

Department of Biology Graduation Checklist
<https://biology.sfsu.edu/advising/undergraduate>

LD= _____

Student: _____ E-mail _____

UD= _____

Last First

Advisor: _____ Phone _____

BACHELOR OF ARTS IN GENERAL BIOLOGY

Course is 3 units unless otherwise noted. Prerequisites are listed in brackets next to course number.

Lower Division Requirements (32-33 units)

Class	Prerequisites (must be completed with a C- or better, unless otherwise stated; however, Chemistry prerequisite courses must be completed with a C or better)	Class Name	Units	Fa 21	Sp 22	Su 22	v	on DPR?
BIOL 230		Introductory Biology I	5	yes	yes	no		
BIOL 240	Biol 230	Introductory Biology II [Meets GE Areas B2 (Life Science) & B3 (Lab Science)]	5	yes	yes	no		
CHEM 115	see http://bulletin.sfsu.edu/courses/chem/	General Chemistry I: Essential Concepts of Chemistry	5	yes	yes	no		
CHEM 130	Chem 115	General Organic Chemistry [meets GE Area B1] - can request substitution with CHEM 233; Need to use Advisor Request to update Degree Progress Report	3	yes	yes	yes		
CHEM 215	Chem 115	General Chemistry II (CHEM 216 is recommended)	3	yes	yes	yes		
PHYS 111/112	see http://bulletin.sfsu.edu/courses/phys/	General Physics I/Laboratory (3/1)	4	yes	yes	yes		
PHYS 121/122	see http://bulletin.sfsu.edu/courses/phys/	General Physics II/Laboratory (3/1)	4	yes	yes	yes		

One course from the following (3-4 units):

MATH 124	see http://bulletin.sfsu.edu/courses/math/	Elementary Statistics		yes	yes	yes		
MATH 226	see http://bulletin.sfsu.edu/courses/math/	Calculus I (4)		yes	yes	yes		

Total lower division requirements (units): 32-33

Note: Biol 231, Advising for Success as a Biology Major (1 unit, online) is HIGHLY RECOMMENDED

Upper Division Requirements (13-23 required units) (1-9 additional elective units)

							v	on DPR?
BIOL 355	Biol 230 + Biol 240 + Chem 115	Genetics [meets GE UD-B requirement]	3	yes	yes	yes		

One physiology course from the following (3 units):

BIOL 442	Biol 402 + Biol 402GW + Chem 349	Microbial Physiology		yes	no	no		
BIOL 525	Biol 230 + Biol 240 + Chem 130	Plant Physiology		yes	yes	no		
BIOL 612	Biol 230 + Biol 240 + Chem 130 + Phys 121	Human Physiology		yes	yes	yes		
BIOL 630	Biol 230 + Biol 240 + [Chem 130 or Chem 233]	Animal Physiology		yes	yes	no		

One cell biology course from the following (3-4 units):

BIOL 350	Biol 230 + Biol 240 + Chem 115	Cell Biology		yes	yes	yes		
BIOL 358	Biol 230 + Math 199	Forensic Genetics: Math Matters (4)		yes	no	no		
BIOL 401	Biol 230 + Biol 240 + Chem 233	General Microbiology		yes	yes	no		
BIOL 435	Biol 350 or Biol 401	Immunology		yes	yes	no		
BIOL 453	Biol 230 + Biol 240 + Biol 355	General Parasitology		yes	no	no		
CHEM 349	see http://bulletin.sfsu.edu/courses/chem/	General Biochemistry		yes	yes	yes		

One physiology or cell biology laboratory course from the following (1-4 units):

BIOL 351GW	Biol 350 + Biol 355 + GE Area 2	Experiments in Cell and Molecular Biology - GVAR (4)		yes	yes	no		
BIOL 402GW	Biol 401 (may be taken concurrently) + GE Area 2	General Microbiology Laboratory - GVAR		yes	yes	no		
BIOL 436	Biol 402GW, concurrent enrollment in Biol 435	Immunology Laboratory (2)		no	no	no		
BIOL 443	Biol 442 (may be taken concurrently)	Microbial Physiology Laboratory (2)		no	no	no		
BIOL 454	Biol 453 (may be taken concurrently)	Parasitology Laboratory (1)		yes	no	no		
BIOL 526	Biol 230 + Biol 240 + Chem 130	Plant Molecular Physiology Laboratory (2)		no	yes	no		
BIOL 613GW	GE Area 2 + [Biol 612 or Biol 630 (may be taken concurrently)]	Human Physiology Laboratory - GVAR		yes	yes	yes		
BIOL 631GW	GE Area 2 + Biol 612 or Biol 630	Animal Physiology Laboratory - GVAR (4)		yes	no	no		
CHEM 343	see http://bulletin.sfsu.edu/courses/chem/	Biochemistry I Laboratory (not listed in Bulletin, but will count. Need to use Advisor Request to update Degree Progress Report)		yes	yes	no		

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One ecology course from the following (2-4 units):

			Fa 21	Sp 22	Su 22	√	on DPR?
BIOL 482	Biol 230 + Biol 240	Ecology (4)	yes	yes	no		
BIOL 490	Biol 230 + Biol 240	Ecology of Infectious Disease (4)	no	no	no		
BIOL 529GW	Biol 230 + Biol 240 + GE Area 2	Plant Ecology - GVAR (4)	yes	no	no		
BIOL 532	Biol 230 + Biol 240	Restoration Ecology	yes	no	no		
BIOL 534	Biol 230 + Biol 240	Wetland Ecology (4)	no	yes	no		
BIOL 580	Biol 230 + Biol 240 + Chem 215 + Chem 216; ecology course recommended	Limnology	no	no	no		
BIOL 582	Biol 230 + Biol 240	Biological Oceanography (4)	yes	yes	no		
BIOL 585	Biol 230 + Biol 240	Marine Ecology	yes	yes	no		
BIOL 586	Biol 585 (may be taken concurrently)	Marine Laboratory (2)	no	no	no		

One evolution or organismal biology course from the following (1-5 units):

BIOL 328	Biol 230	Human Anatomy (4)	yes	yes	no		
BIOL 337	Biol 230 + Biol 240 + Biol 355	Evolution	yes	yes	no		
BIOL 380	Biol 355 (Biol 337 is recommended)	Evolutionary Developmental Biology	no	yes	no		
BIOL 382	Biol 350 + Biol 355, GPA 3.0 or higher	Developmental Biology	yes	yes	no		
BIOL 425	Biol 230 + Biol 240 + [Biol 355 or Biol 401 or Biol 350] + Chem 130	Emerging Diseases	no	yes	no		
BIOL 453/454	Biol 230 + Biol 240 + Biol 355, Biol 453 may be taken concurrently with Biol 454	General Parasitology/Laboratory (3/1)*	yes	no	no		
BIOL 460	Biol 230 + Biol 240	General Entomology (4)	no	no	no		
BIOL 475GW	Biol 230 + Biol 240 + GE Area 2	Herpetology - GVAR	no	yes	no		
BIOL 478GW	Biol 230 + Biol 240 + GE Area 2	Ornithology - GVAR (4)	no	yes	no		
BIOL 500	Biol 230 + Biol 240	Evolution and Diversity of Plants (4)	no	no	no		
BIOL 502	Biol 230 + Biol 240, GPA 3.0 or higher	Biology of the Algae	no	no	no		
BIOL 504	Biol 230 + Biol 240	Biology of the Fungi (4)	no	no	no		
BIOL 505	Biol 230 + Biol 240	Comparative Anatomy of Vascular Plants (4)	yes	no	no		
BIOL 514	Biol 230 + Biol 240, GPA 3.0 or higher	Plant Taxonomy (5)	no	yes	no		
BIOL 555	Biol 230 + Biol 240	Marine Invertebrate Zoology (4)	no	no	no		
BIOL 570GW	Biol 230 + Biol 240 + GE Area 2	Biology of Fishes - GVAR (4)	no	no	no		
BIOL 600	Biol 230 + Biol 240	Animal Behavior	no	yes	no		
BIOL 638	Biol 230, GPA 3.0 or higher	Bioinformatics & Genome Annotations (4)	no	yes	no		

***Note: cannot double count Biol 453 to meet both Cell Biology & Evolution/Organismal Biology requirements**
 There are multiple options for meeting the GVAR requirement (course name must have GW) - consult with advisor
 GVAR course must be completed with a C- or better to meet graduation requirements

Upper division electives selected in consultation with an advisor:.....

1 - 9 additional units

•Courses can be those listed above, not already used to satisfy requirements in those categories.

•Only one of the following courses can be included among those selected:

BIOL 317, BIOL 327, BIOL 330, and BIOL 349.

•Up to three units of BIOL 699 can be used within the UD elective units

•All Biology courses that have BIOL 230 and/or BIOL 240 as prerequisites can also be used as electives.

Additional elective courses include: 1-9 elective units (incorrect in Bulletin)

			Fa 21	Sp 22	Su 22	√	on DPR?
BIOL 332	Biol 230 + Biol 240 + Biol 355, GPA 3.0 or higher	Health Disparities in Cancer	no	no	no		
BIOL 344GW	Biol 230 + Biol 240 + GE Area 2, GPA 3.0 or higher	Research Skills - GVAR	no	no	no		
BIOL 461	Biol 230 + Biol 240	Insect Taxonomy (4)	no	no	no		
BIOL 464	Biol 230 + Biol 240	Medical Entomology	no	no	no		
BIOL 470	Biol 230 + Biol 240	Natural History of Vertebrates (4)	no	yes	no		
BIOL 492	Biol 230 + Biol 240	Comparative Anatomy of Vertebrates (4)	no	no	no		
BIOL 530	Biol 230 + Biol 240	Conservation Biology	yes	no	no		
BIOL 550	Biol 230 + Biol 240 + upper division ecology course	Plant and Animal Interactions (4)	no	no	no		
BIOL 555	Biol 230 + Biol 240	Marine Invertebrate Zoology (4)	no	no	no		
BIOL 556	Biol 230 + Biol 240	Natural History of Marine Invertebrates (4)	no	no	no		
BIOL 577	Biol 230	Ecological and Environmental Modeling (4)	no	no	no		
BIOL 607	Biol 230 + Biol 240 + Biol 355	Conservation and Management of Marine Mammals	no	no	no		
BIOL 609	Biol 230	Physics in Medicine	no	no	no		
BIOL 614	Biol 230 + Biol 240	Vertebrate Histology (4)	no	no	no		

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Course Num.	Course Title	Units	on			v	DPR?
			Fa 21	Sp 22	Su 22		
BIOL 616	Biol 230 + Biol 240 + Phys 121 + [Biol 612 or Biol 630]	Cardiorespiratory Physiology	yes	yes	no		
BIOL 620	Biol 230 + Biol 240	Endocrinology	yes	yes	no		
BIOL 621	Biol 230 + Biol 240 + Biol 330 + Chem 130; Biol 492 or a vertebrate anatomy course recommended	Reproductive Physiology	yes	no	yes		
BIOL 622	Biol 230 + Biol 240	Hormones and Behavior	no	yes	no		
BIOL 623	Biol 230 + Biol 240 + Biol 612 + Chem 130, GPA 3.0 or higher	Pharmacology	no	yes	no		
BIOL 627	Biol 230 + Chem 115 + Phys 121	Biophysics	no	no	no		
BIOL 640	Biol 230 + Biol 240 + Chem 130 + Phys 121; Biol 350 and Biol 612 recommended	Cellular Neurosciences	yes	no	no		
BIOL 652	Biol 230 + Biol 240 OR one upper division biology course	Science Education Partners in Biology (4)	no	no	no		

Note: Bulletin double lists elective courses - please be guided by this list.

Course Num.	Course Title	Units

What course has student taken to meet GEAR?

GEAR course must be completed with a C- or better to meet graduation requirements

	Required	Completed
Total upper division unit requirements (required and elective)	24-25	_____
Total units for major	57	_____

Please ignore Bulletin "49-64" units - this is incorrect. This should be a 57-unit minimum.

Recommendations for targeted post-graduate plans

Health profession	Students must take Chem 216 Students must take the full year of organic chemistry with lab: Chem 233/234 and Chem 335/336.
Graduate programs	Students must take Chem 216 Students must take the full year of organic chemistry with lab: Chem 233/234 and Chem 335/336. Students should take the full year of biochemistry: Chem 340 and Chem 341 Student should consult with major advisor to optimize course plan for goals.
K-12 Teaching	Completion of the BA in General Biology and additional geoscience breadth courses can be used to meet the Subject Matter Competency Requirements for the Single Subject Credential in Biological Sciences Students must take Chem 216 Students must take Biol 337 (Evolution, 3 units) <i>Geosciences Breadth:</i> ASTR 115/116: Introduction to Astronomy, 3 units and Lab, 1 unit ERTH 112: Our Dynamic Earth Lecture and Lab, 4 units ERTH 400: Earth Systems I, 3 units (includes lab) or ERTH 535: Planetary Climate Change, 4 units (includes lab)
Forensics Career	Student transcript should contain: Biol 355 Genetics, Biol 357 Molecular Genetics, Chem 349 General Biochemistry, Math 124 Statistics and Chem 321/322 Analytical Chemistry.