

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

LD= \_\_\_\_\_  
 UD= \_\_\_\_\_

Student: \_\_\_\_\_  
 Last First  
 Advisor: \_\_\_\_\_

E-mail \_\_\_\_\_  
 Phone \_\_\_\_\_

**BACHELOR OF SCIENCE IN BIOLOGY: CONCENTRATION IN ECOLOGY**

*Course is 3 units unless otherwise noted.*

**Lower Division Requirements (24 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 231		Advising for Success as a Biology Major	1	yes	yes	yes		
BIOL 240	Biol 230	Introductory Biology II [Meets GE Areas B2 (Life Science) & B3 (Lab Science)]	5	yes	yes	no		
CHEM 115	see <a href="http://bulletin.sfsu.edu/courses/chem/">http://bulletin.sfsu.edu/courses/chem/</a>	General Chemistry I: Essential Concepts of Chemistry	5	yes	yes	no		
MATH 226	see <a href="http://bulletin.sfsu.edu/courses/math/">http://bulletin.sfsu.edu/courses/math/</a>	Calculus I	4	yes	yes	yes		
PHYS 111/112	see <a href="http://bulletin.sfsu.edu/courses/phys/">http://bulletin.sfsu.edu/courses/phys/</a>	General Physics I/Laboratory (3/1)	4	yes	yes	yes		

*Total lower division requirements (units): 24*

**Upper Division Requirements (17-20 units)**

Class	Prerequisites	Class Name	Units	Fa 21	Sp 22	Su 22	v	on DPR?
BIOL 337	Biol 230 + Biol 240 + Biol 355	Evolution	3	yes	yes	no		
BIOL 355	Biol 230 + Biol 240 + Chem 115	Genetics [meets GE UD-B requirement]	3	yes	yes	yes		
BIOL 458	one college-level Biology course	Biometry (4)	4	yes	yes	no		
BIOL 482	Biol 230 + Biol 240	Ecology (4)		yes	yes	no		
<i>One of the following courses upon advisement (3-6 units):</i>								
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 529GW	Biol 230 + Biol 240 + GE Area 2	Plant Ecology - GVAR (4)		yes	no	no		
BIOL 570GW	Biol 230 + Biol 240 + GE Area 2	Biology of Fishes - GVAR (4)		no	no	no		
BIOL 670GW	GE Area A2 + Biol 240 + Biol 458 with grades of C or better; concurrent enrollment in BIOL 671 and BIOL 699 or BIOL 897.	Ecology and Evolution of Marine Systems I - GVAR (6)		no	no	no		

*Ecology and Evolution Elective courses (select 9 units upon advisement)*

*Courses used to satisfy the electives above may not be double-counted here.*

Class	Prerequisites	Class Name	Units	Fa 21	Sp 22	Su 22	v	on DPR?
BIOL 380	Biol 355 (Biol 337 is recommended)	Evolutionary Developmental Biology		no	yes	no		
BIOL 411	Biol 355 + Biol 401 + BIOL 402GW + [CHEM 340 or CHEM 349]	Environmental Microbiology		no	no	no		
BIOL 453	Biol 230 + Biol 240 + Biol 355	General Parasitology		yes	no	no		
BIOL 460	Biol 230 + Biol 240	General Entomology (4)		no	no	no		
BIOL 461	Biol 230 + Biol 240	Insect Taxonomy (4)		no	no	no		
BIOL 470	Biol 230 + Biol 240	Natural History of Vertebrates (4)		no	yes	no		
BIOL 475GW <sup>1</sup>	Biol 230 + Biol 240 + GE Area 2	Herpetology - GVAR		no	yes	no		
BIOL 478GW <sup>1</sup>	Biol 230 + Biol 240 + GE Area 2	Ornithology - GVAR (4)		no	yes	no		
BIOL 490	Biol 230 + Biol 240	Ecology of Infectious Diseases (4)		no	no	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 529GW <sup>1</sup>	Biol 230 + Biol 240 + GE Area 2	Plant Ecology - GVAR (4)		yes	no	no		
BIOL 530	Biol 230 + Biol 240	Conservation Biology		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 555	Biol 230 + Biol 240	Marine Invertebrate Zoology (4)		no	no	no		
BIOL 570GW <sup>1</sup>	Biol 230 + Biol 240 + GE Area 2	Biology of Fishes - GVAR (4)		no	no	no		
BIOL 577	Biol 230	Ecological and Environmental Modeling (4)		no	no	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 600	Biol 230 + Biol 240	Animal Behavior		no	yes	no		
BIOL 670GW <sup>1</sup>	GE Area A2 + Biol 240 + Biol 458 with grades of C or better; concurrent enrollment in BIOL 671 + [BIOL 699 or BIOL 897]	Ecology and Evolution of Marine Systems I - GVAR (6)		no	no	no		
BIOL 671	BIOL 240 + Biol 458 with grades of C or better; concurrent enrollment in BIOL 670GW + [BIOL 699 or BIOL 897]	Ecology and Evolution of Marine Systems II (6)		no	no	no		

*Physiology and Additional Elective courses (Select 9 units upon advisement)*

*Courses used to satisfy the electives above may not be double-counted here.*

Class	Prerequisites	Class Name	Units	Fa 21	Sp 22	Su 22	v	on DPR?
BIOL 315	Biol 240 + Biol 458 (with grades C or better); GPA 3.0 or better	Field Methods in Ecology and Evolution (1)		no	no	yes		
BIOL 322	Biol 100	Human Sexuality: Integrative Science		no	no	no		
BIOL 327	GE Areas A1*, A2*, A3*, and B4*; one college-level Biology course	AIDS: Biology of the Modern Epidemic		yes	yes	no		
BIOL 328	Biol 230	Human Anatomy (4)		yes	yes	no		
BIOL 344GW	Biol 230 + Biol 240 + GE Area 2, GPA 3.0 or higher	Research Skills - GVAR		no	no	no		
BIOL 349	GE Areas A1*, A2*, A3*, and B4*	Bioethics		no	no	no		
BIOL 350	Biol 230 + Biol 240 + Chem 115	Cell Biology		yes	yes	yes		
BIOL 356	Biol 355 with a grade of B or better	Honors Genetics (2)		yes	yes	no		
BIOL 357	Biol 355	Molecular Genetics		yes	yes	no		
BIOL 358	Biol 230 + Math 199	Forensic Genetics: Math Matters (4)		yes	no	no		

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Fa 21	Sp 22	Su 22	v	DPR?
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BIOL 382	Biol 350 + Biol 355, GPA 3.0 or higher	Developmental Biology	yes	yes	no		
BIOL 391	One college-level physics course	Microscopy and Photomicrography (2)	no	no	no		
BIOL 401	Biol 230 + Biol 240 + Chem 233	General Microbiology	yes	yes	no		
BIOL 420	Biol 401 + Biol 402GW	General Virology	no	yes	no		
BIOL 425	Biol 230 + Biol 240 + [Biol 355 or Biol 401 or Biol 350] + Chem 130	Emerging Diseases	no	yes	no		
BIOL 430	Biol 401 with a C or better	Medical Microbiology	yes	no	no		
BIOL 435	Biol 350 or Biol 401	Immunology	no	yes	no		
BIOL 436	Biol 402GW, concurrent enrollment in Biol 435	Immunology Laboratory (2)	no	no	no		
BIOL 442	Biol 401 + Biol 402GW + Chem 349	Microbial Physiology	yes	no	no		
BIOL 443	Biol 442 (may be taken concurrently)	Microbial Physiology Laboratory (2)	no	no	no		
BIOL 446	Biol 401 + Biol 402GW + Biol 355	Microbial Genomics (4)	yes	no	no		
BIOL 454	Biol 453 (may be taken concurrently)	Parasitology Laboratory (1)	yes	no	no		
BIOL 475GW <sup>†</sup>	Biol 230 + Biol 240 + GE Area 2	Herpetology - GVAR	no	yes	no		
BIOL 478GW <sup>†</sup>	Biol 230 + Biol 240 + GE Area 2	Ornithology - GVAR (4)	no	yes	no		
BIOL 490	Biol 230 + Biol 240	Ecology of Infectious Diseases (4)	no	no	no		
BIOL 492	Biol 230 + Biol 240	Comparative Anatomy of Vertebrates (4)	no	no	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 508	Biol 230 + Biol 240	Plants and Human Affairs	no	no	no		
BIOL 514	Biol 230 + Biol 240, GPA 3.0 or higher	Plant Taxonomy (5)	no	yes	no		
BIOL 525	Biol 230 + Biol 240 + Chem 130	Plant Physiology	yes	yes	no		
BIOL 526	Biol 230 + Biol 240 + Chem 130	Plant Molecular Physiology Laboratory (2)	no	yes	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 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 570GW <sup>†</sup>	Biol 230 + Biol 240 + GE Area 2	Biology of Fishes - GVAR (4)	no	no	no		
BIOL 572	Upper-division standing; GPA of 3.0 or higher	Colloquium in Ecology, Evolution, and Conservation (2)	no	no	no		
BIOL 575	Biol 570GW or an ecology course	Fisheries Biology	no	no	no		
BIOL 577	Biol 230	Ecological and Environmental Modeling (4)	no	no	no		
BIOL 580	Biol 230 + Biol 240 + Chem 215 + Chem 216; ecology course recommended	Limnology	no	no	no		
BIOL 584	Chem 115	Marine Microbial Ecology Laboratory (1)	no	no	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		
BIOL 600	Biol 230 + Biol 240	Animal Behavior	no	yes	no		
BIOL 612	Biol 230 + Biol 240 + Chem 130 + Phys 121	Human Physiology	yes	yes	yes		
BIOL 617	Biol 612 or Biol 630	Environmental Physiology	no	no	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 630	Biol 230 + Biol 240 + [Chem 130 or Chem 233]	Animal Physiology	yes	yes	no		
BIOL 638	Biol 230, GPA 3.0 or higher	Bioinformatics & Genome Annotation (4)	no	yes	no		
BIOL 640	Biol 230 + Biol 240 + Chem 130 + Phys 121; Biol 350 and Biol 612 recommended	Cellular Neurosciences	yes	no	no		
BIOL 642	Biol 328 or Biol 612	Neural Systems Physiology	no	yes	no		
BIOL 644	Biol 230 + Biol 240 + [Biol 350 or Biol 355 or Biol 357]	LEADerS Service Learning Course: Learners Engaged in Advocating for Diversity in Science (4)	no	no	no		
OR BIOL 652	[Biol 230 + Biol 240] OR one upper division biology course	Science Education Partners in Biology (4)	no	no	no		
OR BIOL 654	Biol 230	Peer Assistants for Learning Science (4)	yes	yes	no		
BIOL 670GW <sup>†</sup>	GE Area A2 + Biol 240 + Biol 458 with grades of C or better; concurrent enrollment in BIOL 671 + [BIOL 699 or BIOL 897]	Ecology and Evolution of Marine Systems I - GVAR (6)	no	no	no		
BIOL 671	BIOL 240 + BIOL 458 with grades of C or better; concurrent enrollment in BIOL 670GW + [BIOL 699 or BIOL 897]	Ecology and Evolution of Marine Systems II (6)	no	no	no		
BIOL 699	Restricted to senior Biology majors; consent of the department and instructor.	Independent Study in Biology (1-3 units) <i>requires faculty mentor's approval</i>	yes	yes	no		

<sup>†</sup>May be used as an Ecology and Evolution or Physiology/Additional elective if not taken as one of the upper-division required courses.

Course Num.	Course Title	Units

**What course has student taken to meet GVAR?**

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

	Required	Completed
Total upper division unit requirements:	35-38	_____
Total units for major (minimum 59 units)	59-62	_____

**Recommendations for targeted post-graduate plans**

<b>Health profession:</b>	Students must take Chem 215/216 Students must take the full year of organic chemistry with lab: Chem 233/234 and Chem 335/336. Students must take Phys 121/122.
<b>Graduate programs</b>	Students must take Chem 215/216 Students should take 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 Students must take Phys 121/122. Student should consult with major advisor to optimize course plan for goals.