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

LD=	Student:			E-mail
UD=		Last	First	
	Advisor:			Phone

BACHELOR OF SCIENCE IN BIOLOGY: CONCENTRATION IN CELL & MOLECULAR BIOLOGY

All courses for the major must be completed with a letter grade (CR/NC is not acceptable).

	quirements (30-38 units) [this should be	30-33 units]		Sp/	Su 2!	5 bas	ed	on 2024
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 24	Sp 25	Su 25	٧	on DPR?
BIOL 230		Introductory Biology I (5)	5	yes	yes	no		
BIOL 231		Advising for Success as a Biology Major (1)	1	yes	yes	no		
BIOL 240	Biol 230	Introductory Biology II (5) [Meets GE Area B2 (Life Science)]	5	yes	yes	no		
CHEM 115	see https://bulletin.sfsu.edu/courses/chem/	General Chemistry I with lab (4)	4	yes	yes	yes		
CHEM 215	Chem 115	General Chemistry II with lab (4)	4	yes	yes	yes		
MATH 226	see https://bulletin.sfsu.edu/courses/math/	Calculus I (4)	4	yes	yes	yes		
PHYS 111/112	see https://bulletin.sfsu.edu/courses/phys/	General Physics I/Laboratory (3/1)	4	yes	yes	yes		
	chemistry sequence (3-6 units):							
CHEM 130	Chem 115	General Organic Chemistry		yes	yes	yes		
CHEM 233 and CHEM 335	see https://bulletin.sfsu.edu/courses/chem/	Organic Chemistry I and Organic Chemistry II		yes	yes	yes		
Note: Chem 115 a	nd Chem 215 were revised as of Fall 2024	Total lower division requirements (units):	30 - 33					
The courses listed	in purple bold text are the biology core cou	urses shared across the Biology BS concentrations.		_		,	,	on
Upper Division Re	quirements (19 units)		Units	Fa 24	Sp 25	Su 25	٧	DPR?
BIOL 337	Biol 230 + Biol 240 + Biol 355	Evolution	3	yes	yes	no		
BIOL 350	Biol 230 + Biol 240 + Chem 115	Cell Biology	3	yes	yes	yes		
BIOL 351GW	Biol 350 + Biol 355 + GE Area 2	Experiments in Cell and Molecular Biology - GWAR (4)	4	yes	yes	no		
	Biol 230 + Biol 240 + Chem 115	Genetics [meets GE UD-B requirement]	3	yes	yes	yes		
BIOL 355			_	ves	ves	no		
BIOL 355 BIOL 357	Biol 355	Molecular Genetics	3	ycs	yes			
BIOL 357		Molecular Genetics	3	ycs	yes			
BIOL 357	Biol 355	Molecular Genetics Biochemistry I			yes			

Upper Division Electives upon advisement (9 units)

At least one elective course must have an upper division laborato.

At least one elective course must have an upper division laboratory component.						on		
Graduate level c	ourses may be used upon advisement			Fa 24	Sp 25	Su 25	٧	DPR?
BIOL 328 [‡]	Biol 230	Human Anatomy (4)		yes	yes	no		
BIOL 332	Biol 230 + Biol 240 + Biol 355, GPA 3.0 or higher	Health Disparities in Cancer		yes	no	no		
BIOL 349	GE Areas A1*, A2*, A3*, and B4*	Bioethics		no	no	no		
BIOL 356	Biol 355 with a grade of B or better	Honors Genetics (2)		no	no	no		
BIOL 358	Biol 230 + Math 199	Forensic Genetics: Math Matters (4)		no	no	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	yes	no		
BIOL 401	Biol 230 + Biol 240 + Chem 233	General Microbiology		yes	yes	no		
BIOL 420	Biol 401 + Biol 402GW	General Virology		yes	no	no		
BIOL 425	Biol 230 + Biol 240 + [Biol 355 or Biol 401 or Biol 350] + Chem 130	Emerging Diseases		no	yes	no		
BIOL 430	Bio 401 with a C or better	Medical Microbiology		no	yes	no		
BIOL 431 [‡]	Biol 401 + Biol 402GW + Chem 349	Medical Microbiology Lab (2)		no	no	no		
BIOL 435	Biol 350 or Biol 401	Immunology		yes	no	no		
BIOL 436 [‡]	Biol 402GW, concurrent enrollment in Biol 435	Immunology Laboratory (2)		yes	no	no		

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								on
				Fa 24	Sp 25	Su 25	v	DPR?
BIOL 442	Biol 401 + Biol 402GW + Chem 349	Microbial Physiology		no	no			
BIOL 443 [‡]	Biol 442 (may be taken concurrently)	Microbial Physiology Microbial Physiology Laboratory (2)		no	no			
BIOL 446	Biol 401 + Biol 402GW + Biol 355	Microbial Genomics (4)		no	ves	_		
BIOL 453	Biol 230 + Biol 240 + Biol 355	General Parasitology			no			
BIOL 454 [‡]	Biol 453 (may be taken concurrently)	Parasitology Laboratory (1)		yes	no	1		
BIOL 458				_	yes			
BIOL 458	one college-level Biology course	Biometry (4)		yes	_			
	Biol 230 + Biol 240	Ecology (4)		yes	_			
BIOL 490	Biol 230 + Biol 240	Ecology of Infectious Diseases (4)		no	yes			
BIOL 525	Biol 230 + Biol 240 + Chem 130	Plant Physiology		no	yes			
BIOL 526 [‡]	Biol 230 + Biol 240 + Chem 130	Plant Molecular Physiology Laboratory (2)		no	no	no		
BIOL 612	Biol 230 + Biol 240 + Chem 130 + Phys 121	Human Physiology		yes	yes	yes		
BIOL 615	Biol 230 + Biol 240 + Biol 612	Molecular Pathophysiology		no	no	no		
BIOL 619	Biol 212 or Biol 612	Pathophysiology		no	no	no		
BIOL 620	Biol 230 + Biol 240	Endocrinology		no	no	no		
	Biol 230 + Biol 240 + Biol 330 + Chem							
BIOL 621	130; Biol 492 or a vertebrate anatomy	Reproductive Physiology		no	no	yes		
DIOL 021	course recommended	Reproductive rinysiology		110	110	yes		
PIOL 622		Harmon or and Poheries		p	\	p -	_	
BIOL 622	Biol 230 + Biol 240	Hormones and Behavior		no	yes	_	-	
BIOL 627	Biol 230 + Chem 115 + Phys 121	Biophysics		no	no	no	_	
BIOL 630	Biol 230 + Biol 240 + [Chem 130 or	Animal Physiology		yes	no	no		
	Chem 233]	, ,					_	
BIOL 638	Biol 230, GPA 3.0 or higher	Bioinformatics & Genome Annotation (4)		yes	no	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		
DIOL 042	Biol 230 + Biol 240 + [Biol 350 or Biol	LEADerS Service Learning Course: Learners Engaged in		110	yes	110		
BIOL 644	355 or Biol 357]	Advocating for Diversity in Science (4)		no	no	no		
OR BIOL 654	Biol 230	Peer Assistants for Learning Science (4)		vec	VOS	no		
UN DIOL 004		r eer Assistants for Learning Science (4)		yes	yes	110	_	
BIOL 667 [‡]	Math 226; Biol 230 or Chem 215 with a grade of C or better	Optical Engineering for the Biological Sciences		no	yes	no		
BIOL 699	Restricted to senior Biology majors; consent of the department and instructor.	Independent Study in Biology (1-3 units) requires faculty mentor's approval		yes	yes	no		
CSC 306 [‡]	Restricted to Biology, Chemistry, and Biochemistry majors and pre-majors; upper-division standing; or permission of the instructor.	An Interdisciplinary Approach to Computer Programming		yes	yes	no		
*meets upper division	n laboratory elective requirement	Upper Division Electives (units)					•	
Biol 699 should get	nerally be considered a lab elective	need to submit an advisor request if appropriate	9					
Course Num.	<u>, , , , , , , , , , , , , , , , , , , </u>	Course Title	Units		-			
	T			-				
				_				
What course has stu	dent taken to meet GWAR? (typically Bi	ol 351GW)						
	pe completed with a C- or better to meet	·	Required					Complet
source must b		J		-				
		Total upper division unit requirements (required	28	1				
		and elective)		I				
		Total units for major (minimum 58 units)	58-61	ĺ				
				-				
	or torgotod noct anadusts							
Recommendations for	or targeted post-graduate plans							
	or targeted post-graduate plans	Students generally required to take the full year of						
Recommendations for the second	or targeted post-graduate plans	organic chemistry with lab: Chem 233/234 and Chem						
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	or targeted post-graduate plans	organic chemistry with lab: Chem 233/234 and Chem 335/336 (check your target program)						
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Health profession	or targeted post-graduate plans	organic chemistry with lab: Chem 233/234 and Chem 335/336 (check your target program) Students generally required to take Phys 121/122 Students should check their target programs to confirm requirements. Students generally required to take the full year of organic chemistry with lab: Chem 233/234 and Chem 335/336 (check your target program)						
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