

NAME \_\_\_\_\_ ID# \_\_\_\_\_ Date \_\_\_\_\_

## GENERAL EDUCATION REQUIREMENTS

### English Composition\*

ENGL 101 or 107 ..... 3 \_\_\_\_\_

ENGL 102 or 108 ..... 3 \_\_\_\_\_

OR

ENGL 109H ..... 3 \_\_\_\_\_

### Second Language

2<sup>nd</sup> semester proficiency\*\* ..... \_\_\_\_\_

### Mathematics

MATH 113: Elements of Calculus ..... 3 \_\_\_\_\_

MATH 122A+B, 125, or 129 may also fulfill this requirement

### Individuals & Societies (3 courses)\*\*\*

Tier One (150A, B or C) ..... 3 \_\_\_\_\_

Tier One (150A, B or C) ..... 3 \_\_\_\_\_

Tier Two Individuals & Societies ..... 3 \_\_\_\_\_

### Traditions & Cultures/Humanities (3 courses)\*\*\_

Tier One (160A, B, C or D) ..... 3 \_\_\_\_\_

Tier One (160A, B, D or D) ..... 3 \_\_\_\_\_

Tier Two Humanities ..... 3 \_\_\_\_\_

### Tier Two Art (3 units total)

\_\_\_\_\_ 3 \_\_\_\_\_

### Diversity Emphasis Course

One course required. May be double-dipped with approved Tier I or II courses \_\_\_\_\_

### Natural Sciences

Requirement satisfied by BSPS major coursework.

## BSPS FOUNDATION COURSES

### Chemistry (General & Organic, with labs)\*

CHEM 151 OR (161+163) OR (141+143) ..... 4 \_\_\_\_\_

CHEM 152 OR (162+164) OR (142+144) ..... 4 \_\_\_\_\_

CHEM (241A OR 242A) & 243A ..... 3 \_\_\_\_\_ 1 \_\_\_\_\_

CHEM (241B OR 242B) & 243B ..... 3 \_\_\_\_\_ 1 \_\_\_\_\_

### Introductory Biology, with lab\*

MCB 181R & 181L ..... 3 \_\_\_\_\_ 1 \_\_\_\_\_

### Microbiology, with lab

MIC 205A & 205L ..... 3 \_\_\_\_\_ 1 \_\_\_\_\_

### Physics, with lab

PHYS 102 & 181 ..... 3 \_\_\_\_\_ 1 \_\_\_\_\_

### Physiology

PSIO 380 ..... 4 \_\_\_\_\_

OR

PSIO 201\* ..... 4 \_\_\_\_\_

PSIO 202 ..... 4 \_\_\_\_\_

PSIO 201 + 202 option is required for PharmD admission

### Biochemistry

BIOC 384 ..... 3 \_\_\_\_\_

BIOC 385 or 462B can also fulfill this requirement

## PHARMACEUTICAL SCIENCES CORE

PCOL 305: Scientific Writing for Health Sciences ..... 3 \_\_\_\_\_

PCOL 310: Drug Approval: The 3 Billion Dollar Bet ..... 2 \_\_\_\_\_

PCOL 350: ADME: How the Body Changes Drugs ..... 3 \_\_\_\_\_

PCOL 355: Drug Delivery Systems ..... 3 \_\_\_\_\_

PCOL 390: Biomarkers: Analysis of Drug Effect/Tox... 3 \_\_\_\_\_

PCOL 406: Comprehensive Human Pharmacology ..... 5 \_\_\_\_\_

PCOL 410: Integrated Medicinal Chemistry ..... 5 \_\_\_\_\_

PCOL 440: Rigor & Reproducibility ..... 2 \_\_\_\_\_

PCOL 473: Pharmacogenomics ..... 3 \_\_\_\_\_

PHCL 460: Designing Drugs: From Chemistry to Cure.. 3 \_\_\_\_\_

### UNIVERSITY REQUIREMENTS:

2.00+ cumulative GPA \_\_\_\_\_ 2.00+ major GPA \_\_\_\_\_

120 total units \_\_\_\_\_ 42 upper division units \_\_\_\_\_

\*Required courses for the BSPS do not add up to 120/42 units. All students need some upper division and general electives.

MCWA complete \_\_\_\_\_ Final 18 of 30 units complete \_\_\_\_\_

30+ total UA units \_\_\_\_\_ 18+ PCOL units at UA \_\_\_\_\_

### ADDITIONAL REQUIREMENTS FOR MEDICAL AND PHARMACY SCHOOL

Most medical and pharmacy schools require the following additional courses, but individual schools may have even more requirements. Check each school of interest for details.

Pre-Med students should add the following courses to their BSPS plan:

PHYS 103&182 \_\_\_\_\_ PSY 150A1 (as a Tier I INDV) \_\_\_\_\_

Stats (MATH 263) \_\_\_\_\_ Biology II (ECOL 182R+182L) \_\_\_\_\_

UA Pre-PharmD students must add the following courses to the BSPS plan:

Statistics \_\_\_\_\_ PSIO 201 + 202 in lieu of PSIO 380 \_\_\_\_\_

\*MATH, CHEM, MCB, and PSIO courses must be completed with minimum C average in order to gain Advanced Standing in the major. Other major requirements apply. Several major courses require Advanced Standing.

\*\*Language proficiency may be fulfilled by successfully completing a course at the 2nd semester level or higher, or by placing into 3rd semester or higher on a proctored placement exam.

\*\*\*Honors students may choose to take two Tier II INDV and one Tier I INDV, and/or two Tier II HUMS + one Tier I TRAD in lieu of the options outlined above. The same number of courses are required for honors and non-honors students, but honors students may place more emphasis on Tier II courses.

# Bachelor of Science in Pharmaceutical Sciences

Degree Requirements: Catalog Year 2020-2021

## Sample Four-Year Plan: Version 1A

Recommended for students with math placement of MATH 113 or higher

### SEMESTER 1

MATH 113: <i>Elements of Calculus*</i>	3
CHEM 151: <i>General Chemistry*</i>	4
ENGL 101: <i>English Composition I</i>	3
Second Language – 1 <sup>st</sup> -semester level	4
PCOL 196D: <i>Intro to Pharmaceutical Sciences~</i>	1
	<b>15</b>

### SEMESTER 2

CHEM 152: <i>General Chemistry II*</i>	4
ENGL 102: <i>English Composition II*</i>	3
Second Language – 2 <sup>nd</sup> -semester level	4
Tier I General Education Course**	3
Tier I General Education Course**	3
	<b>17</b>

### SEMESTER 3

CHEM 241A+243A: <i>Organic Chemistry I + lab*</i>	4
MCB 181R +181L: <i>Introductory Biology I + lab*</i>	4
PCOL 310: <i>Drug Approval – The 3 Billion Dollar Bet</i>	2
Tier I General Education Course**	3
	<b>13</b>

### SEMESTER 4

CHEM 241B+243B: <i>Organic Chemistry II + lab*</i>	4
PSIO 380: <i>Fundamentals of Human Physiology*</i>	4
PCOL 440: <i>Rigor &amp; Reproducibility</i>	2
Tier I General Education Course**	3
Tier II General Education Course**	3
	<b>16</b>

### SEMESTER 5

MIC 205A + 205L: <i>General Microbiology + lab</i>	4
BIOC 384: <i>Foundations in Biochemistry</i>	3
PCOL 305: <i>Scientific Writing for Health Sciences</i>	3
PCOL 406: <i>Comprehensive Human Pharmacology</i>	5
	<b>14</b>

### SEMESTER 6

PHYS 102 + 181: <i>Introductory Physics I + lab</i>	4
PCOL 350: <i>ADME: How the Body Changes Drugs</i>	3
PCOL 410: <i>Integrated Medicinal Chemistry</i>	5
Tier II General Education Course**	3
	<b>15</b>

### SEMESTER 7

PCOL 355: <i>Drug Delivery Systems</i>	3
PCOL 390: <i>Biomarkers: Analysis of Drug Effect/Toxicity</i>	3
Tier II General Education Course**	3
Upper-Division Elective, Research, or Thesis	3
Upper-Division Elective	3
	<b>15</b>

### SEMESTER 8

PHCL 460: <i>Designing Drugs: From Chemistry to Cure</i>	3
PCOL 473: <i>Pharmacogenomics</i>	3
Upper-Division Elective, Research, or Thesis	3
Elective	6
	<b>15</b>

**Total Units Required: 120 (42 upper-division)**

#### Notes:

- This is a sample plan. Your placement scores, transfer and exam credit, and other personal factors may impact your course sequencing. Other sample plans are available for pre-med and pre-PharmD students. (Additional courses are required for admission to those professional programs.) Official degree requirements can be found in the UA Academic Catalog.
- ~ PCOL 196D is recommended for all incoming first-year students, but it is not a required course.
- \* Certain science, math, and English courses must be completed with a minimum C average in order to gain Advanced Standing in the Pharmaceutical Sciences major. Other requirements will apply. Advanced Standing is required in order to access PCOL and PHCL courses in the 6<sup>th</sup> through 8<sup>th</sup> semester.
- \*\* Standard general education requirements include the following:
  - Tier I: Two courses in Traditions & Cultures (160) and two courses in Individuals & Societies (150)
  - Tier II: Three units in Arts, one course in Humanities, and one course in Individuals & Societies
  - Diversity Emphasis: One of your Tier I or II courses must have a diversity emphasis
  - Honors students have the option of taking one Tier I and two Tier II courses in the Individuals & Societies and Traditions & Cultures/Humanities categories. The same total number of courses apply for honors and non-honors students.

Updated 2/24/2020

# Bachelor of Science in Pharmaceutical Sciences

Degree Requirements: Catalog Year 2020-2021

## Sample Four-Year Plan: Version 2A

Recommended for students with math placement of MATH 113 or higher, **Pre-Med Track**

SEMESTER 1		SEMESTER 2	
MATH 113: <i>Elements of Calculus*</i>	3	CHEM 152: <i>General Chemistry II*</i>	4
CHEM 151: <i>General Chemistry*</i>	4	ENGL 102: <i>English Composition II*</i>	3
ENGL 101: <i>English Composition I</i>	3	Second Language – 2 <sup>nd</sup> -semester level	4
Second Language – 1 <sup>st</sup> -semester level	4	MCB 181R +181L: <i>Introductory Biology I + lab*</i>	4
PCOL 196D: <i>Intro to Pharmaceutical Sciences</i>	1		
	<b>15</b>		<b>15</b>
SEMESTER 3		SEMESTER 4	
CHEM 241A+243A: <i>Organic Chemistry I + lab*</i>	4	CHEM 241B+243B: <i>Organic Chemistry II + lab*</i>	4
PSIO 201: <i>Human Anatomy &amp; Physiology I*</i>	4	PSIO 202: <i>Human Anatomy &amp; Physiology II</i>	4
PCOL 310: <i>Drug Approval - The 3 Billion Dollar Bet</i>	2	PCOL 440: <i>Rigor &amp; Reproducibility</i>	2
MATH 263: <i>Intro to Statistics and Biostatistics***</i>	3	PSY 150A1: <i>Structure of Mind &amp; Behavior***</i>	3
Tier I General Education Course**	3	Tier I General Education course**	3
	<b>16</b>		<b>16</b>
SEMESTER 5		SEMESTER 6	
PHYS 102+181: <i>Introductory Physics I + lab</i>	4	PHYS 103+182: <i>Introductory Physics II + lab***</i>	4
BIOC 384: <i>Foundations in Biochemistry</i>	3	PCOL 350: <i>ADME: How the Body Changes Drugs</i>	3
PCOL 305: <i>Scientific Writing for Health Sciences</i>	3	PCOL 410: <i>Integrated Medicinal Chemistry</i>	5
PCOL 406: <i>Comprehensive Human Pharmacology</i>	5	Tier I General Education Course**	3
	<b>14</b>		<b>15</b>
SEMESTER 7		SEMESTER 8	
PCOL 355: <i>Drug Delivery Systems</i>	3	PHCL 460: <i>Designing Drugs: From Chemistry to Cure</i>	3
PCOL 390: <i>Biomarkers: Analysis of Drug Effect/Toxicity</i>	3	PCOL 473: <i>Pharmacogenomics</i>	3
ECOL 182R+182L: <i>Introductory Biology II + lab***</i>	4	Upper-Division Tier II General Education Course**	3
MIC 205A+205L: <i>General Microbiology + lab</i>	4	Upper-Division Tier II General Education Course**	3
	<b>14</b>	Upper-Division Tier II General Education Course**	3
			<b>15</b>

## Total Units Required: 120 (42 upper-division)

- This is a sample plan. Your placement scores, transfer and exam credit, and other personal factors may impact your course sequencing. Official degree requirements can be found in the UA Academic Catalog.
- \* Certain science, math, and English courses must be completed with a minimum C average in order to gain Advanced Standing in the Pharmaceutical Sciences major. Other requirements will apply. Advanced Standing is required in order to access PCOL and PHCL courses in the 6th through 8th semester.
- \*\* Standard general education requirements include the following:
  - Tier I: Two courses in Traditions & Cultures (160) and two courses in Individuals & Societies (150)
  - Tier II: Three units in Arts, one course in Humanities, and one course in Individuals & Societies
  - Diversity Emphasis: One of your Tier I or II courses must have a diversity emphasis
  - Honors students have the option of taking one tier I and two tier II courses in the Individuals & Societies and Traditions & Cultures/Humanities categories. The same number of courses apply for honors and non-honors students.
- \*\*\*Most med schools require psychology, biostatistics, 2 semesters of physiology + lab, and 2 semesters of physics + lab, and introductory biology II. Pre-med students should take these courses, even though they are not specifically required for the PharmSci major. Individual med schools may have other unique admission requirements; check your schools of interest and incorporate any additional course requirements into your plan.

updated 2/7/2020

# Bachelor of Science in Pharmaceutical Sciences

Degree Requirements: Catalog Year 2020-2021

## Sample Four-Year Plan: Version 3A

Recommended for students with math placement of MATH 113 or higher, **Pre-PharmD Track**

### SEMESTER 1

MATH 113: <i>Elements of Calculus*</i>	3
CHEM 151: <i>General Chemistry*</i>	4
ENGL 101: <i>English Composition I</i>	3
Second Language – 1 <sup>st</sup> -semester level	4
PCOL 196D: <i>Intro to Pharmaceutical Sciences</i>	1
	<b>15</b>

### SEMESTER 2

CHEM 152: <i>General Chemistry II*</i>	4
ENGL 102: <i>English Composition II</i>	3
MCB 181R +181L: <i>Introductory Biology I + lab*</i>	4
Second Language – 2 <sup>nd</sup> -semester level	4
	<b>15</b>

### SEMESTER 3

CHEM 241A+243A: <i>Organic Chemistry I + lab*</i>	4
PSIO 201: <i>Human Anatomy &amp; Physiology I*</i>	4
PCOL 310: <i>Drug Approval – The 3 Billion Dollar Bet</i>	2
Tier I General Education Course**	3
Tier I General Education Course**	3
	<b>16</b>

### SEMESTER 4

CHEM 241B+243B: <i>Organic Chemistry II + lab*</i>	4
PSIO 202: <i>Human Anatomy &amp; Physiology II</i>	4
PCOL 440: <i>Rigor &amp; Reproducibility</i>	2
Statistics (MATH 163 or 263, or PSY 230, or CPH 376)***	3
Upper-division Elective	1
	<b>14</b>

### SEMESTER 5

MIC 205A + 205L: <i>General Microbiology + lab</i>	4
BIOC 384: <i>Foundations in Biochemistry</i>	3
PCOL 305: <i>Scientific Writing for Health Sciences</i>	3
PCOL 406: <i>Comprehensive Human Pharmacology</i>	5
	<b>15</b>

### SEMESTER 6

PHYS 102+181: <i>Introductory Physics I + lab</i>	4
PCOL 350: <i>ADME: How the Body Changes Drugs</i>	3
PCOL 410: <i>Integrated Medicinal Chemistry</i>	5
Tier I General Education Course**	3
	<b>15</b>

### SEMESTER 7

PCOL 355: <i>Drug Delivery Systems</i>	3
PCOL 390: <i>Biomarkers: Analysis of Drug Effect/Toxicity</i>	3
Tier I General Education Course**	3
Tier II General Education Course**	3
Upper-Division Elective	3
	<b>15</b>

### SEMESTER 8

PHCL 460: <i>Designing Drugs: From Chemistry to Cure</i>	3
PCOL 473: <i>Pharmacogenomics</i>	3
Tier II General Education Course**	3
Tier II General Education Course**	3
Upper-Division Elective	3
	<b>15</b>

## Total Units Required: 120 (42 upper-division)

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-Diversity Emphasis: One of your Tier I or II courses must have an approved diversity emphasis

-Honors students have the option of taking one tier I and two tier II courses in the Individuals & Societies and Traditions & Cultures/Humanities categories. The same number of courses apply for honors and non-honors students.

\*\*\*Pre-PharmD students should complete statistics, even though it is not specifically required for the PharmSci major. Other PharmD programs may have additional requirements; check your schools of interest and incorporate any additional course requirements into your plan.

Updated 2/7/2020