

**Chemistry, B.S. - Biochemistry Subplan/Option: 120 units**  
2019-2020 Academic Year

	<b>Fall</b>		<b>Units</b>	<b>Spring</b>		<b>Units</b>	<b>Comments</b>
	<b>Courses</b>	<b>Requirements/Comments</b>		<b>Courses</b>	<b>Requirements/Comments</b>		
<b>Year 1</b>	CHM 1210 General Chemistry I (B1) (Success Marker)	Prereq: C or better in MAT 12, 105, 106, 112, 114, 115, 116, 120, 125, 130, 191, 214, 216, 224, MAT 1050, MAT 1052, MAT 1060, MAT 1140, MAT 1150, MAT 1200, MAT 1250, MAT 1300, MAT 1310, MAT 1910, MAT 2140, MAT 2240, MAT 2250, STA 120, or STA 1200; or C- o	3	CHM 1220 General Chemistry II (B1) (Success Marker)	Prereq: C- or better in CHM 1210, CHM 122 or CHM 122B; and C- or better in CHM 1210L, CHM 122L or CHM122LB. Coreq: CHM 1220L.	3	
	CHM 1210L General Chemistry Laboratory I (B3) (Success Marker)	Prereq: C or better in MAT 12, 105, 106, 112, 114, 115, 116, 120, 125, 130, 191, 214, 216, 224, MAT 1050, MAT 1052, MAT 1060, MAT 1140, MAT 1150, MAT 1200, MAT 1250, MAT 1300, MAT 1310, MAT 1910, MAT 2140, MAT 2240, MAT 2250, STA 120, or STA 1200; or C- or better Coreq: CHM 1210.	1	CHM 1220L General Chemistry Laboratory II (B3) (Success Marker)	Prereq: C- or better in CHM 1210, CHM 122 or CHM 122B; and C- or better in CHM 1210L, CHM 122L or CHM122LB. Coreq: CHM 1220.	1	
	MAT 1140 Calculus I (B4) (Success Marker)	Prereq: C or better in MAT 1050 and MAT 1060, or appropriate score on MDTP or ALEKS placement test.	4	MAT 1150 Calculus II (B4) (Success Marker)	Prereq: MAT 1140, MAT 115B, MAT 1140C, AP Calc AB >=3, or AP Calc BC >=3.	4	
	BIO 1210 Foundations of Biology: Energy, Matter, and Information (B2)		3	BIO 1220 Foundations of Biology: Evolution, Ecology, and Biodiversity	Prereq: BIO 121, BIO 121L, and BIO 1210B, or BIO 1210 and BIO 1210L. Coreq: BIO 1220L.	3	
	BIO 1210L Foundations of Biology: Energy, Matter, and Information Laboratory (B3)		1	BIO 1220L Foundations of Biology: Evolution, Ecology, and Biodiversity Laboratory	Prereq: BIO 121, BIO 121L, and BIO 1210B, or BIO 1210 and BIO 1210L. Coreq: BIO 1220.	1	
	GE Area A2: Written Communication (Success Marker)		3	GE Area A1: Oral Communication		3	
	<b>Total Units</b>		<b>15</b>	<b>Total Units</b>		<b>15</b>	

Year 2	Fall		Units	Spring		Units	Comments
	Courses	Requirements/Comments		Courses	Requirements/Comments		
	CHM 2210 Quantitative Analysis	Prereq: C- or better in CHM 123 or CHM 1220; and CHM 123L or CHM 1220L. Coreq: CHM 2210L.	2	CHM 2910A Chemical Communication Activity	Prereq: C- or better in CHM 1220 or CHM 123, and C- or better in CHM 1220L or CHM 123L.	1	
CHM 2210L Quantitative Analysis Laboratory	Prereq: C- or better in CHM 123 or CHM 1220; and C- or better in CHM 123L or CHM 1220L. Coreq: CHM 2210.	2	CHM 3150 Organic Chemistry II	Prereq: C- or better in CHM 3140, CHM 315, or CHM 315B.	3		
CHM 3140 Organic Chemistry I	Prereq: C- or better in CHM 123 or CHM 1220; and C- or better in CHM 123L or CHM 1220L.	4	CHM 3150L Organic Chemistry Laboratory II	Prereq: C- or better in CHM 3140L or CHM 318L; and CHM 316 or CHM 3150.	1		
CHM 3140L Organic Chemistry Laboratory I	Prereq: C- or better in CHM 3140 or CHM 315; CHM 3140 can be concurrent.	1	Option Required	BIO 2060/L Basic Microbiology/Laboratory or BIO 2400 Genetics	3		
PHY 1510 Introduction to Newtonian Mechanics (B1)	Prereq: C- or better in MAT 114, MAT 1140, MAT 1140C, MAT 115, MAT 116 or MAT 1150. Coreq: PHY 1510L.	3	PHY 1520 Introduction to Electromagnetism and Circuits	Prereq: C- or better in MAT 115 or MAT 1150; and C- or better in PHY 132, PHY 132B, PHY 1510B or PHY 1510. Coreq: PHY 1520L.	3		
PHY 1510L Newtonian Mechanics Laboratory (B3)	Coreq: PHY 1510.	1	PHY 1520L Introductory Laboratory on Electromagnetism and Circuits	Coreq: PHY 1520.	1		
GE Area A3: Critical Thinking		3	GE Area E: Lifelong Learning and Self-Development		3		
<b>Semester Total Units</b>		<b>16</b>	<b>Semester Total Units</b>		<b>15</b>		

	Fall		Units	Spring		Units	Comments
	Courses	Requirements/Comments		Courses	Requirements/Comments		
Year 3	CHM 3270 Biochemistry I	Prereq: C- or better in CHM 1220 or CHM 123; C- or better in CHM 1220L or CHM 123L; C- or better in CHM 316 or CHM 3150; C- or better in CHM 317L or CHM 3140L; and D or better in BIO 115, BIO 121, BIO 1150 or BIO 1210. Coreq: CHM 3270L.	3	CHM 3280 Biochemistry II	Prereq: C- or better in CHM 328 or CHM 3270, and C- or better in CHM 328L or CHM 3270L.	3	<i>Graduation Writing Test must be taken before completion of 75 units.</i>
	CHM 3270L Biochemistry Laboratory I	Prereq: C- or better in CHM 1220, CHM 122, or CHM 123; C- or better in CHM 1220L, CHM 122L, or CHM 123L; C- or better in CHM 321, CHM 327, CHM 3210, or CHM 3270; C- or better in CHM 250L, CHM 317L, CHM 2010L, or CHM 3140L; D or better in BIO 115, BIO 121,	1	CHM 3280L Biochemistry Laboratory II	Prereq: C- or better in CHM 328 or CHM 3270, and C- or better in CHM 328L or CHM 3270L.	1	
	CHM 3420 Spectroscopic Methods	Prereq: C- or better in CHM 221, CHM 2210 or CHM 221B; and C- or better in CHM 221L, CHM 2210L or CHM 221LB. Coreq: CHM 3420L.	1	CHM 3430 Separation Methods	Prereq: C- or better in CHM 221, CHM 2210, or CHM 221B; and C- or better in CHM 221L, CHM 2210L, or CHM 221LB. Coreq: CHM 3430L.	1	
	CHM 3420L Spectroscopic Methods Laboratory	Prereq: C- or better in CHM221, CHM 2210, or CHM221B; and CHM221L, CHM 2210L, or CHM221LB. Coreq: CHM 3420.	1	CHM 3430L Separation Methods Laboratory	Prereq: C- or better in CHM 221, CHM 2210, or CHM 221B; and C- or better in CHM 221L, CHM 2210L, or CHM 221LB. Coreq: CHM 3430.	1	
	Option Elective	Select from Curriculum Sheet	3	GE Area B5: Science and Technology Synthesis		3	
	GE Area C2: Literature, Modern Languages, Philosophy and Civilization		3	GE Area C1: Visual and Performing Arts		3	
	GE Area D1: U.S. History American Ideals		3	GE Area D2: U.S. Constitution and California Government		3	
	<i>Take the Graduation Writing Test</i>						
<b>Semester Total Units</b>		<b>15</b>	<b>Semester Total Units</b>		<b>15</b>		

Year 4	Fall		Units	Spring		Units	Comments
	Courses	Requirements/Comments		Courses	Requirements/Comments		
	CHM 3040 Elements of Physical Chemistry I	Prereq: CHM 123 or CHM 1220; MAT 116 or MAT 1150; PHY 133 or PHY 1520; and PHY 133L or PHY 1520L.	3	CHM 3050 Elements of Physical Chemistry II	Prereq: CHM 123 or CHM 1220; MAT 116 or MAT 1150; PHY 133 or PHY 1520; and PHY 133L or PHY 1520L.	3	
CHM 4530 Informational Biomolecules and Recombinant DNA	Prereq: C- or better in CHM 328 or CHM 3280.	3	CHM 3520L Physical Chemistry Laboratory	Prereq: C- or better in CHM 305, CHM 3040, CHM 3050, CHM 312, CHM 3110 or CHM 3120.	2		
Option Elective	Select from Curriculum Sheet	3	Option Elective	Select from Curriculum Sheet	3		
GE Area D3: Social Sciences: Principles, Methodologies, Value Systems, and Ethics		3	GE Area D4: Social Science Synthesis		3		
GE Area C1 or GE Area C2	Prereq: Select either C1: Visual and Performing Arts or C2: Literature, Modern Languages, Philosophy and Civilization course	3	GE Area C3: Arts and Humanities Synthesis		3		
<i>File an application to graduate</i>							
<b>Semester Total Units</b>		<b>15</b>	<b>Semester Total Units</b>		<b>14</b>		
					<b>Total Units</b>	<b>120</b>	