

B.S. IN PHARMACEUTICAL PRODUCT DEVELOPMENT

College of the Sciences and Mathematics

Curriculum

General Education Requirements (<http://catalog.wcupa.edu/undergraduate/general-education-requirements>)

English Composition requirements	6
Mathematics requirement	3
MAT 121 Introduction to Statistics I (will be required and will fulfill the basic skills mathematics requirement)	
Public Speaking requirement	3
Science requirements	6
Behavioral & Social Science requirements	6
ECO 112 Principles of Economics (Micro) (must be selected as one course in the behavioral and social sciences)	
Humanities requirements	6
Arts requirement	3
Diverse Communities requirement	3
Interdisciplinary requirement	3
PHI 371 Medical Ethics (will be required and will fulfill the interdisciplinary requirement)	
Student Electives	9
Writing Emphasis requirements	9
Although these courses may be used to fulfill distributive requirements, they are required courses in the degree program.	

Chemistry Requirements

CHE 103 General Chemistry I	3
CHE 104 General Chemistry II	3
CHE 231 Organic Chemistry I	4
CHE 232 Organic Chemistry II	3
CHE 476 Biochemistry I	3
CRL 103 Experimental General Chemistry I (LAB)	1
CRL 104 Experimental General Chemistry II (LAB)	1
CRL 231 Experimental Organic Chemistry I Lab	2
CRL 232 Experimental Organic Chemistry II Lab	2

Biology Requirements

BIO 110 General Biology ¹	3
BIO 214 General Microbiology	4
BIO 220 Cell Physiology	3
BIO 230 Genetics	3
BIO 367 Physiology of Drug Interactions	3
BIO 469 Human Physiology	4
BIO 333 Molecular Biology Techniques	2

Major Requirements

PPD 481 Drug Design I	3
PPD 482 Drug Design II	3
PPD 483 Drug Design III	3
PPD 484 Pharmaceutical Internship I	1

Related/Cognate Requirements

ENG 371/375 Technical Writing	3
MAT 143/161 Brief Calculus	3
PHY 130 General Physics I ¹	4
PHY 140 General Physics II	4
SPK 230 Business and Professional Speech Communication ¹	3
STA 311 Intro Statistical Computing and Data Management	3

Major Electives

Courses are to be chosen from the following list in consultation with an adviser.		7
BIO 217	General Zoology	
BIO 307	Pathophysiology	
BIO 314	Pathogenic Microbiology	
BIO 334	Microbial Genetics	
BIO 357	Comparative Vertebrate Anatomy	
BIO 421	Cellular and Molecular Biology	
BIO 428	Animal Histology	
BIO 431	Molecular Genetics	
BIO 454	Mycology	
BIO 456	Virology	
BIO 464	Microbial Physiology	
BIO 465	Immunology	
BIO 467	Endocrinology	
BIO 484	Epidemiology	
BLA 201	Legal Environment of Business	
CHE 321	Analytical Chemistry I	
CHE 333	Advanced Organic Chemistry	
CHE 403	Chemistry of the Environment	
CHE 424	Advanced Analytical Chemistry	
CHE 436	Polymer Chemistry	
CHE 477	Biochemistry II	
CHE 479	Chemical Toxicology	
CRL 321	Analytical Chemistry I Lab	
CRL 424	Analytical Chemistry II Lab	
CRL 436	Polymer Chemistry Lab	
CRL 476	Experimental Biochemistry I Lab	
CRL 477	Experimental Biochemistry II Lab	
MAT 122	Introduction to Statistics II	
MAT 162	Calculus II	
MAT 261	Calculus III	
MAT 319	Applied Statistics	
MAT 421	Mathematical Statistics I	
MAT 422	Mathematical Statistics II	
MKT 200	Survey of Marketing	
PPD 485	Pharmaceutical Internship II	
PPD 490	Special Topics in Drug Development	
Total Minimum Credits Required		120

¹ This course also satisfies the general education requirement.

Sample Course Plan

To track their individual degree progress, students are advised to access their Degree Progress Report (DPR) via myWCU regularly. For more information, visit wcupa.edu/DegreeProgressReport.

The following is a suggested course sequence for this program; course offerings and availability are not guaranteed. Students should consult their academic advisor with any questions.

Course	Title	Credits
Year One		
Fall		
BIO 110	General Biology	3
CHE 103	General Chemistry I	3
CRL 103	Experimental General Chemistry I (LAB)	1
MAT 121	Introduction to Statistics I	3
WRT 120	Effective Writing I	3
Credits		13

Spring		
BIO 230	Genetics	3
CHE 104	General Chemistry II	3
CRL 104	Experimental General Chemistry II (LAB)	1
WRT 2XX		3
Humanities Gen Ed		3
Free Elective		3
Credits		16
Year Two		
Fall		
BIO 214	General Microbiology	4
CHE 231	Organic Chemistry I	4
CRL 231	Experimental Organic Chemistry I Lab	2
ENG 371	Technical Writing	3
or ENG 375	or Strategies for Writing in the Workplace	
Arts Gen Ed		3
Credits		16
Spring		
BIO 333	Molecular Biology Techniques	2
BIO 220	Cell Physiology	3
CHE 232	Organic Chemistry II	3
CRL 232	Experimental Organic Chemistry II Lab	2
PPD 481	Drug Design I	3
STA 311	Intro Statistical Computing and Data Management	3
Credits		16
Summer Session II		
PPD 484	Pharmaceutical Internship I	1
Credits		1
Year Three		
Fall		
BIO 469	Human Physiology	4
MAT 161	Calculus I	4
or MAT 143	or Brief Calculus	
PHY 130	General Physics I	4
PPD 482	Drug Design II	3
Credits		15
Spring		
BIO 367	Physiology of Drug Interactions	3
PHY 140	General Physics II	4
PPD 483	Drug Design III	3
Social Science Gen Ed		3
Credits		13
Summer		
PPD 485	Pharmaceutical Internship II ¹	1
Credits		1
Year Four		
Fall		
CHE 476	Biochemistry I	3
PHI 371	Medical Ethics	3
ECO 112	Principles of Economics (Micro)	3
PPD 490	Special Topics in Drug Development ¹	1
Humanities Gen Ed		3

Free Elective		3
Credits		16
Spring		
SPK 230	Business and Professional Speech Communication	3
Diversity Gen Ed		3
PPD Elective		3
PPD Elective		3
Free Elective		3
Credits		15
Total Credits		122

¹ This course is optional.