. When combined with BIOL 2020, this course is equivalent to the previously offered BIOL 200, 201, and 202. Satisfies GE category B2; B3	CHEM 2100 with a grade of C or higher	5 units (4 hr lec, 3 hr lab)
2020	PRINCIPLES OF BIOLOGY II. Provides a foundational understanding of the principles of genetics, evolution and ecology of organisms, populations, and communities. Introduces diversity, structure and function of animals and fungi. When combined with BIOL 2010, this course is equivalent to the previously offered BIOL 200, 201, and 202	BIOL 2010 with a grade of C or better.	5 units (4 hr lec, 3 hr lab)
<i>Courses that fulfill Group A requirement</i>			
3100	Cell Biology Structure and function of eukaryotic cells and organelles, and their physiological processes at the molecular level, including metabolism, signal transduction, gene regulation, and cell cycle control. Formerly offered as BIOL 300.	BIOL 2020 with a grade of C or better, and either CHEM 2300 or CHEM 2400 with a grade of C or better	4 units (3 hr lec; 3 hr lab)
3120	Molecular Biology Informational macromolecules, and how they direct molecular processes in both eukaryotic and bacterial cells. Formerly offered as BIOL 400.	[same as prereqs for BIOL 3100]	4 units (3 hr lec; 3 hr lab)
3200	Microbiology The structure and function, metabolism, and genetics of microorganisms with an introduction to bacterial, viral, fungal, and protozoan pathogens. Formerly offered as BIOL 320.	BIOL 2020 with a grade of C or better; completion of or concurrent enrollment in CHEM 2300 or CHEM 2400.	4 units (3 hr lec; 3 hr lab)
3300	Genetics Principles of heredity and genetic analysis, including underlying molecular mechanisms. Includes current concepts of the organization, function, and regulation of genes. Formerly offered as BIOL 423.	[same as prereqs for 3200]	4 units (3 hr lec; 3 hr lab)
<i>Courses that fulfill Group B requirement</i>			
3410	Biology of Invertebrates Survey of the major groups of invertebrates, with emphasis on taxonomy, structure, function, reproduction, and evolution. Formerly offered as BIOL 331.	[same as prereqs for 3200]	4 units (3 hr lec; 3 hr lab)
3420	Comparative Biology of the Vertebrates Structural, developmental and ecological changes in the evolution of the chordates and their ancestors, with an emphasis on comparative vertebrate anatomy. Formerly offered as BIOL 342.	[same as prereqs for 3200]	5 units (3 hr lec, 6 hr lab)

3430	Mammalogy Systematics, evolution, morphology, physiology, ecology and behavior of mammals. <i>Formerly offered as BIOL 343.</i>	[same as prereqs for 3200]	3 units (2 hr lec; 3 hr lab)
3440	Herpetology Diversity, evolution, morphology, physiology, behavior and ecology of amphibians and reptiles. <i>Formerly offered as BIOL 344.</i>	[same as prereqs for 3200].	3 units (2 hr lec; 3 hr lab)
3450	Ornithology Introduction to the biology of birds. Course includes study of the functional morphology, ecology and behavior, and the evolutionary relationships among extant taxa. Laboratory exercises will focus on identification and museum studies, coupled with field observations of avian species diversity and associated habitats with an emphasis on resident and migratory species of southern California. <i>Formerly offered as BIOL 345</i>	[same as prereqs for 3200]	3 units (2 hr lec; 3 hr lab)
3460	Entomology A survey of the anatomy, classification, physiology, ecology, and evolution of the insects. <i>Formerly offered as BIOL 335.</i>	[same as prereqs for 3200]	3 units (2 hr lec; 3 hr lab)
3630	Comparative Animal Physiology I A comparative analysis of the physiologic mechanisms and performance in animals, with emphasis on evolutionary trends in neuronal and musculoskeletal functions. 2000-level physics course (or equivalent) recommended. Together BIOL 3630 and BIOL 3640 are equivalent to BIOL 424. Satisfies GE designation WI.	BIOL 2020 with a grade of C (2.0) or better.	4 units (3 hr lec; 3 hr lab)
3640	Comparative Animal Physiology II A comparative analysis of the physiologic mechanisms and performance in animals, with emphasis on evolutionary trends in cardiorespiratory, osmotic and thermoregulatory functions. 2000-level physics course (or equivalent) recommended. Together BIOL 3630 and BIOL 3640 are equivalent to BIOL 424. Satisfies GE designation WI.	BIOL 2020 with a grade of C (2.0) or better.	4 units (3 hr lec; 3 hr lab)
<i>Courses that fulfill Group C requirement</i>			
3520	Local Flora Identification of the flora and ecological communities of southern California with a consideration of taxonomic principles. <i>Formerly offered as BIOL 319.</i>	BIOL 2020 with a grade of C (2.0) or better, or consent of instructor.	3 units (1 hr lec; 1 hr disc; 3 hrs lab)
3540	Plant Biology and Diversity Comparative plant morphology, anatomy, and development, with emphasis on ecological consequences of variation in anatomical traits. 2000-level physics course (or equivalent) recommended. <i>Formerly offered as BIOL 354.</i>	[same as prereqs for 3200]	4 units (3 hr lec; 3 hr lab)

4510	Plant Physiology Comparative analysis of physiological activity in plants at the various levels of cells, tissues, organs and organisms. <i>Formerly offered as BIOL 431.</i>	BIOL 3100 with a grade of C or better, and one of the following with a grade of C or better: CHEM 2300 or CHEM 2400	5 units (3 hr lec, 6 hr lab)
4580	Medical and Economic Botany Survey of medically and economically important plant species and families. Includes plants harmful and beneficial to humans, with emphasis on vascular species. <i>Formerly offered as BIOL 380.</i>	BIOL 3700 or BIOL 3800, and either CHEM 2300 or CHEM 2400.	3 units (3 hr lec)
<i>Courses that fulfill Group D requirement</i>			
3700	Evolution A broad survey of evolutionary biology. Topics include natural selection and adaptation, population genetics, speciation, and the historical patterns in the diversity of life that arise from the evolutionary process. <i>Formerly offered as BIOL 321.</i>	[same as prereqs for 3200]	4 units (3 hr lec; 1 hr disc)
3800	Ecology Analysis of the interrelationships of organisms and their physical and biotic environment with a consideration of the role of the environment in natural selection. <i>Formerly offered as BIOL 450.</i>	BIOL 2020 with a grade of C (2.0) or better, Math 2210 with a grade of C (2.0) or better, and completion of or concurrent enrollment in CHEM 2300 or CHEM 2400; or consent of instructor.	4 units (3 hr lec; 3 hr lab)
3820	Microbial Ecology An overview of interactions between microorganisms and their environments, and classical and modern methods used to study microbial communities and their ecology. Particular focus will be placed on important roles that microbes play in carbon and nitrogen cycling, and human-microbe interactions.	[same as prereqs for 3200]	4 units (3 hr lec; 3 hr lab)
5000	Biology Seminar Topics of current biological interest, presented by students, faculty, and guest speakers. Discussion of primary research associated with presentation topics, including how the research relates to broader topics in Biology. May be taken once for credit toward the B.S. in Biology; may be taken twice for credit toward the elective requirement of the Master of Science in Biology. <i>Formerly offered as BIOL 591.</i>	BIOL 2020 with a grade of C (2.0) or better, or graduate standing in Biology	1 unit (1 hour seminar)
<i>Many other biology courses (e.g., Genomics, Tissue culture, Biostatistics, Special Topics courses, Virology, etc.) will be available to fulfill the rest of the upper-division biology course requirements.</i>			