

Bachelor of Arts in Biology

Note: All **BIOL** & **PHYS** prerequisites must be passed with a **C- or better**, unless stated otherwise. All **CHEM** & **MATH** prerequisites must be passed with a **C or better**, unless stated otherwise.

Requirement	if taken	Course		Units	Prerequisites by ID
		ID	Title		
Division Courses					
<i>Courses may be transferable from community college; check ASSIST.org for more information</i>					
All Required		BIOL 230	Introductory Biology 1	5	None
		BIOL 240	Introductory Biology 2	5	BIOL 230
		CHEM 115	General Chemistry 1 + Lab	5	see bulletin: http://bulletin.sfsu.edu/courses/chem/
		CHEM 130	General Organic Chemistry	3	CHEM 115
		CHEM 215/216	General Chemistry 2 + Lab	3/2	CHEM 115, CHEM 215 (concurrent OK for lab)
		PHYS 111/112	General Physics 1 + Lab	3/1	MATH 198 or MATH 199
		PHYS 121/122	General Physics 2 + Lab	3/1	PHYS 111, PHYS 112
CHOOSE 1 ONLY		MATH 124	Elementary Statistics	3	see bulletin: http://bulletin.sfsu.edu/courses/math/
		MATH 226	Calculus 1	4	see bulletin: http://bulletin.sfsu.edu/courses/math/

Total Units for Lower Division

Division Courses					
<i>Courses do not need to be taken in order, only requirement is taking the prerequisites</i>					
Required		BIOL 355	Genetics	3	BIOL 230, BIOL 240, CHEM 115 (C- or better)
Physiology Course: CHOOSE 1 ONLY		BIOL 442	Microbial Physiology	3	BIOL 401, BIOL 402GW, CHEM 349 or equivalent
		BIOL 525	Plant Physiology	3	BIOL 230, BIOL 240, CHEM 130
		BIOL 612	Human Physiology	3	BIOL 230, BIOL 240, CHEM 130, PHYS 121
		BIOL 630	Animal Physiology	3	BIOL 230, BIOL 240, (CHEM 130 -OR- CHEM 233)
Cell Biology Course: CHOOSE 1 ONLY		BIOL 350	Cell Biology	3	BIOL 230, BIOL 240, CHEM 115
		BIOL 358	Forensic Genetics: Math Matters	4	BIOL 230, MATH 199
		BIOL 401	General Microbiology	3	BIOL 230, BIOL 240, CHEM 233 (C- or better)
		BIOL 435	Immunology	3	BIOL 350 -OR- BIOL 401
		BIOL 453	General Parasitology	3	BIOL 230, BIOL 240, BIOL 355
		CHEM 349	General Biochemistry	3	CHEM 215, (CHEM 130 -OR- CHEM 335 (C- or better))
Physiology or Cell Biology Course: CHOOSE 1 ONLY (based on lecture course taken)		BIOL 351GW	Experiment in Cell & Molecular Biology	4	GE A2, BIOL 350, BIOL 355
		BIOL 402GW	General Microbiology Lab	3	GE A2, BIOL 401 (concurrent OK)
		BIOL 436	Immunology Lab	2	BIOL 402GW or equivalent; BIOL 435 (concurrent OK)
		BIOL 454	Parasitology Lab	1	BIOL 453
		BIOL 526	Plant Molecular Physiology Lab	2	BIOL 230, BIOL 240, CHEM 130
		BIOL 613GW	Human Physiology Lab	3	GE A2, BIOL 612 -OR- BIOL 630 (concurrent OK)
		BIOL 631GW	Animal Physiology Lab	4	GE A2, (BIOL 612 -OR- BIOL 630)
		CHEM 343	Biochemistry 1 Lab	3	CHEM 216, CHEM 234, (CHEM 340 -OR- CHEM 349)
Ecology Course:		BIOL 482	Ecology	4	BIOL 230, BIOL 240
		BIOL 490	Ecology of Infectious Disease	4	BIOL 230, BIOL 240
		BIOL 529GW	Plant Ecology	4	GE A2, BIOL 230, BIOL 240
		BIOL 532	Restoration Ecology	3	BIOL 230, BIOL 240

CHOOSE 1 ONLY	BIOL 534	Wetland Ecology	4	BIOL 230, BIOL 240
	BIOL 580	Limnology	3	BIOL 230, BIOL 240, CHEM 215, CHEM 216
	BIOL 582	Biological Oceanography	4	BIOL 230, BIOL 240
	BIOL 585/586	Marine Ecology + Lab	3/2	BIOL 230, BIOL 240
Evolution or Organismal Biology Course: CHOOSE 1 ONLY	BIOL 328	Human Anatomy	4	BIOL 230
	BIOL 337	Evolution	3	BIOL 230, BIOL 240, BIOL 355
	BIOL 380	Evolutionary Developmental Biology	3	BIOL 355
	BIOL 382	Developmental Biology	3	BIOL 350, BIOL 355
	BIOL 425	Emerging Diseases	3	BIOL 230, BIOL 240, (BIOL 355 -OR- BIOL 401 -OR- BIOL 350), CHEM 130
	BIOL 453/454	General Parasitology + Lab	3/1	BIOL 230, BIOL 240, BIOL 355
	BIOL 460	General Entomology	4	BIOL 230, BIOL 240
	BIOL 475GW	Herpetology	3	GE A2, BIOL 230, BIOL 240
	BIOL 478GW	Ornithology	4	GE A2, BIOL 230, BIOL 240
	BIOL 500	Evolution and Diversity of Plants	4	BIOL 230, BIOL 240
	BIOL 502	Biology of the Algae	3	BIOL 230, BIOL 240
	BIOL 504	Biology of the Fungi	4	BIOL 230, BIOL 240
	BIOL 505	Comparative Anatomy of Vascular Plants	4	BIOL 230, BIOL 240
	BIOL 514	Plant Taxonomy	5	BIOL 230, BIOL 240
	BIOL 555	Marine Invertebrate Zoology	4	BIOL 230, BIOL 240, one upper-division Ecology course
	BIOL 570GW	Biology of Fishes	3	GE A2, BIOL 230, BIOL 240
BIOL 600	Animal Behavior	3	BIOL 230, BIOL 240	
BIOL 638	Bioinformatics and Genome Annotations	4	BIOL 230, 3.0+ GPA	

Elective Courses
 Select units from the list below or units not used in fulfilling the requirements listed above. Only one of the following courses can be included among those selected: BIOL 317, BIOL 327, BIOL 330, and BIOL 349. Biology 699 can be used for no more than 3 units of the elective requirement.

CHOOSE 1-9 UNITS	BIOL 332	Health Disparities in Cancer	3	BIOL 230, BIOL 240, BIOL 355, 3.0+ GPA
	BIOL 344GW	Research Skills	3	GE A2, BIOL 230, BIOL 240, 3.0+ GPA
	BIOL 358**	Forensic Genetics: Math Matters	4	BIOL 230, MATH 199
	BIOL 461	Insect Taxonomy	4	BIOL 230, BIOL 240
	BIOL 464	Medical Entomology	3	BIOL 230, BIOL 240
	BIOL 470	Natural History of Vertebrates	4	BIOL 230, BIOL 240
	BIOL 492	Comparative Anatomy of Vertebrates	4	BIOL 230, BIOL 240
	BIOL 530	Conservation Biology	3	BIOL 230, BIOL 240
	BIOL 550	Plant and Animal Interactions	4	BIOL 230, BIOL 240, one upper-division Ecology course
	BIOL 555**	Marine Invertebrate Zoology	4	BIOL 230, BIOL 240
	BIOL 556	Natural History of Marine Invertebrates	4	BIOL 230, BIOL 240
	BIOL 577	Ecological and Environmental Modeling	4	BIOL 230, BIOL 240
	BIOL 607	Conservation and Management of Marine Mammals	3	BIOL 230, BIOL 240, BIOL 355
	BIOL 609	Physics in Medicine	3	PHYS 121, BIOL 230
	BIOL 614	Vertebrate Histology	4	BIOL 230, BIOL 240
	BIOL 616	Cardiorespiratory Physiology	3	GE A2, (BIOL 612 -OR- BIOL 630), PHYS 121
	BIOL 620	Endocrinology	3	BIOL 230, BIOL 240
	BIOL 621	Reproductive Physiology	3	BIOL 230, BIOL 240, BIOL 330, CHEM 130
	BIOL 622	Hormones and Behavior	3	BIOL 230, BIOL 240
	BIOL 623	Pharmacology	3	BIOL 230, BIOL 240, BIOL 612, CHEM 130
BIOL 640	Cellular Neurosciences	3	BIOL 230, BIOL 240, CHEM 130, PHYS 121	

	BIOL 652	Science Education Partners in Biology	4	BIOL 230, BIOL 240, or one upper-division Biology course
Substitutions, if any				

Total Units for Upper Division

Total Units Needed for Degree

Notes:

** can be an elective if not used to fulfill other upper division major requirement

At times, CHEM 130 can be substituted with the CHEM 233/335 series. Ask your advisor for more information.