

BACHELOR OF SCIENCE IN BIOLOGY: CONCENTRATION IN PHYSIOLOGY ROADMAP – QUANTITATIVE REASONING CATEGORY III/IV

120 Total Units Required

Minimum Number of Units in the Major: 59

This roadmap is a suggested plan of study and does not replace meeting with an advisor. Please note that students may need to adjust the actual sequence of courses based on course availability. Please consult your Degree Planner (<https://registrar.sfsu.edu/degreeplanner/>) and an advisor for further guidance.

To avoid taking additional units, it is recommended that you meet the SF State Studies (AERM, GP, ES, SJ) requirements within your GE or major.

Course	Title	Units
First Semester		
BIOL 230	Introductory Biology I (Major Lower-Division Core)	5
BIOL 231	Advising for Success as a Biology Major (Major Lower-Division Core)	1
MATH 197	Prelude to Calculus I (Prerequisite for MATH 226) ¹	3
GE Area 1A: English Composition ²		3
GE Area 1: English Communication		3
Units		15
Second Semester		
BIOL 240	Introductory Biology II (Major Lower-Division Core) ³	5
MATH 198	Prelude to Calculus II (Prerequisite for MATH 226, GE 2) ¹	3
CHEM 115	General Chemistry I (Major Lower-Division Core)	4
GE Area 1: English Communication		3
Units		15
Third Semester		
CHEM 215	General Chemistry II (Major Lower-Division Core)	4
MATH 226	Calculus I (Major Lower-Division Core, GE 2) ¹	4
GE Area 3: Arts and Humanities		3

GE Area 4: Social and Behavioral Sciences ⁴		3
Units		14
Fourth Semester		
Select One (Major Lower-Division Core): ⁵		3
CHEM 130	General Organic Chemistry	
CHEM 233	Organic Chemistry I	
Select One Set of Courses (Major Lower-Division Core, GE 5A, GE 5C): ⁶		4
PHYS 111 & PHYS 112	General Physics I and General Physics I Laboratory	
PHYS 220 & PHYS 222	General Physics with Calculus I and General Physics with Calculus I Laboratory	
GE Area 3: Arts and Humanities		3
GE Area 4: Social and Behavioral Sciences ⁴		3
GE Area 6: Ethnic Studies (https://bulletin.sfsu.edu/undergraduate-education/general-education/areasix/)		3
Units		16
Fifth Semester		
BIOL 355	Genetics (Major Upper-Division Core) ⁷	3
Select One (Major Upper-Division Core):		3
BIOL 612	Human Physiology	
BIOL 630	Animal Physiology	
Select One (Major Lower-Division Core): ⁵		3
CHEM 235	Organic Chemistry II	
SF State Studies or University Elective (if CHEM 130 taken)		
Select One Set of Courses (Major Lower-Division Core): ⁶		4
PHYS 121 & PHYS 122	General Physics II and General Physics II Laboratory	
PHYS 230 & PHYS 232	General Physics with Calculus II and General Physics with Calculus II Laboratory	
U.S. and California Government (https://bulletin.sfsu.edu/undergraduate-education/american-institutions/#usg)		3
Units		16
Sixth Semester		
Select One (Major Upper-Division Core):		3
CHEM 340	Biochemistry I	
CHEM 349	General Biochemistry	
SF State Studies or University Elective - Take Three		9
GE Area 4UD: Upper-Division Social and Behavioral Sciences		3
Units		15
Seventh Semester		
BIOL 337	Evolution (Major Upper-Division Core)	3
Select One (Major Upper-Division Core):		3-4

BIOL 613GW	Human Physiology Laboratory - GVAR	
BIOL 631GW & BIOL 631	Animal Physiology Laboratory - GVAR and Animal Physiology Laboratory Discussion	
Major Upper-Division Electives (10 Units Total) ⁸		6
GE Area 3UD: Upper-Division Arts or Humanities		3
	Units	15-16
Eighth Semester		
Major Upper-Division Electives (10 Units Total) ⁸		4
SF State Studies or University Elective – Take Three		10
	Units	14
	Total Units	120-121

¹ Students should use their Pathway/Category (<https://gatorsmartstart.sfsu.edu/pathways/>) to determine the appropriate GE 2 course option. For directions on how to view your Pathway/Category, visit how to find your pathway (<https://gatorsmartstart.sfsu.edu/howtofindyourpathways/>). Questions? Contact Gator Smart Start. (<https://gatorsmartstart.sfsu.edu/>)

² Students should use their Pathway/Category (<https://gatorsmartstart.sfsu.edu/pathways/>) to determine the appropriate GE 1A course option. For directions on how to view your Pathway/Category, visit how to find your pathway (<https://gatorsmartstart.sfsu.edu/howtofindyourpathways/>). Questions? Contact Gator Smart Start. (<https://gatorsmartstart.sfsu.edu/>)

³ GE Area 5B (Biological Science) is satisfied upon completion of BIOL 240.

⁴ First-time freshmen must take one lower-division Area 4 course that meets US History (USH).

⁵ CHEM 233 is a prerequisite for CHEM 235. If students plan to take CHEM 235, they must take CHEM 233.

⁶ PHYS 111/PHYS 112 are prerequisites for PHYS 121/PHYS 122. PHYS 220/PHYS 222 are prerequisites for PHYS 230/PHYS 232.

⁷ [Area 5UD \(Upper-Division Science\)](#) is satisfied upon completion of BIOL 355.

⁸ **Guided Electives (10 units)**

A full list of courses that can fulfill this requirement can be found in the Degree Requirements (<https://bulletin.sfsu.edu/colleges/science-engineering/biology/bs-biology-concentration-physiology/#degreerequirementstext>).