PHARMACOLOGY AND TOXICOLOGY, B.S.

Begin Campus: Any Penn State Campus

End Campus: University Park

Degree Requirements

For the Bachelor of Science degree in Pharmacology and Toxicology, a minimum of 120 credits is required:

Requirement	Credits
General Education	45
Electives	0-2
Requirements for the Major	88-91

15 of the 45 credits for General Education are included in the Requirements for the Major. This includes: 9 credits of GN courses; 6 credits of GQ courses.

Requirements for the Major

To graduate, a student enrolled in the major must earn a grade of C or better in each course designated by the major as a C-required course, as specified by Senate Policy 82-44 (https://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#82-44).

Code	Title	Credits
Prescribed Courses		
BBH/HPA 440	Principles of Epidemiology	3
BIOL 220W	Biology: Populations and Communities	4
BIOL 230W	Biology: Molecules and Cells	4
BMB 211	Elementary Biochemistry	3
BMB 212	Elementary Biochemistry Laboratory	1
BMB 221	Applied Biochemistry	2
CHEM 210	Organic Chemistry I	3
CHEM 212	Organic Chemistry II	3
CHEM 213W	Laboratory in Organic Chemistry - Writing Intensive	2
PHYS 250	Introductory Physics I	4
PHYS 251	Introductory Physics II	4
VBSC 230	The Science of Poisons	3
Prescribed Courses: Require a grade of C or better		
BIOL 110	Biology: Basic Concepts and Biodiversity	4
CHEM 110	Chemical Principles I	3
CHEM 111	Experimental Chemistry I	1
CHEM 112	Chemical Principles II	3
CHEM 113	Experimental Chemistry II	1
ERM/VBSC 431	Environmental Toxicology	3
MATH 140	Calculus With Analytic Geometry I	4
MATH 141	Calculus with Analytic Geometry II	4
VBSC 331	Pharmacology I: Drug Actions and Reactions	3
VBSC 430	Principles of Toxicology	3
VBSC/BMB 433	Molecular and Cellular Toxicology	3
VBSC 438	Introduction to Molecular Pharmacology	3

Additional Courses		
BIOL 141	Introduction to Human Physiology	3-4
or BIOL 240W	Biology: Function and Development of Organisms	
STAT 200	Elementary Statistics	3-4
or STAT 250	Introduction to Biostatistics	
VBSC 395	Internship	2-3
or VBSC 496	Independent Studies	
Supporting Courses and Related Areas		
Supporting Courses and Related Areas: Require a grade of C or better		
Select 9 credits of 400-level courses from department list		9

General Education

Connecting career and curiosity, the General Education curriculum provides the opportunity for students to acquire transferable skills necessary to be successful in the future and to thrive while living in interconnected contexts. General Education aids students in developing intellectual curiosity, a strengthened ability to think, and a deeper sense of aesthetic appreciation. These are requirements for all baccalaureate students and are often partially incorporated into the requirements of a program. For additional information, see the General Education Requirements (https://bulletins.psu.edu/undergraduate/general-education/baccalaureate-degree-general-education-program/) section of the Bulletin and consult your academic adviser.

The keystone symbol appears next to the title of any course that is designated as a General Education course. Program requirements may also satisfy General Education requirements and vary for each program.

Foundations (grade of C or better is required and Inter-Domain courses do not meet this requirement.)
- **Quantification (GQ):** 6 credits
- **Writing and Speaking (GWS):** 9 credits

Breadth in the Knowledge Domains (Inter-Domain courses do not meet this requirement.)
- **Arts (GA):** 3 credits
- **Health and Wellness (GHW):** 3 credits
- **Humanities (GH):** 3 credits
- **Social and Behavioral Sciences (GS):** 3 credits
- **Natural Sciences (GN):** 3 credits

Integrative Studies
- **Inter-Domain Courses (Inter-Domain):** 6 credits

Exploration
- **GN,** may be completed with Inter-Domain courses: 3 credits
- **GA, GH, GN, GS, Inter-Domain courses.** This may include 3 credits of World Language course work beyond the 12th credit level or the requirements for the student's degree program, whichever is higher: 6 credits

University Degree Requirements
First Year Engagement
All students enrolled in a college or the Division of Undergraduate Studies at University Park, and the World Campus are required to take 1 to 3 credits of the First-Year Seminar, as specified by their college First-Year Engagement Plan.

Other Penn State colleges and campuses may require the First-Year Seminar; colleges and campuses that do not require a First-Year Seminar provide students with a first-year engagement experience.

First-year baccalaureate students entering Penn State should consult their academic adviser for these requirements.

Cultures Requirement
6 credits are required and may satisfy other requirements

- United States Cultures: 3 credits
- International Cultures: 3 credits

Writing Across the Curriculum
3 credits required from the college of graduation and likely prescribed as part of major requirements.

Total Minimum Credits
A minimum of 120 degree credits must be earned for a baccalaureate degree. The requirements for some programs may exceed 120 credits. Students should consult with their college or department adviser for information on specific credit requirements.

Quality of Work
Candidates must complete the degree requirements for their major and earn at least a 2.00 grade-point average for all courses completed within their degree program.

Limitations on Source and Time for Credit Acquisition
The college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. Credit used toward degree programs may need to be earned from a particular source or within time constraints (see Senate Policy 83-80 (https://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#83-80)). For more information, check the Suggested Academic Plan for your intended program.