

BACHELOR OF SCIENCE IN CHEMISTRY - POLYMERS AND MATERIALS OPTION

Code	Title	Credit Hours
Wellness		
APPH 1040	Scientific Foundations of Health	2
	or APPH 10 The Science of Physical Activity and Health	
	or APPH 10 Flourishing: Strategies for Well-being and Resilience	
Core A - Essential Skills		
ENGL 1101	English Composition I	3
ENGL 1102	English Composition II	3
MATH 1552	Integral Calculus	4
Core B - Institutional Options		
CS 1301	Introduction to Computing ⁷	3
Core C - Humanities		
Any HUM		6
Core D - Science, Math, & Technology		
PHYS 2211	Introductory Physics I	4
PHYS 2212	Introductory Physics II	4
MATH 1551	Differential Calculus	2
MATH 1553	Introduction to Linear Algebra ⁴	2
Core E - Social Sciences		
Select one of the following:		3
HIST 2111	The United States to 1877	
HIST 2112	The United States since 1877	
INTA 1200	American Government in Comparative Perspective	
POL 1101	Government of the United States	
PUBP 3000	American Constitutional Issues	
Any SS		9
Core F - Courses Related to Major		
CHEM 1211K	Chemical Principles I	4
CHEM 1212K	Chemical Principles II	4
CHEM 2380	Synthesis Laboratory I	2
MATH 2551	Multivariable Calculus	4
BIOS 1107	Biological Principles	4
& 1107L	and Biological Principles Laboratory	
Major Requirements		
CHEM 2601	Professional Skills for Chemists and Biochemists	1
CHEM 2216	Quantitative Chemical Analysis	4
& 2216L	and Quantitative Chemical Analysis Laboratory	
	or CHEM 22 Quantitative Chemical Analysis	
CHEM 2311	Organic Chemistry I	3
CHEM 2312	Organic Chemistry II	3
	or CHEM 23 Organic and Biorganic Chemistry	
CHEM 3111	Inorganic Chemistry	3
CHEM 3216	Analytical Chemistry Lecture	5
& 3216L	and Analytical Chemistry Laboratory	

	or CHEM 32 Analytical Chemistry	
CHEM 3380	Synthesis Laboratory II	3
CHEM 3411	Physical Chemistry I	3
CHEM 3412	Physical Chemistry II	3
CHEM 3481	Physical Chemistry Laboratory I	2

Additional Major Requirements

Research Experience		2
	CHEM 4695 Undergraduate Internship (Undergraduate Internship for Academic Credit)	
	CHEM 4699 Undergraduate Research ⁵	
CHEM 3511	Survey of Biochemistry	3
	or CHEM 45 Biochemistry I	
	or CHEM 45 Biochemistry II	

Polymers and Materials Courses 12-13

MSE 2001	Principles and Applications of Engineering Materials	
CHEM/	Polymer Science and Engineering I: Formation and Properties	
MSE 4775		

Select Polymers Interest or Inorganic Materials Interest:

Polymers interest (select 6 credits):		
MSE 4025	Fiber Product Manufacturing	
MSE 4335	Soft Nano and Bio Materials	
MSE 4751	Introduction to Biomaterials	
MSE 4793	Composite Materials and Processing	
CHEM/	Preparation and Reaction of Polymers	
MSE 6750		
CHEM/	Physical Chemistry of Polymer Solutions	
MSE 6751		
CHEM/	Polymer Characterization	
MSE 6752		

Materials interest:

MSE 2021	Materials Characterization	
Materials Interest select one additional course:		
MSE 3015	Electrical, Optical, and Magnetic Properties	
MSE 4010	Environmental Degradation	
MSE 4325	Thin Film Materials Science	
MSE 4330	Fundamentals of Nanomaterials and Nanostructures	

Free Electives

Free Electives ^{2,3,6}		11-12
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Total Credit Hours 122

Pass-fail only allowed for Free Electives.

² Courses may be applied toward completion of a minor.

³ VIP courses may be used only as free electives or in place of CHEM 4699 with pre-approval of the Associate Chair for Academic Programs or their designate

⁴ MATH 1554 or MATH 1564 may be used in place of MATH 1553.

⁵ A maximum of twelve credit hours of CHEM 4699 taken on a letter-grade basis are permitted for the degree program

⁶ Up to six hours of CHEM 2699 taken on a letter-grade basis may be used as free electives

⁷ CS 1371 may be used with approval of the Associate Chair for Academic Programs or their designate