

Major: Chemical Engineering, B.S.: 127 units
2018-2019 Academic Year

	Fall		Units	Spring		Units	Comments
	Courses	Requirements/Comments		Courses	Requirements/Comments		
Year 1	CHE 1311 Introduction to Chemical Engineering	Prereq: MAT 105, MAT 112, MAT 1050, MAT 1052, MAT 1140, or MAT 114.	1	CHE 1321 Chemical and Materials Engineering Analysis	Prereq: C- or better in CHE 1311/CHE 1411L or C- or better in CHE 131/141L.	1	
	CHE 1411L Introduction to Chemical Engineering Laboratory	Prereq: MAT 105 or MAT 1050.	1	CHE 1421L Chemical and Materials Engineering Analysis Laboratory	Prereq: C- or better in CHE 132 or CHE 1311.	1	
	MAT 1140 Calculus I (B4)	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)	Prereq: MAT 1140, MAT 115B, MAT 1140C, AP Calc AB >=3, or AP Calc BC >=3.	4	
	CHM 1210 General Chemistry I (B1)	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 1210L.	3	CHM 1220 General Chemistry II (B1)	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)	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)	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	
	GE Area A2: Written Communication		3	PHY 1510 Introduction to Newtonian Mechanics (B1)	Prereq: C- or better in MAT 114 or MAT 1140. Coreq: PHY 1510L.	3	
	GE Area E: Lifelong Learning and Self-Development		3	PHY 1510L Newtonian Mechanics Laboratory (B3)		1	
			0	GE Area A1: Oral Communication		3	
Total Units			16	Total Units		17	

Year 2	Fall		Units	Spring		Units	Comments
	Courses	Requirements/Comments		Courses	Requirements/Comments		
		CHE 2011 Material and Energy Balances I	Prereq: C- or better in CHM 121 and CHM 122; or CHM 1210; and C- or better in MAT 115 or MAT 1150.	2	CHE 2021 Material and Energy Balances II	Prereq: C- or better in CHE 201 or CHE 2011, and MAT 215 or MAT 2140.	2
	GE Area B2: Life Sciences		2	CHE 2851 Applied Mathematics in Chemical and Materials Engineering	Prereq: C- or better in CHE 201 or CHE 2011, and MAT 215, MAT 216, or MAT 2140.	2	
	CHM 2010 Elements of Organic Chemistry	Prereq: CHM 123 or CHM 1220; and CHM 123L or CHM 1220L.	3	CHE 2301 Process and Automation	Prereq: C- or better in PHY 133 or PHY 1520, and MAT 215 or MAT 2140.	2	
	CHM 2010L Elements of Organic Chemistry Laboratory	Prereq: CHM 123 or CHM 1220; and CHM 123L or CHM 1220L; or concurrent enrollment in CHM 2010.	1	CHE 2301L Process and Automation Laboratory	Prereq: C- or better in PHY 133 or PHY 1520, and MAT 215 or MAT 2140 and; CHE 201 or CHE 2011; OR IME 113L or IME 1130L.	1	
	MAT 2140 Calculus III	Prereq: MAT 116, MAT 214, MAT 1150, or MAT 1150C.	4	MAT 2240 Elementary Linear Algebra and Differential Equations	Prereq: MAT 116 or MAT 1150.	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 or PHY 1510. Coreq: PHY 1520L.	3	MTE 2070 Materials Science and Engineering	Prereq: CHM 1210, CHM 1150, CHM 121, or CHM 115; PHY 131 or PHY 1510; PHY 131L or PHY 1510L; and MAT 116 or MAT 1150.	2	
	PHY 1520L Introductory Laboratory on Electromagnetism and Circuits		1	GE Area C1: Visual and Performing Arts		3	
			0			0	
	Semester Total Units		16	Semester Total Units		15	

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	Courses	Requirements/Comments		Courses	Requirements/Comments			
Year 3	CHE 3021 Chemical Engineering Thermodynamics I	Prereq: MTE 2070 or MTE 207; MAT 2240, MAT 224, or MAT 216; PHY 1520 or PHY 133; and C- or better in CHE 2021 or CHE 202.	3	CHE 3031 Chemical Engineering Thermodynamics II	Prereq: CHE 302 or CHE 3021, and CHE 311 or CHE 3111.	2	<i>Graduation Writing Test must be taken before completion of 75 units.</i>	
	CHE 3111 Transport Phenomena I	Prereq: C- or better in CHE 202 or CHE 2021; ME 214 or CHE 2851; PHY 133 or PHY 1520; and MTE 207 or MTE 2070.	4	CHE 3121 Transport Phenomena II	Prereq: CHE 311 or CHE 3111, and CHE 302 or CHE 3021.	3		
	CHE 3221L Transport Laboratory I	Prereq: CHE 202 or CHE 2021; and CHE 132 or CHE 1321. Coreq: CHE 3111.	1	CHE 3331L Transport Laboratory II	Prereq: CHE 311 or CHE 3111, and CHE 322L or CHE 3221L.	1		
	EGR 4810 Project Design Principles and Applications (B5)		1	EGR 4830 Project Design Principles and Applications (B5)		1		
	EGR 4820 Project Design Principles and Applications (B5)		1	CHE 4631 Undergraduate Research Project	Prereq: EGR 482 or EGR 4810.	1		
	MTE 3170L Materials Science and Engineering Laboratory	Prereq: MTE 207 or MTE 2070.	1	CHE 3040 Kinetics & Reactor Design	Prereq: CHE 302 or CHE 3021, and CHE 311 or CHE 3111.	3		
	GE Area C2a: Philosophy and Civilization		3	GE Area C3: Arts and Humanities Synthesis		3		
	GE Area C2b: Literature and Language Other than English		3	GE Area D2: U.S. Constitution and California Government		3		
	<i>Take the Graduation Writing Test</i>							
	Semester Total Units		17	Semester Total Units		17		

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Year 4	GE Area D1: U.S. History American Ideals		3	CHE 4801A Professional Development and Case Studies in Chemical and Materials Engineering Activity	Prereq: CHE 425 or CHE 4251; CHE 441 or CHE 4450; and CHE 451L or CHE 4450L.	1	
	MTE 4010 Corrosion And Materials Degradation	Prereq: ME 302, ME 3121, CHE 303, or CHE 3031; and MTE 207, MTE 2070, ME 315, or ME 3150.	2	CHE 4260 Process Controls	Prereq: CHE 311 or CHE 3111, and CHE 304 or CHE 3040.	2	
	MTE 4010L Corrosion And Materials Degradation Laboratory	Prereq: CHE 3031, ME 3121, CHE 303 or ME 302; and MTE 2070, ME 3150, MTE 207 or ME 315.	1	CHE 4361L Unit Operation and Process Control Laboratory	Prereq: CHE 425 or CHE 4251.	1	
	CHE 4251 Unit Operations and Pollution Abatement	Prereq: CHE 312 or CHE 3121, and CHE 304 or CHE 3040.	2	CHE 4451 Chemical Process Synthesis and Design II	Prereq: CHE 441 or CHE 4450, and CHE 451L or CHE 4450L.	3	
	CHE 4450 Chemical Process Synthesis and Design I	Prereq: CHE 304 or CHE 3040; CHE 312 or CHE 3121; and IME 402 or IME 4020.	3	CHE 4451L Chemical Process Synthesis and Design II Laboratory	Prereq: CHE 441 or CHE 4450, and CHE 451L or CHE 4450L.	1	
	CHE 4450L Chemical Process Synthesis and Design I Laboratory	Prereq: CHE 304 or CHE 3040, and CHE 312 or CHE 3121.	1	Major Elective	Select from Curriculum Sheet	3	
	C2b Literature and Language Other than English (C2b)		3	GE Area D4: Social Science Synthesis		3	
			0			0	
<i>File an application to graduate</i>							
Semester Total Units			15	Semester Total Units		14	
Total Units						127	