

Concord University
Bachelor of Science - Chemistry
 Registrar's Office Official Document

Name: _____

120 hours minimum for graduation with a 2.00 average overall
 56 hours from a four-year institution

Course	Title	CR	GR	QP
Written and Oral Communications (9 credit hours) Select one course from BGEN 205 or COMM 101				
ENGL 101	Composition & Rhetoric I	3		
ENGL 102	Composition & Rhetoric II	3		
BGEN 205 Or COMM 101	Fundamentals of Business Communication Or Fundamentals of Speech	3		
Literature and Humanities (6 credit hours) Select one (1) course from Literature and one (1) course from History and Philosophy. *May be repeated for 3 credit hours.				
	ENGL 203 or 204	3		
	HIST 101, 102, 203, 204, PHIL 101, 308, 316, or 361	3		
Fine Arts-- (3 credit hours) Select one (1) course from the following:				
	ART 101, 103, 105, 106, 204, 205, 216, 303, 304, 308, MUS 101, *451, *453A, or THEA 102	3		
Social and Behavioral Sciences (9 credit hours) Select one (1) course from three different categories.				
	Category 1 - Business and Professional Studies BGEN 105, ECON 203, ECON 204, FIN 200, HSP 100 or SOWK 161	3		
	Category 2 - Geography GEOG 101 or 221	3		
	Category 3 - Political Science POSC 101, 104, or 202	3		
	Category 4 - Psychology PSY 101 or 200			
	Category 5 - Sociology SOC 101, 201, or 301			
Natural Sciences (7-8 credit hours) Select one (1) course from two different categories.				
CHEM 101/111	Category 1-Biological Science BIOL 101, 102, 121, or 122	4		See Major
PHYS 101 or 201	Category 2-Earth & Space Science GEOL 101, GEOL 140 or 150, GEOG 200, PHSC 104, or PHYS 105	4		See Major
	Category 3-Physical Science CHEM 100, CHEM 101/111, PHSC 103, PHYS 101, or PHYS 201			
Mathematics (3 credit hours) Select one (1) Mathematics course numbered 100 or higher.				
MATH 103		3		See Major
Physical Wellness (2 credit hours) Select one or more courses listed below for a total of at least two hours.				
	H ED 120, 304, P ED 101M, 117 or 118	2-3		
Modern/Classical Language -- (Optional 6 credit hours) Select two courses within the same Modern/Classical Language for substitution purposes.				
	May not substitute Modern Language for ENGL 101, ENGL 102, the 3 hour Mathematics requirement or the 4-hour lab science requirement.			

Chemistry Core Curriculum (2.00 GPA required) 53-64 credit hours				
Introductory Course Work (8 credit hours)				
CHEM 101	General Chemistry I	3		
CHEM 111	General Chemistry Lab I	1		
CHEM 102	General Chemistry II	3		
CHEM 112	General Chemistry Lab II	1		
Foundational Course Work (18-19 credit hours)				
CHEM 210	Chemical Laboratory Safety	1		
PHSC 219	Laboratory Research Methods and Ethics	1		
CHEM 331	Organic Chemistry I	4		
CHEM 341	Biochemistry I	3		
CHEM 347	Biochemistry Lab	1		
CHEM 351	Analytical Chemistry	3		
CHEM 357	Analytical Chemistry Lab	2		
	<i>Add one of the following Chemistry Foundational Electives (3-4 Credit hours)</i> <ul style="list-style-type: none"> • CHEM 352 Instrumental Analysis (3) and CHEM 358 Instrumental Analysis Laboratory (1) • CHEM 401 Physical Chemistry Thermodynamics (3) and CHEM 407 Physical Chemistry Laboratory (1) • CHEM 402 Physical Chemistry – Quantum Mechanics (3) • CHEM 413 Inorganic Chemistry (3) and CHEM 417 Inorganic Chemistry Laboratory (1) 		3-4	
Cognate Science and Mathematics (15-21 credit hours)				
MATH 103/103C and MATH 104 or MATH 107	College Algebra** and College Trigonometry or Precalculus		4-6	
MATH 253	Calculus w/Analytic Geometry I	4		
	<i>Three or more credit hours of mathematics and/or computer science selected from MATH 105 or higher and/or CS 151 or higher (MATH 254 recommended)</i>		3	
Select one of the following 2-course physics sequences:				
PHYS 101 and PHYS 102 or PHYS 201 and PHYS 202	Introductory to Physics and Intermediate Physics or University Physics w/ Calculus I and University Physics w/ Calculus II		4	
			4	

Students must select ONE of the concentrations on the following page.

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BIOCHEMISTRY				
12-16 credit hours electives				
<i>Students completing PHYS 201 and 202 require 12 rather than 16 hours of electives.+</i>				
	<ul style="list-style-type: none"> • CHEM 302 or BIOL 302 Cell and Molecular Biology (4) 			
	<ul style="list-style-type: none"> • BIOL 329 Microbiology (4) 			
	<ul style="list-style-type: none"> • BIOL 401 Genetics (4) • BIOL 419 Immunology (4) 			
	<ul style="list-style-type: none"> • CHEM 470 Independent Laboratory Research (2-6) 			
	<ul style="list-style-type: none"> • CHEM 471 Independent Laboratory Research (2-6) 			
	<ul style="list-style-type: none"> • CHEM Course(s) 300 Level or higher (no more than eight credit hours) 			
	<ul style="list-style-type: none"> • PHYS Course(s) 300 Level or higher (no more than six credit hours) 			

GEOCHEMISTRY				
12-16 credit hours electives				
<i>Students completing PHYS 201 and 202 require 12 rather than 16 hours of electives.+</i>				
	<ul style="list-style-type: none"> • GEOL 205 Environmental and Applied Geology (4) 			
	<ul style="list-style-type: none"> • GEOL 365 Earth Materials and Minerals (4) 			
	<ul style="list-style-type: none"> • GEOL 375 Chemistry and Petrology of the Solid Earth (4) 			
	<ul style="list-style-type: none"> • GEOL or CHEM 470 Independent Laboratory Research (2-6) 			
	<ul style="list-style-type: none"> • GEOL or CHEM 471 Independent Laboratory Research (2-6) 			
	<ul style="list-style-type: none"> • GEOL course(s) 380 level or higher (no more than six credit hours) 			
	<ul style="list-style-type: none"> • CHEM course(s) 300 or higher (no more than four credit hours) 			

PROFESSIONAL CHEMISTRY				
12-16 credit hours electives				
<i>Students completing PHYS 201 and 202 require 12 rather than 16 hours of electives.+</i>				
	<ul style="list-style-type: none"> • CHEM 302 or BIOL 302 Cell and Molecular Biology (4) 			
	<ul style="list-style-type: none"> • CHEM 470 Independent Laboratory Research (2-6) 			
	<ul style="list-style-type: none"> • CHEM 471 Independent Laboratory Research (2-6) 			
	<ul style="list-style-type: none"> • CHEM course(s) 300 level or higher 			
	<ul style="list-style-type: none"> • PHYS course(s) 300 level or higher 			

3 + 1 HEALTH SCIENCES (PRE-PHARMACY)				
(All of the following)*				
BIOL 329	Microbiology	4		
CHEM 332	Organic Chemistry II	4		
CHEM 460 or MDTH 460	Pharmacy Practicum or Medical Technology Practicum	15		
	<i>(30 hours from an approved School of Pharmacy or school of Clinical Laboratory Science)</i>	15		

*PHYS 102 or 202 (4 credit hours), and the Chemistry Foundational Elective course (3-4 credit hours) is not required for 3+1 Health Sciences. However, students who do not obtain admission to an approved school of pharmacy or medical technology will have to take these hours and pursue a different elective concentration during their senior year.

**MATH 103 and MATH 104, or MATH 107 will be waived for those students establishing "equivalent proficiency" as defined by the Department of Mathematics (ACT Math Score 25 or 28).

+One 4-hour course from elective concentrations 1, 2, or 3 may be waived for students completing PHYS 201 - PHYS 202.

RESIDENCE CREDIT:

36 hours at Concord

16 of last 32 hours at Concord

Note: In some degree programs, this is prior to entering professional training.

9 hours in Major, Teaching Fields

TOTAL MINIMUM REQUIRED CREDITS: 120

GENERAL EDUCATION CREDITS: 40-41

PROGRAM REQUIREMENTS: 49-63

ELECTIVE CREDITS: 16-31