

# PHYSICAL AND LIFE SCIENCES, BAAS

The physical and life sciences share fundamental principles that lie at the heart of scientific discovery and innovation. In this concentration, you develop a solid foundation in both branches of science by completing interdisciplinary foundation requirements covering biology, chemistry, and physics.

**For more information:** <https://lpsonline.sas.upenn.edu/academics/bachelors-degree/baas-concentrations/physical-and-life-sciences> (<https://lpsonline.sas.upenn.edu/academics/bachelors-degree/baas-concentrations/physical-and-life-sciences/>)

## Curriculum

The Bachelor of Applied Arts and Sciences (BAAS) recognizes the power of an applied liberal arts education to provide students with strong communication skills, understanding of different cultures and perspectives, and the ability to apply their knowledge to nuanced, complex scenarios with insight, perspective, and empathy.

### Overview of degree requirements

30 course units are required for the Bachelor of Applied Arts and Sciences degree.

Code	Title	Course Units
<b>Requirements</b>		
Foundational Requirements		8
Concentrations		12
Electives		8
Penn Elective (Must be a Penn course)		1
BAAS 4000	The Art of Work (Senior Portfolio Requirement)	1
<b>Total Course Units</b>		<b>30</b>

In addition to course requirements, BAAS students must complete BAAS 4000: The Art of Work course.

### Foundational requirements

The foundational requirements of the BAAS degree reflect the core competencies and values of Penn LPS Online: the skills and knowledge needed to understand and solve complex problems, the ability to communicate effectively with a wide variety of audiences and an appreciation for diverse cultures and traditions. Students can transfer a maximum of 4 course units of foundational courses from a regionally accredited institution. Our program team can also give a preliminary evaluation of transfer credits before students officially apply. Visit the Transfer Preparation & Policies (<https://lpsonline.sas.upenn.edu/admissions/baas-admissions/transfer-preparation-policies/>) page for more details.

Code	Title	Course Units
<b>Foundational Requirements</b>		
<i>Ethical Reasoning</i>		
Select 1 Ethical Reasoning course		1
<i>Qualitative Analysis</i>		

Select 2 Qualitative Analysis courses	2
<i>Quantitative Analysis</i>	
Select 2 Quantitative Analysis courses	2
<i>Scientific Process</i>	
Select 1 Scientific Process course	1
<i>Writing</i>	
Select 1 Writing course *	1
<i>Cross-Cultural Interactions</i>	
Select 1 Cross-cultural Interactions course	1
<b>Total Course Units</b>	<b>8</b>

\* Must be taken at Penn

### Concentrations

Just as a college major serves to focus your studies during a four-year degree, the BAAS concentrations enable students to tailor their undergraduate education to specific personal and professional goals. Concentrations progress from introductory-level courses to higher-level courses so that students develop skills and knowledge with greater complexity as they move through the curriculum. Many concentrations are interdisciplinary, to provide students with opportunities to explore their areas of interest from multiple perspectives and develop a flexible approach to solving complex problems in professional as well as academic contexts.

Code	Title	Course Units
<b>Physical and Life Sciences Concentration</b>		
<i>Students are required to take a minimum of 3 of the required 12 courses at the 3000 and/or 4000 level</i>		
SPRO 1000	Scientific Reasoning	1
Complete 3 Science Foundation courses		3
CLCH 3000	Communicating Science	
PHYL 1200	Foundations of Life Sciences	
PHYL 1600	Foundations of Physical & Chemical Sciences	
Complete 1 Foundational Math course		1
MTHS 1000	Mathematical Foundations for Data Analytics	
MTHS 2000	Mathematics All Around You	
Complete 2 Climate Change courses		2
CLCH 1600	Oceanography	
CLCH 2100	Introduction to Disaster Management	
CLCH 2200	Atmospheric Science	
CLCH 2300	Climate Change	
CLCH 3000	Communicating Science	
CLCH 3100	Global Environmental Issues	
Complete 2 Neuroscience courses (First complete NEUR 1000: Introduction to Neuroscience and select one other Neuroscience course)		2
NEUR 1000	Introduction to Neuroscience (Prerequisite for all Neuroscience courses)	
NEUR 1600	The Neuroscience of Music	
NEUR 2000	Behavioral Neuroscience	
NEUR 2600	Hormones,Brain,Behavior	

NEUR 2800	Autonomic Pharmacology	
NEUR 4000	Psychopharmacology	
Complete 3 additional Science Electives with: Attribute BBPL (Can include applicable transfer courses) ( <a href="http://catalog.upenn.edu/attributes/bbpl/">http://catalog.upenn.edu/attributes/bbpl/</a> )		3
<b>Total Course Units</b>		<b>12</b>

### **Electives (8 CUs + 1 Penn CU)**

Electives are courses that do not apply toward your foundational or degree concentration requirements. You may choose to deepen your field of study by taking additional classes within your concentration, develop a new skill by completing all of the courses within a course block outside of your degree concentration, or discover new interests and abilities by taking individual courses that appeal to your interests. Students choose 8 electives from any of Penn LPS Online's areas of study. Students are required to complete 1 CU of Penn elective that must be a Penn course. Transfer students can apply a maximum of 8 course units from a regionally accredited institution toward this requirement.

### **BAAS 4000: The Art of Work (Senior Portfolio Requirement) (1CU)**

This course is designed to expose students to a scholarly understanding of the modern world of work, examining the many ways that work shapes our identities, communities, and society. BAAS students should plan to take BAAS 4000: The Art of Work during one of their final two terms in the program. The course will be offered in spring and fall annually. Students must submit a request via Path@Penn to register for the course to ensure eligibility. Students should consult with their academic program regarding final certifications and requirements for graduation. Email [lpsonline@sas.upenn.edu](mailto:lpsonline@sas.upenn.edu) if you have any questions.

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The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2025 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.

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