

Cleveland State University
College of Arts and Sciences
Bachelor of Science in Pharmaceutical Sciences
(Medicinal and Biological Chemistry 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	4	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>	16			<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	
BIO 266/267 Anatomy & Physiology I/Lab	4	X		PHY 222 College Physics II	5	X	
PHY 221 College Physics I	5	X		BIO 268/269 Anatomy & Physiology II/Lab	4	X	
General Elective*	1			Arts & Humanities Elective**	3	X	A&H
<i>Semester Total</i>	14			<i>Semester Total</i>	16		

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		General Elective* (WAC)	3		WAC
Social Diversity Elective (US)	3		DIV-US				
<i>Semester Total</i>	16			<i>Semester Total</i>	16		

Fourth Year

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
CHM Elective 300/400 Level (WAC)	3	X	WAC	CHM/BIO Elective 300/400 Level	3	X	
CHM 455 Biotechnology Techniques	3	X		Social Science Elective**	3		SS
CHM 457 Pharmaceutical Analysis Lab	3	X	CAP	Arts & Humanities Elective**	3		A&H
Social Science Elective**	3		SS	General Elective* (WAC)	3		WAC
Social Diversity Elective (AA)	3		DIV-AA				
Apply for Spring graduation by the middle of this term							
<i>Semester Total</i>	15			<i>Semester Total</i>	12		
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, or the Middle East

^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.

This information is provided solely for the convenience of the reader, and the University expressly disclaims any liability which may otherwise be incurred. This publication is neither a contract nor an offer to make a contract. While every effort has been made to ensure the accuracy of the information, the University reserves the right to make changes at any time with respect to course offerings, degree requirements, services provided, or any other subject addressed herein.

Cleveland State University
College of Arts and Sciences
Bachelor of Science in Pharmaceutical Sciences
(Pharmaceutical Chemistry and Analysis 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	4	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>	16			<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	
BIO 266/267 Anatomy & Physiology I/Lab	4	X		PHY 222 College Physics II	5	X	
PHY 221 College Physics I	5	X		BIO 268/269 Anatomy & Physiology II/Lab	4	X	
Social Science Elective**	3		SS	Arts & Humanities Elective**	3	X	A&H
<i>Semester Total</i>	16			<i>Semester Total</i>	16		

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 402 Biochemistry I	3	X		CHM 412 Advanced Instrumental Analysis	3	X	
CHM 311/316 Analytical Chemistry/Lab	5	X		CHM 416 Instrumental Analysis Lab	3	X	WAC
CHM 411 Instrumental Analysis	3	X					
<i>Semester Total</i>	17			<i>Semester Total</i>	12		

Fourth Year

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
CHM 455 Biotechnology Techniques	3	X		CHM Elective 300/400 Level	3	X	
CHM 457 Pharmaceutical Analysis Lab	3	X	CAP	CHM 403 Biochemistry	3	X	
Social Diversity Elective (US)	3		DIV-US	Arts & Humanities Elective**	3		A&H
Social Science Elective**	3		SS	Social Diversity Elective (AA)	3		DIV-AA
General Elective* (WAC)	3		WAC	General Elective* (WAC)	3		WAC
Apply for Spring graduation by the middle of this term							
<i>Semester Total</i>	15			<i>Semester Total</i>	15		
Credit Total: 122 (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, or the Middle East

^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.

This information is provided solely for the convenience of the reader, and the University expressly disclaims any liability which may otherwise be incurred. This publication is neither a contract nor an offer to make a contract. While every effort has been made to ensure the accuracy of the information, the University reserves the right to make changes at any time with respect to course offerings, degree requirements, services provided, or any other subject addressed herein.