

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

Name: \_\_\_\_\_

2021-2022 Catalog

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.				
	<b>ENGL</b> 203 or 204	3		
	<b>HIST</b> 101, 102, 203, 204, <b>PHIL</b> 101, 308, 316, or 361	3		
Fine Arts– (3 credit hours) Select one (1) course from the following:				
	<b>ART</b> 101, 103, 105, 106, 204, 205, 216, 303, 304, 308, <b>MUS</b> 101, *451, *453A, or <b>THEA</b> 102	3		
Social and Behavioral Sciences (9 credit hours) Select one (1) course from three different categories.				
	<b>Category 1 - Business and Professional Studies</b>	3		
	BGEN 105, ECON 203, ECON 204, FIN 200, HSP 100 or SOWK 161	3		
	<b>Category 2 - Geography</b>	3		
	GEOG 101 or 321	3		
	<b>Category 3 - Political Science</b>			
	POSC 101, 104, or 202			
	<b>Category 4 - Psychology</b>			
	PSY 101 or 200			
	<b>Category 5 – Sociology</b>			
	SOC 101, 201, or 301			
Natural Sciences (7-8 credit hours) Select one (1) course from two different categories.				
CHEM 101/111	<b>Category 1-Biological Science</b> BIOL 101, 102, 121, or 122	4	See Major	
	<b>Category 2-Earth &amp; Space Science</b> GEOL 101, GEOL 140 or 150, GEOG 200, PHSC 104, or PHYS 105	3- 4		
	<b>Category 3-Physical Science</b> 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.				
	<b>H ED</b> 120, 304, <b>P ED</b> 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				
<b>Introductory Course Work (8 credit hours)</b>				
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		
<b>Foundational Course Work (18-19 credit hours)</b>				
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"> <li>• CHEM 352 Instrumental Analysis (3) and CHEM 358 Instrumental Analysis (1)</li> <li>• CHEM 401 Physical Chemistry - Thermodynamics (3) and CHEM 407 Physical Chemistry Laboratory (1)</li> <li>• CHEM 402 Physical Chemistry – Quantum Mechanics (3)</li> <li>• CHEM 413 Inorganic Chemistry (3) and CHEM 417 Inorganic Chemistry Laboratory (1)</li> </ul>	3-4		
<b>Cognate Science and Mathematics (15-21 credit hours)</b>				
MATH 103 (MATH 103C)	College Algebra**	3		
MATH 104	College Trigonometry**	3		
MATH 253	Calculus w/Analytic Geometry I	4		
	<i>Four or more credit hours of mathematics and/or computer science selected from MATH 105 or higher and/or CS 151 or higher</i>	4		
<b>Select one of the following 2-course physics sequences:</b>				
PHYS 101 and PHYS 102 or PHYS 201 and PHYS 202	Introductory to Physics and Intermediate Physics or University Physics w/ Calculus 1 and University Physics w/ Calculus 2	4		
		4		

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

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

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  <i>(30 hours from an approved School of Pharmacy or school of Clinical Laboratory Science)</i>	15  15		

\*CHEM 335, Introduction to Inorganic and Physical Chemistry, 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 this course and pursue a different elective concentration during their senior year.

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

**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: 39-41**

**ELECTIVE CREDITS: 21-28**

PROFESSIONAL CHEMISTRY				
12-16 credit hours electives				
	<ul style="list-style-type: none"> <li>• CHEM 302 or BIOL 302 Cell and Molecular Biology (4)</li> </ul>			
	<ul style="list-style-type: none"> <li>• CHEM 470 Independent Laboratory Research (2)</li> </ul>			
	<ul style="list-style-type: none"> <li>• CHEM 471 Independent Laboratory Research (6)</li> </ul>			
	<ul style="list-style-type: none"> <li>• CHEM course(s) 300 level or higher</li> </ul>			
	<ul style="list-style-type: none"> <li>• PHYS course(s) 300 level or higher</li> </ul>			

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