

B.S. Pharmaceutical Product Development Pre-Pharmacy Concentration

Year 1					
Gen. Bio	BIO 110	4	Genetics	BIO 210	3
Gen. Chem I	CHE 103	3	Genetics Lab	BIO 210L	1
Gen. Chem I Lab	CRL 103	1	Gen. Chem II	CHE 104	3
Statistics	MAT 121 or MAT 125	3 or 3	Gen. Chem II Lab	CRL 104	1
First Year Experience	FYE XXX	<u>4</u>	Writing Class	WRT 120	3
			Gen Ed Humanities I		<u>3</u>
	Total	15		Total	14
Year 2					
Organic Chem I	CHE 231	4	Molecular Biology Techniques	BIO 333	2
Organic Chem I Lab	CRL 231	2	Cell Biology (W)	BIO 211	4
General Microbiology	BIO 214	4	Organic Chem II	CHE 232	3
Writing Class	WRT 200 level	3	Drug Design I	PPD 481	3
Gen Ed Art		<u>3</u>	Human Anatomy & Physiology I	BIO 259	<u>4</u>
	Total	16		Total	16
Year 3					
Human Anatomy & Physiology II	BIO 269	4	Drug Interactions	BIO 367	3
Drug Design II	PPD 482	3	Physics II	PHY 140	4
Calculus for the Life Sciences (or Brief Calculus, or Calculus I)	MAT 145, MAT 143, or MAT 161	3, 3 or 4	Drug Design III	PPD 483	3
Organic Chem II Lab	CRL 232	2	Technical Writing (W) (or Strategies for Writing (W))	ENG 371 or ENG 375	3
Physics I	PHY 130	<u>4</u>	Student Elective		<u>3</u>
	Total	16-17		Total	16
Year 4					
Biochemistry	CHE 476	3	Bus. & Prof. Speech (SE)	SPK 230	3
Economics (Gen Ed B/SS I)	ECO 112	3	Gen Ed Diversity		3
Biomedical Ethics (I)	PHI 371	3	PPD Electives		6
Gen Ed Humanities II		3	Optional Student Elective		<u>3</u>
Gen Ed B/SS II		3			
Special Topics in Drug Development (Optional)	PPD 490	<u>1</u>			
	Total	15-16		Total	12-15

Total Credits: 120

PPD Advising Sheet

1. General Education Requirements

Academic Foundations

- **First Year Experience Requirement** – FYE 100 (4 Credits)
- **English Composition Requirement** – WRT 120/WRT 123 and 200-level writing course (6 Credits)
- **Mathematics Requirement** – MAT 121/MAT 125 (3 credits)
- **Interdisciplinary Requirement** – PHI 371 (3 Credits)
- **Diverse Communities Requirement** – 3 Credits required: _____

Distributive Requirements

- A. **Science Requirement** – Fulfilled by CHE 103 and BIO 110 (6 credits)
- B. **Behavior and Social Science Requirement** – 6 Credits required: ECO 112; _____
- C. **Humanities Requirement** – 6 Credits required: _____
- D. **Arts Requirement** – 3 Credits required: _____

Additional Baccalaureate Requirements

- E. **Writing Emphasis Requirement** – 9 Credits required: BIO 211; ENG 371/375; _____
- F. **Speaking Emphasis Requirement** – 9 Credits required: SPK 230; _____; _____
- G. **Ethics Requirement** – 3 Credits required: _____

2. Pharmaceutical Product Development Major Core Courses

A. Required Courses:

General Biology	BIO 110	4	Organic Chemistry II Lab	CRL 232	2
Genetics	BIO 210	3	Biochemistry I	CHE 476	3
Genetics Lab	BIO 210L	1	Principles of Economics II (Micro)	ECO 112	3
Cell Physiology	BIO 211	4	Technical Writing <u>OR</u>	ENG 371	3
General Microbiology	BIO 214	4	Strategies for Writing in the	ENG 375	3
Human Anatomy & Physiology I	BIO 259	4	Workplace		
Human Anatomy & Physiology II	BIO 269	4	Introduction to Statistics I <u>OR</u>	MAT 121	3
Molecular Biology Techniques	BIO 333	2	Introduction to Statistics and Probability	MAT 125	3
Physiology of Drug Interactions	BIO 367	3	Brief Calculus <u>OR</u>	MAT 143	3
General Chemistry I	CHE 103	3	Calculus for the Life Sciences <u>OR</u>	MAT 145	3
General Chemistry I Lab	CRL 103	1	Calculus I	MAT 161	4
General Chemistry II	CHE 104	3	General Physics I	PHY 130	4
General Chemistry II Lab	CRL 104	1	General Physics II	PHY 140	4
Organic Chemistry I	CHE 231	4	Drug Development I	PPD 481	3
Exp. Organic Chemistry I	CRL 231	2	Drug Development II	PPD 482	3
Organic Chemistry II	CHE 232	4	Drug Development III	PPD 483	3

B. **PPD Elective Courses** – 6 Credits required: _____

Pharmaceutical Products Development Elective courses will be chosen from the following list with advisement:

BIO 217 General Zoology	3	CHE 424 Advanced Analytical Chemistry	3
BIO 310 Biostatistical Applications	3	CHE 436 Polymer Chemistry	3
BIO 314 Pathogenic Microbiology	4	CHE 477 Biochemistry II	3
BIO 334 Microbial Genetics	4	CHE 479 Chemical Toxicology	3
BIO 357 Comparative Vertebrate Anatomy	4	CHE 535 Pharmaceutical Chemistry	3
BIO 414 Applied and Industrial Microbiology	3	CRL 321 Analytical Chemistry Laboratory	2
BIO 421 Cellular and Molecular Biology	4	CRL 341 Physical Chemistry I Lab	2
BIO 428 Animal Histology	3	CRL 424 Advanced Analytical Chemistry Laboratory	2
BIO 431 Molecular Genetics	3	CRL 436 Polymer Chemistry Laboratory	2
BIO 440 Human Genetics	3	CRL 476 Experimental Biochemistry I Laboratory	2
BIO 443 Introduction to Gene Expression Methodology	3	CRL 477 Experimental Biochemistry II Laboratory	2
BIO 454 Mycology	3	ECO 111 Principles of Economics (Macro)	3
BIO 456 Virology	3	ECO 370 The Economics of Health Care	3
BIO 464 Microbial Physiology	4	HEA 377 Pharmacology	2
BIO 465 Immunology	4	MAT 162 Calculus II	4
BIO 468 Comparative Vertebrate Physiology	4	MAT 261 Calculus III	4
BIO 469 Human Physiology	4	STA 200 Introduction to Statistics II	3
BIO 484 Epidemiology	3	STA 311 Intro. Stat. Comp. Data Management	3
BLA 201 The Legal Environment of Business	3	MAT 319 Applied Statistics	3
CHE 321 Analytical Chemistry I	3	MAT 421 Mathematical Statistics I	3
CHE 333 Organic Chemistry III	3	MAT 422 Mathematical Statistics II	3
CHE 341 Physical Chemistry I	4	MKT 250 Principles of Marketing	3
CHE 342 Physical Chemistry II	3	PPD 484 Pharmaceutical Internship I	1
CHE 345 Physical Chemistry for the Life Sciences	3	PPD 485 Pharmaceutical Internship II	1
CHE 361 Forensic Chemistry I	3	PPD 490 PPD Special Topics in Drug Development	1
		PPD 535 Pharmaceutical Chemistry	3