

**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 MARINE SCIENCE**

Course is 3 units unless otherwise noted.

**Lower Division Requirements (35-36 units)**

Sp/Su 24 based on 2023 offerings

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	Sp/Su 24 based on 2023 offerings			v	on DPR?
				Fa 23	Sp 24	Su 24		
BIOL 230		Introductory Biology I	5	yes	yes	no		
BIOL 231		Advising for Success as a Biology Major	1	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 <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	yes		
CHEM 130	Chem 115	General Organic Chemistry [meets GE Area B1]	3	yes	yes	yes		
MATH 226	see <a href="http://bulletin.sfsu.edu/courses/math/">http://bulletin.sfsu.edu/courses/math/</a>	Calculus I	4	yes	yes	yes		
<b>Select one physics sequence (4 units):</b>								
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)		yes	yes	yes		
PHYS 220/222 <sup>1</sup>	see <a href="http://bulletin.sfsu.edu/courses/phys/">http://bulletin.sfsu.edu/courses/phys/</a>	General Physics with Calculus I and Laboratory (3/1)		yes	yes	yes		
<b>Select 8 - 9 units from the following:</b>								
CHEM 215/216	Chem 115	General Chemistry II: Quant. Appl. of Chem. Conc./Lab (3/2)		yes	yes	215 yes		
MATH 227 <sup>1</sup>	see <a href="http://bulletin.sfsu.edu/courses/math/">http://bulletin.sfsu.edu/courses/math/</a>	Calculus II (4)		yes	yes	yes		
select appropriate physics lecture/lab to complete physics sequence								
PHYS 121/122 <sup>2</sup>	see <a href="http://bulletin.sfsu.edu/courses/phys/">http://bulletin.sfsu.edu/courses/phys/</a>	General Physics II and Laboratory (3/1)		yes	yes	yes		
PHYS 230/232 <sup>2</sup>	see <a href="http://bulletin.sfsu.edu/courses/phys/">http://bulletin.sfsu.edu/courses/phys/</a>	General Physics with Calculus II and Laboratory (3/1)		yes	yes	yes		
1 If taking PHYS 220/PHYS 222, MATH 227 must be taken concurrently. 2 PHYS 111/PHYS 112 are the prerequisites for PHYS 121/PHYS 122. PHYS 220/PHYS 222 are the prerequisites for PHYS 230/PHYS 232.								
<b>Total lower division requirements (units):</b>			<b>35 - 36</b>					

**Upper Division Requirements (22 - 27 units) [Bulletin states 22-25, but should be 27 units]**

Class	Prerequisites	Class Name	Units	Sp/Su 24 based on 2023 offerings			v	on DPR?
				Fa 23	Sp 24	Su 24		
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		
<b>Units selected from the following (3 - 4 units):</b>								
BIOL 582	Biol 230 + Biol 240	Biological Oceanography & Limnology (4)		no	yes	no		
CHEM 680	Chem 215	Chemical Oceanography		no	yes	no		
ERTH 400	At least 9 units of coursework in geoscience	Earth Systems I		yes	no	no		
ERTH 434	Upper-division standing; MATH 226 + [PHYS 111 or PHYS 220]; GPA of 3.0 or higher	Coastal Processes		no	no	no		
ERTH 470	Upper-division standing; [ERTH 170 or EARTH 172 or EARTH 270] and PHYS 220; GPA of 3.0 or higher	Physical Oceanography		no	no	no		
<b>Select one class from the following (GWAR options)</b>								
BIOL 344GW	Biol 230 + Biol 240 + GE Area 2, GPA 3.0 or higher	Research Skills - GWAR		no	no	no		
BIOL 475GW	Biol 230 + Biol 240 + GE Area 2	Herpetology - GWAR		no	yes	no		
BIOL 478GW	Biol 230 + Biol 240 + GE Area 2	Ornithology - GWAR (4)		no	yes	no		
BIOL 570GW	Biol 230 + Biol 240 + GE Area 2	Biology of Fishes - GWAR (4)		yes	no	no		
BIOL 586GW	Biol 230 + Biol 240 + GE Area 2	Marine Ecology Laboratory (4)		no	yes	no		
BIOL 670GW*	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 - GWAR (6)		no	yes	no		

**Units selected from the following (6 - 7 units):**

Class	Prerequisites	Class Name	Units	Sp/Su 24 based on 2023 offerings			v	on DPR?
				Fa 23	Sp 24	Su 24		
BIOL 315	Biol 240 + Biol 458 (with grades C or better); GPA 3.0 or better	Field Methods in Ecology and Evolution (1)		no	yes	yes		
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)		no	no	no		
BIOL 357	Biol 355	Molecular Genetics		yes	yes	no		
BIOL 380	Biol 355 (Biol 337 is recommended)	Evolutionary Developmental Biology		no	no	no		
BIOL 382	Biol 350 + Biol 355, GPA 3.0 or higher	Developmental Biology		no	no	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 411	Biol 355 + BIOL 401 + BIOL 402GW + [CHEM 340 or CHEM 349]	Environmental Microbiology		no	no	no		
BIOL 460	Biol 230 + Biol 240	General Entomology (4)		no	no	no		
BIOL 470	Biol 230 + Biol 240	Natural History of Vertebrates (4)		no	yes	no		
BIOL 482	Biol 230 + Biol 240	Ecology (4)		yes	yes	no		
BIOL 502	Biol 230 + Biol 240, GPA 3.0 or higher	Biology of the Algae		no	yes	no		

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											Fa	Sp	Su	v	on DPR?
											23	24	24		
BIOL 525	Biol 230 + Biol 240 + Chem 130	Plant Physiology				no	yes	no							
BIOL 526	Biol 230 + Biol 240 + Chem 130	Plant Molecular Physiology Laboratory (2)				no	no	no							
BIOL 530	Biol 230 + Biol 240	Conservation Biology				yes	no	no							
BIOL 532	Biol 230 + Biol 240	Restoration Ecology				no	no	no							
BIOL 534	Biol 230 + Biol 240	Wetland Ecology (4)				no	yes	no							
BIOL 555	Biol 230 + Biol 240	Marine Invertebrate Zoology (4)				yes	no	no							
BIOL 556	Biol 230 + Biol 240	Natural History of Marine Invertebrates (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 580	Biol 230 + Biol 240 + Chem 215 + Chem 216; ecology course recommended	Limnology				no	no	no							
BIOL 582	Biol 230 + Biol 240	Biological Oceanography and Limnology (4)				no	yes	no							
BIOL 585	Biol 230 + Biol 240	Marine Ecology				no	no	no							
BIOL 600	Biol 230 + Biol 240	Animal Behavior				no	yes	no							
BIOL 607	Biol 230 + Biol 240 + Biol 355	Conservation and Management of Marine Mammals				no	no	no							
BIOL 617	Biol 612 or Biol 630	Environmental Physiology				no	yes	no							
BIOL 630	Biol 230 + Biol 240 + [Chem 130 or Chem 233]	Animal Physiology				yes	no	no							
BIOL 631GW	GE Area 2 + Biol 612 or Biol 630	Animal Physiology Laboratory - GVAR (4)				yes	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 654	Biol 230	Peer Assistants for Learning Science (4)				yes	yes	no							
BIOL 670GW*	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	yes	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	yes	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							
GEOG 629	Geog 603	Coastal and Marine Applications of GIS				no	no	no							
MSCI 306	see <a href="http://bulletin.sfsu.edu/courses/msci/">http://bulletin.sfsu.edu/courses/msci/</a>	Marine Science Diving and Boating (2)				no	yes	no							

\*Note: cannot double count Biol 670GW to meet both GVAR and UD elective requirements

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
<b>Total upper division unit requirements :</b>	<b>22-27</b>	_____
<b>Total units for major</b>	<b>57-63</b>	_____

**Recommendations for targeted post-graduate plans**

**Health profession**

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 should take biochemistry: Chem 349  
 Students must take Phys 121/122.

**Graduate programs**

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.