

Cleveland State University
College of Arts and Sciences
Bachelor of Science in Chemistry
(American Chemical Society Certified Track)

First Year

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
ASC 101 Intro to University Life	1		Intro	ENG 102 College Writing II	3		W/C
ENG 101 College Writing I	3		W/C	MTH 182 Calculus II	4	X	M/QL
MTH 181 Calculus I	4	X	M/QL	CHM 262/267 General Chemistry w/ Lab	4	X	NS
CHM 261/262 General Chemistry w/ Lab	4	X	NS	Arts & Humanities Elective**	3		A&H
Social Science Elective**	3		SS				
<i>Semester Total</i>	15			<i>Semester Total</i>	14		

Second Year

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
CHM 331/336 Organic Chemistry I/Lab	4	X		CHM 332/337 Organic Chemistry II/Lab	4	X	
MTH 281 Multivariable Calculus	4	X		PHY 242 University Physics II (or PHY 244)	5	X	NS
PHY 241 University Physics I (or PHY 243)	5	X	NS	CHM 301 Research Methods in Chemistry	2	X	WAC
General Elective*	3			Social Diversity Elective (US)	3		DIV-US
<i>Semester Total</i>	16			<i>Semester Total</i>	14		

Third Year

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
CHM 321 Physical Chemistry I	3	X		CHM 322 Physical Chemistry II	3	X	
CHM 311 Analytical Chemistry	3	X		CHM 412 Advanced Instrumental Analysis	3	X	
CHM 316 Analytical Chemistry Lab	2	X		CHM 416 Instrumental Analysis Lab	3	X	WAC
CHM 411 Instrumental Analysis	3	X		CHM 431 Advanced Organic Chemistry	2	X	
CHM 426 Physical Chemistry Lab I	3	X	WAC	CHM 427 Physical Chemistry Lab II	3	X	
				CHM Elective (300/400 level)	3	X	
<i>Semester Total</i>	14			<i>Semester Total</i>	17		

Fourth Year

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
CHM 402 Biochemistry I	3	X		CHM 403 Biochemistry II	3	X	
CHM 441 Inorganic Chemistry	3	X		CHM 446 Inorganic Chemistry Lab	2	X	
CHM 471 Faculty Colloquium	1	X		CHM 472 Student Colloquium	1	X	CAP
CHM Elective (300/400 level)	3	X		CHM 489 Senior Research	3	X	CAP
General Elective*	2			Social Diversity Elective (AA)	3		DIV-AA
Arts & Humanities Elective**	3		A&H	Social Science Elective**	3		SS
Apply for Spring graduation by the middle of this term							
<i>Semester Total</i>	15			<i>Semester Total</i>	15		
Credit Total: 120 (minimum 120 required for degree)							

The plan above is a suggested guide to ensure that all General Education, College, University, and Major requirements are met within 4 years of study. Students may deviate from the suggested placement of Gen Ed courses, although the M/QL and W/C requirements should be completed during the first year of study. This plan assumes college-level readiness in both mathematics and English and that Foreign Language Deficiency requirements have been met.

Gen Ed Key:	
INTRO = Introduction to University Life Requirement (one course)	SS = Social Sciences Requirement (2 courses from different departments**)
W/C = Writing/Composition Requirement (2 courses; C or better required)	A&H = Arts & Humanities Requirement (2 courses from different departments**)
M/QL = Mathematics/Quantitative Literacy Requirement (2 courses)	DIV = Social Diversity Requirement (one US Diversity & one African American Exp.)
NS = Natural Science (2 courses, one of which must have a lab)	WAC/SPAC = Writing/Speaking Across the Curriculum (3 courses, one in major)
	CAP = Capstone Requirement

* General Electives ensure that a student accumulates the minimum 120 required credit hours for graduation. Of these 120 credit hours, a minimum of 36 credit hours must be upper division (300 or 400-level courses).

** Of the SS and A&H courses, one must be focused on Africa, Latin America, Asia, or the Middle East

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Cleveland State University
College of Arts and Sciences
Bachelor of Science in Chemistry
(Pre-ProfessionalTrack)

First Year

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
ASC 101 Intro to University Life	1		Intro	ENG 102 College Writing II	3		W/C
ENG 101 College Writing I	3		W/C	MTH 181 Calculus I	4	X	M/QL
STA 147 Statistics	3	X	M/QL	CHM 262/267 General Chemistry w/ Lab	4	X	NS
CHM 261/262 General Chemistry w/ Lab	4	X	NS	BIO 202/203 Introductory Biology II/Lab	4	X	NS
BIO 200/201 Introductory Biology I/Lab	4	X	NS				
<i>Semester Total</i>	15			<i>Semester Total</i>	15		

Second Year

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
CHM 331/336 Organic Chemistry I/Lab	4	X		CHM 332/337 Organic Chemistry II/Lab	4	X	
PHY 221 College Physics I	5	X		PHY 222 College Physics II	5	X	
Arts & Humanities Elective**	3	X	A&H	CHM 301 Research Methods in Chemistry	2	X	WAC
General Elective*	3			Social Science Elective**	3		SS
<i>Semester Total</i>	15			<i>Semester Total</i>	14		

Third Year

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
CHM 310 Survey Analytical Chemistry	2	X		BIO 310/311 Genetics & Recitation	4	X	
CHM 315 Survey Analytical Chemistry Lab	2	X		CHM 320 Survey of Physical Chemistry	3	X	
CHM 402 Biochemistry I	3	X		CHM 403 Biochemistry II	3	X	
BIO 308/309 Cell Biology/Lab	4	X		Social Science Elective**	3		SS
Arts & Humanities Elective **	3		A&H	General Elective (WAC)*	3		WAC
<i>Semester Total</i>	14			<i>Semester Total</i>	16		

Fourth Year

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
CHM 471 Faculty Colloquium	1	X		CHM 472 Student Colloquium	1	X	CAP
BIO 416/417 Microbiology/Lab	5	X		CHM/BIO Elective (300/400 level)	3	X	
CHM/BIO Elective (300/400 level)	3	X		CHM/BIO Elective (300/400 level)	3	X	
BIO 302/303 Animal Biology/Lab	4	X		Social Diversity Elective (US)	3		DIV-US
CHM/BIO Elective (300/400 level)	3	X		Writing Across the Curriculum Elective	3		WAC
				Social Diversity Elective (AA)	3		DIV-AA
Apply for Spring graduation by the middle of this term							
<i>Semester Total</i>	16			<i>Semester Total</i>	16		
Credit Total: 121 (minimum 120 required for degree)							

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Cleveland State University
College of Arts and Sciences
Bachelor of Science in Chemistry

(Pre-Professional Track with Concentration in Pharmaceutical Science)

First Year

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
ASC 101 Intro to University Life	1		Intro	ENG 102 College Writing II	3		W/C
ENG 101 College Writing I	3		W/C	MTH 181 Calculus I	4	X	M/QL
STA 147 Statistics	3	X	M/QL	CHM 262/267 General Chemistry w/ Lab	4	X	NS
CHM 261/262 General Chemistry w/ Lab	4	X	NS	BIO 202/203 Introductory Biology II/Lab	4	X	NS
BIO 200/201 Introductory Biology I/Lab	4	X	NS				
<i>Semester Total</i>	15			<i>Semester Total</i>	15		

Second Year

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
CHM 331/336 Organic Chemistry I/Lab	4	X		CHM 332/337 Organic Chemistry II/Lab	4	X	
PHY 221 College Physics I	5	X		PHY 222 College Physics II	5	X	
Arts & Humanities Elective**	3	X	A&H	General Elective (WAC)*	3		WAC
Social Diversity Elective (US)	3		DIV-US	Social Science Elective**	3		SS
<i>Semester Total</i>	15			<i>Semester Total</i>	15		

Third Year

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
CHM 341 Pharmacology I	3	X		CHM 342 Pharmacology II	3	X	
CHM 351 Medicinal Chemistry I	3	X		CHM 352 Medicinal Chemistry II	3	X	
CHM 310 Survey Analytical Chemistry	2	X		BIO 310/311 Genetics and Recitation	4	X	
CHM 315 Survey Analytical Chemistry Lab	2	X		CHM 403 Biochemistry II	3	X	
CHM 402 Biochemistry I	3	X					
Social Science Elective**	3		SS				
<i>Semester Total</i>	16			<i>Semester Total</i>	13		

Fourth Year

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
BIO 416/417 Microbiology/Lab	5	X		CHM 471 Faculty Colloquium	1	X	
CHM 455 Biotechnology Techniques	3	X		CHM 472 Student Colloquium	1	X	CAP
CHM 457 Pharmaceutical Analysis Lab	3	X	CAP	CHM/BIO Elective (300/400 level)^	3	X	
CHM/BIO Elective (300/400 level)^	3	X		CHM/BIO Elective (300/400 level)^	3	X	
General Elective (WAC)*	3		WAC	Social Diversity Elective (AA)	3		DIV-AA
				Arts & Humanities Elective**	3		A&H
Apply for Spring graduation by the middle of this term							
<i>Semester Total</i>	17			<i>Semester Total</i>	14		
Credit Total: 120 (minimum 120 required for degree)							

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^One of the CHM/BIO 300/400 level electives MUST also be an approved WAC course in order to satisfy the WAC-in-major requirement.

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Cleveland State University
College of Arts and Sciences
 Bachelor of Science in Chemistry
 CSUteach (license in Education)

First Year										
Fall Semester	Credits	Major	License	Gen Ed	Spring Semester	Credits	Major	License	Gen Ed	
ASC 101: Intro to University Life	1			Intro						
ENG 101: College Writing I	3			W/C	ENG 102: College Writing II	3			W/C	
CHM 261/266: General Chemistry I + Lab	4	x		NS	CHM 262/267: General Chemistry II + Lab	4	x		NS	
PSY 221: Adolescent Psychology	3		x	SS	BIO 200/201: Introductory Biology I + Lab	4	x		NS	
MTH 181: Calculus I	4	x		M/QL	MTH 182: Calculus II	4	x		M/QL	
<i>Semester Total</i>	15				<i>Semester Total</i>	15				

Second Year										
Fall Semester	Credits	Major	License	Gen Ed	Spring Semester	Credits	Major	License	Gen Ed	
EUT 201: Step 1: Inquiry Approaches to Teaching	1		x		EDB 242: Introduction to Education	3		x	DIV	
CHM 331/336: Organic Chemistry I + Lab	4	x			CHM 332/337: Organic Chemistry II + Lab	4	x			
BIO 202/203: Introductory Biology II + Lab	4	x		NS	BIO 304/305: Population Biology & Ecology + Lab	4	x			
EVS 206: Intro to Environmental Science	3	x		NS	STA 147: Statistical Concepts & App	3	x		M/QL	
Arts & Humanities Elective (**ALAAME)	3			A&H	EDC 200: Div in Edu Settings	3		x	DIV	
African American Experience Elective	3			DIV						
<i>Semester Total</i>	18				<i>Semester Total</i>	17				

Third Year										
Fall Semester	Credits	Major	License	Gen Ed	Spring Semester	Credits	Major	License	Gen Ed	
EDB 302: Psychological Foundations of Education	3		x	WAC	EUT 305: Classroom Interactions	3		x		
CHM 310/315: Survey of Analytical Chem + lab	4	x			PHY 201: Astronomy: Stars & Galaxies	3	x		NS	
PHY 221: College Physics I	5	x		NS	PHY 222: College Physics II	5	x		NS	
GEO 100/101: Intro to Geology + Lab	4	x		NS	ESE 400: Introduction to Education	3		x	WAC	
CHM 404: Environmental Chemistry	3	x			Social Science Elective (**ALAAME)	3	x		SS	
<i>Semester Total</i>	19				<i>Semester Total</i>	17				

Fourth Year										
Fall Semester	Credits	Major	License	Gen Ed	Spring Semester	Credits	Major	License	Gen Ed	
EUT 417: Project Based Instruction in Science	3		x		EST 499: CSUteach STEM Apprentice Teaching II	6		x		
EST 399: CSUteach STEM Apprentice Teaching I	1		x		EUT 210: Perspectives on Science & Math	3		x	A&H/WAC	
EUT 311: Research Methods	3		x	WAC	EDL 305: Content Area Literacy	3		x		
CHM 402: Biochemistry	3	x								
PHY 470: Environmental Physics	3	x								
CHM 320: Survey of Physical Chemistry	3	x								
CHM 472: Student Colloquium	1	x		CAP/WAC						
Apply for Spring graduation by the middle of this term										
<i>Semester Total</i>	17				<i>Semester Total</i>	12				
Degree Total: 130										

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