



NAME _____ ID# _____ Date _____

GENERAL EDUCATION REQUIREMENTS

English Composition*

ENGL 101 or 107 3 _____
ENGL 102 or 108 3 _____

OR

ENGL 109H 3 _____

Second Language

2nd 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 & 243A 3 _____ 1 _____
CHEM 241B & 243B 3 _____ 1 _____

Introductory Biology, with labs*

MCB 181R & 181L 3 _____ 1 _____
ECOL 182R & 182L 3 _____ 1 _____

(ECOL requirement is being eliminated, effective in Fall 2020)

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 additional 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 _____

*ENGL, MATH, CHEM, and MCB courses must be completed with grades of C or higher prior to advancing from Pre-Pharmaceutical Sciences to Pharmaceutical Sciences. Other admission requirements apply.

**Language proficiency may be fulfilled by successfully completing a course at the 2nd semester level or higher, or by placing into 3rd semester language 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 2019-2020

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 st -semester level	4
PCOL 196D: <i>Intro to Pharmaceutical Sciences</i> ~	1
Total	15

SEMESTER 2

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

SEMESTER 3

CHEM 241A+243A: <i>Organic Chemistry I + lab</i>	4
MCB 181R +181L: <i>Introductory Biology I + lab</i>	4
PCOL 305: <i>Scientific Writing for Health Sciences</i>	3
Tier I General Education Course**	3
Total	14

SEMESTER 4

CHEM 241B+243B: <i>Organic Chemistry II + lab</i>	4
PSIO 380: <i>Fundamentals of Human Physiology</i>	4
PCOL 310: <i>Drug Approval – The 3 Billion Dollar Bet</i>	2
Tier I general Education Course**	3
Tier II General Education Course**	3
Total	16

SEMESTER 5

MIC 205A + 205L: <i>General Microbiology + lab</i>	4
BIOC 384: <i>Foundations in Biochemistry</i>	3
PCOL 440: <i>Rigor & Reproducibility</i>	2
PCOL 406: <i>Comprehensive Human Pharmacology</i>	5
Total	14

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
Total	15

SEMESTER 7

PCOL 355: <i>Drug Delivery Systems</i>	3
PCOL 390: <i>Biomarkers: Analysis of Drug Effect/Toxicity</i>	3
ECOL 182R + 182L: <i>Introductory Biology II + lab</i>	4
Tier II General Education Course**	3
Upper-Division Elective, Research, or Thesis	3
Total	16

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	4
Total	13

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 grades of C or higher prior to advancing from the Pre-Pharmaceutical Sciences to the Pharmaceutical Sciences Major. Other admission requirements, including 2.0 UA cumulative and major GPA, will apply. Major admission 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 total number of courses apply for honors and non-honors students.

Updated 4/25/19

Bachelor of Science in Pharmaceutical Sciences

Degree Requirements: Catalog Year 2019-2020

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 nd -semester level	4
Second Language – 1 st -semester level	4	MCB 181R +181L: <i>Introductory Biology I + lab</i>	4
PCOL 196D: <i>Intro to Pharmaceutical Sciences</i>	1		
	15		15
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 & Physiology I</i>	4	PSIO 202: <i>Human Anatomy & Physiology II</i>	4
PCOL 305: <i>Scientific Writing: Manuscripts & Proposals</i>	3	PCOL 310: <i>Drug Approval - The 3 Billion Dollar Bet</i>	2
MATH 263: <i>Intro to Statistics and Biostatistics***</i>	3	PSY 150A1: <i>Structure of Mind & Behavior***</i>	3
		Tier I General Education course**	3
	14		16
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 440: <i>Rigor & Reproducibility</i>	2	PCOL 410: <i>Integrated Medicinal Chemistry</i>	5
PCOL 406: <i>Comprehensive Human Pharmacology</i>	5	MIC 205A+205L: <i>General Microbiology + lab</i>	4
	14		16
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
Tier I General Education Course**	3	Upper-Division Tier II General Education Course**	3
Tier I General Education Course**	3	Upper-Division Tier II General Education Course**	3
	16		15

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 grades of C or higher prior to advancing from the Pre-Pharmaceutical Sciences to Pharmaceutical Sciences Major. Other admission requirements, including 2.0 UA cumulative GPA, will apply. Major admission is required in order to access PCOL and PHCL courses in the 6th through 8th semester.

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-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 PSY 150A1, biostatistics, 2 semesters of physiology + lab, and 2 semesters of physics + lab. Pre-med students should take these courses, even though they are not specifically required for the PharmSci major. Individual med schools have other unique admission requirements; check your schools of interest and incorporate any additional course requirements into your plan.

Bachelor of Science in Pharmaceutical Sciences

Degree Requirements: Catalog Year 2019-2020

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 st -semester level	4
PCOL 196D: <i>Intro to Pharmaceutical Sciences</i>	1
	15

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 nd -semester level	4
	15

SEMESTER 3

CHEM 241A+243A: <i>Organic Chemistry I + lab</i>	4
PSIO 201: <i>Human Anatomy & Physiology I***</i>	4
PCOL 305: <i>Scientific Writing: Manuscripts & Proposals</i>	3
Statistics (MATH 163 or 263, or PSY 230, or CPH 376)***	3
	14

SEMESTER 4

CHEM 241B+243B: <i>Organic Chemistry II + lab</i>	4
PSIO 202: <i>Human Anatomy & Physiology II***</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
	16

SEMESTER 5

MIC 205A + 205L: <i>General Microbiology + lab</i>	4
BIOC 384: <i>Foundations in Biochemistry</i>	3
PCOL 355: <i>Drug Delivery Systems</i>	3
PCOL 406: <i>Comprehensive Human Pharmacology</i>	5
	15

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
	15

SEMESTER 7

PCOL 440: <i>Rigor & Reproducibility</i>	2
PCOL 390: <i>Biomarkers: Analysis of Drug Effect/Toxicity</i>	3
ECOL 182R + 182L: <i>Introductory Biology II + lab</i>	4
Tier I General Education Course**	3
Tier II General Education Course**	3
	15

SEMESTER 8

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

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-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, and two semesters of physiology + lab (in lieu of the one-semester PSIO 380 course).

These specific courses are not required for the BSPS major, but are required for admission to UA's PharmD program. Other PharmD schools may have additional requirements.

Updated 4/25/19