SCIENCE, B.S. (ABINGTON)

Begin Campus: Any Penn State Campus

End Campus: Abington

Degree Requirements

For the Bachelor of Science degree in Science, a minimum of 124 credits is required, with at least 15 credits at the 400 level:

Requirement	Credits
General Education	45
Requirements for the Major	94

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).

Common Requirements for the Major (All Options)

Code	litle	Credits
Prescribed Cours	es	
CHEM 111	Experimental Chemistry I	1
CHEM 112	Chemical Principles II	3
CHEM 113	Experimental Chemistry II	1
MATH 141	Calculus with Analytic Geometry II	4
Prescribed Course	s: Require a grade of C or better	
BIOL 110	Biology: Basic Concepts and Biodiversity	4
CHEM 110	Chemical Principles I	3
MATH 140	Calculus With Analytic Geometry I	4
Requirements for the Option		
Select an option		74

Requirements for the Option General Science Option (74 credits)

Available at the following campuses: Abington, Berks, Harrisburg, Scranton, University Park, York

Code	Title	Credits
Additional Course	es	
Select 4 credits o	f the following:	4
BIOL 129	Mammalian Anatomy	
BIOL 141 & BIOL 142	Introduction to Human Physiology and Physiology Laboratory	
BIOL 220W	Biology: Populations and Communities	
BIOL 230W	Biology: Molecules and Cells	
BIOL 240W	Biology: Function and Development of Organism	าร
Select 3-4 credits	of the following:	3-4
STAT 200	Elementary Statistics	
STAT 250	Introduction to Biostatistics	
STAT 301		

STAT 401	Experimental Methods	
Select 8-12 cr	edits of the following:	8-12
PHYS 211	General Physics: Mechanics	
& PHYS 21:	and General Physics: Electricity and Magnetism	
& PHYS 21:	and General Physics: Fluids and Thermal Physics	
& PHYS 21	4 and General Physics: Wave Motion and Quantum Physics ¹	
PHYS 250	Introductory Physics I	
& PHYS 25	1 and Introductory Physics II ¹	
Cumparting Ca	Nurses and Deleted Areas	

Supporting Courses and Related Areas

A maximum of 12 credits of Independent Study (296, 496) may be applied toward credits for graduation.

Select 21-26 credits from program list (Students may apply 6 credit&1-26 of ROTC)

Select 3 credits from earth and mineral sciences

3 Select 3 credits in Global, Social, and Personal Awareness from
3 department approved course list in consultation with adviser

Select 3 credits in Teamwork and Interpersonal Communication from
3 department approved course list in consultation with adviser

Select 6 credits of 400-level courses 6
Supporting and Related Courses: Require a grade of C or better

Select 18 credits in life, mathematical, or physical sciences, with at least 9 credits at the 400 level ^{2,3}

PHYS 211 and PHYS 250 require a grade of C or better.

Only the 9 credits at the 400 level require a grade of C or better.
 Physical sciences include ASTRO, CHEM, PHYS; mathematical sciences include CMPSC, MATH, STAT; life sciences include BIOL, BIOTC, BMB, MICRB.

Biological Sciences and Health Professions Option (74 credits) Available at the following campuses: University Park

Code	Title C	redits
Prescribed Cours	ses	
HPA 101	Introduction to Health Services Organization	3
Additional Cours	es	
Select 4 credits of	of the following:	4
BIOL 129	Mammalian Anatomy	
BIOL 220W	Biology: Populations and Communities	
BIOL 230W	Biology: Molecules and Cells	
BIOL 240W	Biology: Function and Development of Organisms	
BIOL 141 & BIOL 142	Introduction to Human Physiology and Physiology Laboratory	
Select 3-4 credits	s of the following:	3-4
STAT 200	Elementary Statistics	
STAT 250	Introduction to Biostatistics	
STAT 301		
STAT 401	Experimental Methods	
Select 6-8 credits	s of the following:	6-8
CHEM 202 & CHEM 203	Fundamentals of Organic Chemistry I and Fundamentals of Organic Chemistry II	
CHEM 210 & CHEM 212 & CHEM 213	Organic Chemistry I and Organic Chemistry II and Laboratory in Organic Chemistry	
Select 3 credits of	of the following:	3

BIOL 222	Genetics	
BIOL 322	Genetic Analysis	
BMB 211	Elementary Biochemistry	
BMB 251	Molecular and Cell Biology I	
MICRB 201	Introductory Microbiology	
Select 8-12 credit	s of the following:	8-12
PHYS 211 & PHYS 212 & PHYS 213 & PHYS 214	General Physics: Mechanics and General Physics: Electricity and Magnetism and General Physics: Fluids and Thermal Physics and General Physics: Wave Motion and Quantum Physics ²	
PHYS 250 & PHYS 251	Introductory Physics I and Introductory Physics II ²	

Supporting Courses and Related Areas

A maximum of 12 credits of Independent Study (296, 496) may be applied toward credits for graduation.

Select 15 credits from program list for Healthcare/ Medicine/Ethical 15 Competencies ¹

Select 10-17 credits from program list (Students may apply 6 credits 0-17 of ROTC)

Select 3 credits in Global, Social, and Personal Awareness from
department approved course list in consultation with adviser
Select 3 credits in Teamwork and Interpersonal Communication from
department approved course list in consultation with adviser
Supporting Courses and Related Areas: Require a grade of C or better
Select 9 credits of 400-level BMB, BIOL, BIOTC, or MICRB courses

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Legal Studies, Government Service, Public Policy Option (74 credits) Available at the following campuses: University Park

Code Additional Course		Credits
Select 4 credits of		4
BIOL 129	Mammalian Anatomy	4
BIOL 141 & BIOL 142	Introduction to Human Physiology and Physiology Laboratory	
BIOL 220W	Biology: Populations and Communities	
BIOL 230W	Biology: Molecules and Cells	
BIOL 240W	Biology: Function and Development of Organism	S
Select 3-4 credits	s of the following:	3-4
STAT 200	Elementary Statistics	
STAT 250	Introduction to Biostatistics	
STAT 301		
STAT 401	Experimental Methods	
Select 8-12 credi	ts of the following:	8-12
PHYS 211 & PHYS 212 & PHYS 213 & PHYS 214	General Physics: Mechanics and General Physics: Electricity and Magnetism and General Physics: Fluids and Thermal Physics and General Physics: Wave Motion and Quantum Physics ¹	
PHYS 250 & PHYS 251	Introductory Physics I and Introductory Physics II ¹	

Supporting Courses and Related Areas

Select 12-17 credits from program list (Students may apply 6 credits 2-17 of ROTC)

of RUTC)	
Select 18 credits from program list for Legal Studies, Government Service, Public Policy ²	18
Select 3 credits in Global, Social, and Personal Awareness from department approved course list in consultation with adviser	3
Select 3 credits in Teamwork and Interpersonal Communication from department approved course list in consultation with adviser	3
Supporting Courses and Related Areas: Require a grade of C or better	
Select 18 credits in life, mathematical, or physical sciences, with at least 9 credits at the 400 level ^{3,4}	18

PHYS 211 and PHYS 250 require a grade of C or better.

Life Science Option (74 credits)

Available at the following campuses: Abington, Berks, Harrisburg, Scranton, York

Code	Title C	redits
Additional Course	es	
Select 4 credits of	of the following:	4
BIOL 220W	Biology: Populations and Communities	
BIOL 230W	Biology: Molecules and Cells	
BIOL 240W	Biology: Function and Development of Organisms	
Select 3 credits of	of the following:	3
CMPSC 101	Introduction to Programming	
MATH 250	Ordinary Differential Equations	
STAT 250	Introduction to Biostatistics	
Select 3 credits of	of the following:	3
BMB 211	Elementary Biochemistry	
BMB 251	Molecular and Cell Biology I	
MICRB 201	Introductory Microbiology	
Select 6-8 credits	of the following:	6-8
CHEM 202	Fundamentals of Organic Chemistry I	
& CHEM 203	and Fundamentals of Organic Chemistry II	
CHEM 210	Organic Chemistry I	
& CHEM 212 & CHEM 213	and Organic Chemistry II	
	and Laboratory in Organic Chemistry	8-12
	ts of the following:	8-12
PHYS 211 & PHYS 212	General Physics: Mechanics and General Physics: Electricity and Magnetism	
& PHYS 213	and General Physics: Electricity and Magnetism and General Physics: Fluids and Thermal Physics	
& PHYS 214	and General Physics: Wave Motion and Quantum	
	Physics 1	
PHYS 250	Introductory Physics I	
& PHYS 251	and Introductory Physics II	
Supporting Cours	ses and Related Areas	

Supporting Courses and Related Areas

A maximum of 12 credits of Independent Study 296, 496 may be applied toward credits for graduation.

Six credits must be at the 400-level. Select from department approved course list in consultation with adviser.

² PHYS 211 and PHYS 250 require a grade of C or better.

² Six credits must be at the 400-level. Select from department approved course list in consultation with adviser.

³ Only the 9 credits at the 400 level require a grade of C or better.

⁴ Physical sciences include ASTRO, CHEM, PHYS; mathematical sciences include CMPSC, MATH, STAT; life sciences include BIOL, BIOTC, BMB, MICRB.

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Select 23-29 credits from program list (Students may apply 6 cred of ROTC)	lit&3-29
Select 3 credits in Global, Social, and Personal Awareness	3
Select 3 credits in Teamwork and Interpersonal Communication	3
Select 6 credits of 400-level courses	6
Supporting Courses and Related Areas: Require a grade of C or better	r
Select 9 credits of 400-level BMB, BIOL, BIOTC, or MICRB courses	9

¹ PHYS 211 and PHYS 250 require a grade of C or better.

Mathematical Science Option (74 credits) Available at the following campuses: Abington

Code	Title	Credits
Prescribed Cours	es	
CMPSC 122	Intermediate Programming	3
MATH 220	Matrices	2-3
Additional Course	es	
CMPSC 360	Discrete Mathematics for Computer Science	3-4
or MATH 311W	Concepts of Discrete Mathematics	
MATH 230	Calculus and Vector Analysis	4
or MATH 251	Ordinary and Partial Differential Equations	
STAT 301		3
or STAT 318	Elementary Probability	
Select 3 credits o	f the following:	3
BMB 211	Elementary Biochemistry	
BMB 251	Molecular and Cell Biology I	
MICRB 201	Introductory Microbiology	
Select 3 credits o	f the following:	3
CMPSC 121	Introduction to Programming Techniques	
CMPSC 201	Programming for Engineers with C++	
CMPSC 202		
Select 8-12 credit	s of the following:	8-12
PHYS 211 & PHYS 212 & PHYS 213 & PHYS 214	General Physics: Mechanics and General Physics: Electricity and Magnetism and General Physics: Fluids and Thermal Physic and General Physics: Wave Motion and Quantum Physics ¹	
PHYS 250 & PHYS 251	Introductory Physics I and Introductory Physics II and Related Areas	

Supporting Courses and Related Areas

A maximum of 12 credits of Independent Study (296, 496) may be applied toward credits for graduation.

Select 18-24 credits from program list (Students may apply 6 credits 8-24 of ROTC)

Select 6 credits of 400-level courses	6
Select 3 credits in Global, Social, and Personal Awareness	3
Select 3 credits in Teamwork and Interpersonal Communication	3
Supporting Courses and Related Areas: Require a grade of C or better	
Select 9 credits of 400-level CMPSC, CSE, MATH, or STAT courses	9

¹ PHYS 211 and PHYS 250 require a grade of C or better.

Physical Science Option (74 credits)

Available at the following campuses: Currently not available at any campus location

Code	Title	Credits
Prescribed Courses		
ASTRO 291	Astronomical Methods and the Solar System	3
PHYS 212	General Physics: Electricity and Magnetism	4
PHYS 213	General Physics: Fluids and Thermal Physics	2
PHYS 214	General Physics: Wave Motion and Quantum Physics	2
Prescribed Courses: Require a grade of C or better		
PHYS 211	General Physics: Mechanics	4
Additional Courses		
Select 3 credits o	f the following:	3
BMB 211	Elementary Biochemistry	
BMB 251	Molecular and Cell Biology I	
MICRB 201	Introductory Microbiology	
Select 6-8 credits of the following: 6-8		6-8
CHEM 202 & CHEM 203	Fundamentals of Organic Chemistry I and Fundamentals of Organic Chemistry II	
CHEM 210 & CHEM 212 & CHEM 213	Organic Chemistry I and Organic Chemistry II and Laboratory in Organic Chemistry	
MATH 230	Calculus and Vector Analysis	4
or MATH 251	Ordinary and Partial Differential Equations	
Select 3 credits of the following: 3		
ASTRO 292	Astronomy of the Distant Universe	
EMCH 211	Statics	
ME 300	Engineering Thermodynamics I	
PHYS 237	Introduction to Modern Physics	
Supporting Cours	ses and Related Areas	
	2 credits of Independent Study (296, 496) may be redits for graduation.	;
Select 20-22 cred of ROTC)	its from program list (Students may apply 6 cred	lit&0-22
Select 6 credits o	f 400-level courses	6
Select 3 credits in Global, Social, and Personal Awareness		

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.

Select 3 credits in Teamwork and Interpersonal Communication

Supporting Courses and Related Areas: Require a grade of C or better Select 9 credits of 400-level ASTRO, CHEM, or PHYS courses

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.