The Science major is an interdisciplinary degree that aims to provide a broad, general education in science. The bachelor of science (B.S.) curriculum is designed specifically for students who have education goals relating to scientific theory and practice and who require a high degree of flexibility to obtain their educational objectives. After completing foundation courses in calculus, chemistry, physics, and the life sciences, students will select additional science courses from designated areas. A large number of supporting credits permit students to readily include significant breadth or specialization into their undergraduate curriculum. Some examples include minors in business, computer and information science, education, kinesiology, or other fields. The degree allows students throughout the Commonwealth to become familiar with both the theory and the practice of science. It can help prepare students for various careers in pharmaceutical, biotechnical, chemical, medical, and agricultural industries. The degree can also be tailored to meet the specific requirements of professional programs such as medical, dental, or pharmacy schools. The General Science option of the B.S. Science degree allows for the most flexibility. Achievement in a more specialized set of goals can be met by selecting one of the other B.S. options offered.

**Biological Sciences and Health Professions Option**

Available at the following campuses: University Park

**Legal Studies, Government Service, Public Policy Option**

Available at the following campuses: University Park

**Life Sciences Option**

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

**Mathematical Sciences Option**

Available at the following campuses: Altoona

**Physical Sciences Option**

Available at the following campuses: Altoona

Not all of these options are available at all locations, and there are minor distinctions of the core curriculum at some locations, so see the Science program director at your College for further details.

**Two-Year Preprofessional Preparation**

The first two years of the Science major (62 credits) can meet the preprofessional needs of those interested in admission to some schools of pharmacy, physical therapy, optometry, nursing, and physician assistant training. Successful students can then transfer after two years of undergraduate study to the professional school to which they are admitted. Note, however, that no Penn State degree can be awarded after only two years (62 credits) of study in the Science major. Also, note that the abbreviated two-year curriculum alone does not prepare students for admission to professional schools of general medicine, veterinary medicine, or dental medicine. Consult with your college’s health sciences professional adviser for additional information.

**What is Science?**

The Science major provides a broad and interdisciplinary foundation in the natural sciences. The Science BS program uses the principles of chemistry, physics, and life sciences to understand how these integrate over general areas including biological sciences and health professions, public policy, and science research and development.

**You Might Like This Program If...**

- You like learning by doing hands-on experiments.
- You are curious about the natural world and how science disciplines come together to explore and understand it.
- You are intrigued by science and desire a career in current and emerging interdisciplinary science disciplines, health professions, or melding science with law, policy or business.

In order to be eligible for entrance to the Science major, a student at any location must have:

1. attained at least a 2.00 cumulative grade-point average;
2. completed MATH 140 with a grade of C or better;
3. completed at least two of the following courses, BIOL 110; CHEM 110; PHYS 211 or PHYS 250, with a grade of C or better.

**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:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
<td>45</td>
</tr>
<tr>
<td>Requirements for the Major</td>
<td>94</td>
</tr>
</tbody>
</table>

**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 (http://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.)**

- Quantification (GQ): 6 credits
- Writing and Speaking (GWS): 9 credits

**Knowledge Domains**

- Arts (GA): 6 credits
- Health and Wellness (GHW): 3 credits
- Humanities (GH): 6 credits
- Social and Behavioral Sciences (GS): 6 credits
- Natural Sciences (GN): 9 credits

**Integrative Studies (may also complete a Knowledge Domain requirement)**
- Inter-Domain or Approved Linked Courses: 6 credits

15 of these 45 credits are included in the Requirements for the Major.

**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 (http://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.

**Requirements for the Major**
This includes 15 credits of General Education courses: 9 credits of GN courses; 6 credits of GQ courses.

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 (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#82-44).

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**Common Requirements for the Major (All Options)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 111</td>
<td>Experimental Chemistry I</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 112</td>
<td>Chemical Principles II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 113</td>
<td>Experimental Chemistry II</td>
<td>1</td>
</tr>
<tr>
<td>MATH 141</td>
<td>Calculus with Analytic Geometry II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 110</td>
<td>Chemical Principles I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 140</td>
<td>Calculus With Analytic Geometry I</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 110</td>
<td>Biology: Basic Concepts and Biodiversity</td>
<td>4</td>
</tr>
</tbody>
</table>

**Requirements for the Option**

| Select an option | 74 |

**General Science Option (74 credits)**

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 129</td>
<td>Mammalian Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 220W</td>
<td>Biology: Populations and Communities</td>
<td></td>
</tr>
<tr>
<td>BIOL 230W</td>
<td>Biology: Molecules and Cells</td>
<td></td>
</tr>
<tr>
<td>BIOL 240W</td>
<td>Biology: Function and Development of Organisms</td>
<td></td>
</tr>
<tr>
<td>BIOL 141</td>
<td>Introductory Physiology</td>
<td></td>
</tr>
<tr>
<td>&amp; BIOL 142</td>
<td>and Physiology Laboratory</td>
<td></td>
</tr>
</tbody>
</table>

Select 3-4 credits of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 200</td>
<td>Elementary Statistics</td>
<td></td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introduction to Biostatistics</td>
<td></td>
</tr>
<tr>
<td>STAT 301</td>
<td>Statistical Analysis I</td>
<td></td>
</tr>
<tr>
<td>STAT 401</td>
<td>Experimental Methods</td>
<td></td>
</tr>
</tbody>
</table>

Select 8-12 credits of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 211</td>
<td>General Physics: Mechanics</td>
<td></td>
</tr>
<tr>
<td>&amp; PHYS 212</td>
<td>and General Physics: Electricity and Magnetism</td>
<td></td>
</tr>
<tr>
<td>&amp; PHYS 213</td>
<td>and General Physics: Fluids and Thermal Physics</td>
<td></td>
</tr>
<tr>
<td>&amp; PHYS 214</td>
<td>and General Physics: Wave Motion and Quantum Physics</td>
<td></td>
</tr>
<tr>
<td>PHYS 250</td>
<td>Introductory Physics I</td>
<td></td>
</tr>
<tr>
<td>&amp; PHYS 251</td>
<td>and Introductory Physics II</td>
<td></td>
</tr>
</tbody>
</table>

**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(s) of ROTC)

Select 3 credits from earth and mineral sciences

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

Select 6 credits of 400-level courses

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.
1 PHYS 211 and PHYS 250 require a grade of C or better.
2 Only the 9 credits at the 400 level require a grade of C or better.
3 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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPA 101</td>
<td>Introduction to Health Services Organization</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional Courses
Select 4 credits of the following:

- 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  Introductory Physiology
  & BIOL 142  and Physiology Laboratory

Select 3-4 credits of the following:

- STAT 200  Elementary Statistics
- STAT 250  Introduction to Biostatistics
- STAT 301  Statistical Analysis I
- STAT 401  Experimental Methods

Select 6-8 credits of the following:

- CHEM 210  Organic Chemistry I
  & CHEM 212  and Organic Chemistry II
  & CHEM 213  and Laboratory in Organic Chemistry
- CHEM 202  Fundamentals of Organic Chemistry I
  & CHEM 203  and Fundamentals of Organic Chemistry II

Select 3 credits of the following:

- BMB 211  Molecular Cell Biology I
- MICRB 201 Introductory Microbiology
- BIOL 222  Genetics
- BIOL 322  Genetic Analysis

Select 8-12 credits of the following:

- PHYS 211  General Physics: Mechanics
  & PHYS 212  and General Physics: Electricity and Magnetism
  & PHYS 213  and General Physics: Fluids and Thermal Physics
  & PHYS 214  and General Physics: Wave Motion and Quantum Physics
- PHYS 250  Introductory Physics I
  & PHYS 251  and Introductory Physics II

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 Competencies

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

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 129</td>
<td>Mammalian Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 220W</td>
<td>Biology: Populations and Communities</td>
<td></td>
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<td>Biology: Molecules and Cells</td>
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<td></td>
</tr>
<tr>
<td>BIOL 141</td>
<td>Introductory Physiology</td>
<td></td>
</tr>
</tbody>
</table>
  & BIOL 142  and Physiology Laboratory

Select 3-4 credits of the following:

- STAT 200  Elementary Statistics
- STAT 250  Introduction to Biostatistics
- STAT 301  Statistical Analysis I
- STAT 401  Experimental Methods

Select 8-12 credits of the following:

- PHYS 211  General Physics: Mechanics
  & PHYS 212  and General Physics: Electricity and Magnetism
  & PHYS 213  and General Physics: Fluids and Thermal Physics
  & PHYS 214  and General Physics: Wave Motion and Quantum Physics
- PHYS 250  Introductory Physics I
  & PHYS 251  and Introductory Physics II

Supporting Courses and Related Areas: Require a grade of C or better
Select 9 credits of 400-level BMB, BIOL, BIOTC, or MICRB courses

Life Science Option (74 credits)
Available at the following campuses: Altoona, Berks, Harrisburg, Scranton, University Park, York

1 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.
Available at the following campuses: Altoona

**Mathematical Science Option (74 credits)**

**Prescribed Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMPSC 122</td>
<td>Intermediate Programming</td>
<td>3</td>
</tr>
<tr>
<td>MATH 220</td>
<td>Matrices</td>
<td>2-3</td>
</tr>
</tbody>
</table>

**Additional Courses**

Select 3 credits of the following:

- BMB 211 Elementary Biochemistry
- BMB 251 Molecular and Cell Biology I
- MICRB 201 Introductory Microbiology

Select 3 credits of the following:

- CMPSC 121 Introduction to Programming Techniques

**Science, B.S. (Berk)**

**Physical Science Option (74 credits)**

**Prescribed Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMPSC 201</td>
<td>Programming for Engineers with C++</td>
<td></td>
</tr>
<tr>
<td>CMPSC 202</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 230</td>
<td>Calculus and Vector Analysis</td>
<td>4</td>
</tr>
<tr>
<td>or MATH 251</td>
<td>Ordinary and Partial Differential Equations</td>
<td></td>
</tr>
<tr>
<td>CMPSC 360</td>
<td>Discrete Mathematics for Computer Science</td>
<td>3-4</td>
</tr>
<tr>
<td>or MATH 311W</td>
<td>Concepts of Discrete Mathematics</td>
<td></td>
</tr>
<tr>
<td>STAT 301</td>
<td>Statistical Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 318</td>
<td>Elementary Probability</td>
<td></td>
</tr>
</tbody>
</table>

Select 8-12 credits of the following:

- PHYS 211 General Physics: Mechanics
  & PHYS 212 and General Physics: Electricity and Magnetism
  & PHYS 213 and General Physics: Fluids and Thermal Physics
  & PHYS 214 and General Physics: Wave Motion and Quantum Physics

**Supporting Courses and Related Areas**

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

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

Select 6 credits of 400-level courses

Select 3 credits in Global, Social, and Personal Awareness

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 CMPSC, CSE, MATH, or STAT courses

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

**Mathematical Science Option (74 credits)**

**Available at the following campuses: Altoona**

**Prescribed Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMPSC 201</td>
<td>Programming for Engineers with C++</td>
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</tr>
<tr>
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<td></td>
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<td>MATH 230</td>
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<tr>
<td>or MATH 251</td>
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</tr>
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<td>or MATH 311W</td>
<td>Concepts of Discrete Mathematics</td>
<td></td>
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<td>STAT 301</td>
<td>Statistical Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 318</td>
<td>Elementary Probability</td>
<td></td>
</tr>
</tbody>
</table>

Select 8-12 credits of the following:

- PHYS 211 General Physics: Mechanics
  & PHYS 212 and General Physics: Electricity and Magnetism
  & PHYS 213 and General Physics: Fluids and Thermal Physics
  & PHYS 214 and General Physics: Wave Motion and Quantum Physics

**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 of ROTC)

Select 6 credits of 400-level courses

Select 3 credits in Global, Social, and Personal Awareness

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 CMPSC, CSE, MATH, or STAT courses

1. PHYS 211 and PHYS 250 require a grade of C or better.
conferred upon satisfactory completion of:
The B.S. degree in the Science major General Science option, will be
Program Requirements
You Might Like This Program If...
• You love studying science, but don't necessarily want a career in a
  laboratory.
• You enjoy coursework in multiple science disciplines and in business.
• You aspire to leadership roles.
• You enjoy working with others on a daily basis.
• You want the opportunity to move into a leadership role early in your
career.

Program Requirements
The B.S. degree in the Science major General Science option, will be

1. The first semester of course work in The Smeal College of Business
   M.B.A. program (i.e., a minimum of 12 graduate credits).
2. A minimum of 112 acceptable undergraduate credits, which must
   include:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTRO 292</td>
<td>Astronomy of the Distant Universe</td>
<td></td>
</tr>
<tr>
<td>EMCH 211</td>
<td>Statics</td>
<td></td>
</tr>
<tr>
<td>ME 300</td>
<td>Engineering Thermodynamics I</td>
<td></td>
</tr>
<tr>
<td>PHYS 237</td>
<td>Introduction to Modern Physics</td>
<td></td>
</tr>
</tbody>
</table>

Supporting Courses and Related Areas
A maximum of 12 credits of Independent Study (296, 496) may be
applied toward credits for graduation.
Select 20-22 credits from program list (Students may apply 6 credits20-22
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 ASTRO, CHEM, or PHYS courses 9

Accelerated Science B.S./M.B.A. Program (SCBUS_BS)
Students must begin and complete the Accelerated Science B.S./M.B.A.
Program at the University Park campus.
Students admitted to this special cooperative program between the
Eberly College of Science and The Smeal College of Business will be able
to combine a Bachelor of Science degree in the Science major, with a
Master of Business Administration degree. Highly motivated students,
who enter the University with a sufficient number and proper distribution
of AP credits, will have the opportunity to complete the requirements for
both programs within five years.

What is the Accelerated Science B.S./M.B.A. Program?
The Accelerated Science B.S./M.B.A. Program is designed to educate
the leaders in scientific industry, by providing students with a rigorous
science background and undergraduate degree along with a graduate
degree in business administration.

You Might Like This Program If...
• You love studying science, but don't necessarily want a career in a
  laboratory.
• You enjoy coursework in multiple science disciplines and in business.
• You aspire to leadership roles.
• You enjoy working with others on a daily basis.
• You want the opportunity to move into a leadership role early in your
career.

Program Requirements
The B.S. degree in the Science major General Science option, will be
conferred upon satisfactory completion of:

1. Complete the University's First-Year Seminar, United States
   Cultures, International Cultures, and Writing Across the Curriculum
   requirements 2
2. BIOL 110                  Biology: Basic Concepts and Biodiversity 3  4
3. CHEM 110                  Chemical Principles 3  3
4. CHEM 111                  Experimental Chemistry I 1
5. CHEM 112                  Chemical Principles II 3
6. CHEM 113                  Experimental Chemistry II 1
7. CMPSC 203                 Introduction to Spreadsheets and Databases 4
8. MATH 140                  Calculus With Analytic Geometry I 3  4
9. MATH 141                  Calculus With Analytic Geometry II 4
10. Select 3-4 credits of the following: 3-4
    11. STAT 200                 Elementary Statistics
    12. STAT 250                 Introduction to Biostatistics
    13. STAT 301                 Statistical Analysis I
    14. STAT 401                 Experimental Methods
15. Select 8-12 credits from either Set A or Set B: 8-12
    Set A:
    16. PHYS 211                 General Physics: Mechanics 3
    17. PHYS 212                 General Physics: Electricity and Magnetism
    18. PHYS 213                 General Physics: Fluids and Thermal Physics
    19. PHYS 214                 General Physics: Wave Motion and Quantum
                                   Physics
    Set B:
    20. PHYS 250                 Introductory Physics I 3
    21. PHYS 251                 Introductory Physics II
    22. Select 3 life science credits of the following: 3
    23. BMB 211                  Elementary Biochemistry
    24. BMB 251                  Molecular and Cell Biology I
    25. MICRB 201                Introductory Microbiology
    26. Select 14 additional credits of course work from the Eberly College of
       Science, with at least 9 credits at the 400 level 4
17. Demonstration of second semester proficiency in a single foreign
   language 0-8
    18. SC 295                  Science Co-op Work Experience I 5  1-3
    19. SC 395                  Science Co-op Work Experience II 5  1-3
    20. SC 495                  Science Co-op Work Experience III 5  1-3
    21. ECON 102                Introductory Microeconomic Analysis and Policy 3
    22. ECON 104                Introductory Macroeconomic Analysis and Policy 3
    23. ACCTG 211               Financial and Managerial Accounting for Decision
                                   Making 4
    24. Select supporting courses and related areas selected from the
        program list 4-23

1. The University's General Education requirements in the areas of
   Writing and Speaking (9), Health and Physical Activity (3), Arts (6),
   Humanities (6). The University’s General Education requirements
   in the areas of Quantification, Natural Sciences, and Social and
   Behavioral Sciences will be satisfied by course work listed under
   headings “3” and “6.”
2. These requirements may be double counted in order to satisfy other
   requirements in the program.
3. Course requires a grade of C or better.
4. Only the 9 credits at the 400 level require a grade of C or better.
Students must complete three Eberly College of Science Cooperative Education experiences, including at least one experience which is a full semester in length.

Career Paths
Graduates with a B.S. in Science and a Master’s degree in Business Administration have successfully established careers in the science and business industries. Graduates of this unique integrated undergraduate-graduate program (IUG) are equipped to step into leadership roles instead of the more common entry-level positions of their peers. This accelerates the careers of our graduates, which leads to greater impact and higher earning potential over a lifetime.

Careers
Graduates of the B.S./M.B.A. program have pursued careers in a number of industries including, but not limited to the following:

- Consulting
- Finance
- Healthcare
- Manufacturing
- Marketing
- Medical Devices
- Pharmaceuticals
- Technology

Opportunities for Graduate Studies
For more information on the M.B.A curriculum, please visit the Smeal College of Business website [here](https://mba.smeal.psu.edu).

Program Learning Objectives
1. Students will demonstrate specific understanding of fundamental scientific concepts including, but not limited to, experimental results, theory development, chemical reactions, physical processes, and cellular function.
2. Students will demonstrate a thorough understanding of general and organic chemistry.
3. Students will demonstrate a thorough understanding of biological concepts including cellular organization, genetics, ecology, and physiology.
4. Students will demonstrate ability to retrieve and analyze scientific data.
5. Students will be able to comprehend and critically interpret primary scientific literature.
6. Students will disseminate scientific findings via oral and written communication.
7. Students will apply ethical principles to specific areas of scientific research and scientifically important applications with sociological consequences such as clinical trials, animal testing, and environmental concerns.
8. Students will demonstrate appropriate laboratory skills including scientific technique, maintenance of a laboratory notebook, writing laboratory reports, and adhering to all safety procedures.

Academic Advising
The objectives of the university’s academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee’s unit of enrollment will provide each advisee with a primary academic adviser, the information need to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY [here](http://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy)

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mih10@psu.edu
### Suggested Academic Plan

#### General Science Option at Berks Campus

The course series listed below provides only one of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an Academic Requirements or What If report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

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<th>Credits</th>
<th>Spring</th>
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<td>ENGL 15 or 30‡</td>
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<td>CAS 100A or 100B‡</td>
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<td>Teamwork &amp; Interpersonal Communication Selection</td>
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<td>Life or Math or Physical Science Selection</td>
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* Course requires a grade of C or better for the major
‡ Course requires a grade of C or better for General Education
# Course is an Entrance to Major requirement
† Course satisfies General Education and degree requirement

#### University Requirements and General Education Notes:

- US and IL are abbreviations used to designate courses that satisfy University Requirements (United States and International Cultures).
- W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.
- GWS, GQ, GHW, GN, GA, GH, and GS are abbreviations used to identify General Education program courses. General Education includes Foundations (GWS and GQ) and Knowledge Domains (GHW, GN, GA, GH, GS, and Integrative Studies). Foundations courses (GWS and GQ) require a grade of ‘C’ or better.
- Integrative Studies courses are required for the General Education program. N is the suffix at the end of a course number used to designate an Inter-Domain course and Z is the suffix at the end of a course number used to designate a Linked course.

1. For the Writing Across The Curriculum Requirement, students must complete this through one of the requirements listed above. Consult adviser for details.
2. For Entrance-to-Major requirements, students must complete two (2) courses from the following: BIOL 110, CHEM 110, and PHYS 211.
3. The following courses are offered Spring Semester only: ENGL 202B, PHYS 213, 214.
For PHYS 211, 212, 213, and 214, PHYS 250 and 251 may be substituted. PHYS 250 is offered Fall Semester only. PHYS 251 is offered Spring Semester only.

For Earth & Mineral Sciences Selection, consult adviser for list.

For Life or Math or Physical Science Selection, consult adviser for list.

For Program List Selection, consult adviser for list.

For 400 Level General Selection, consult adviser for list.

For 400 Level Life or Math or Physical Science Selection, consult adviser for list.

For Global, Social & Personal Awareness Selection, consult adviser for list.

For Teamwork & Interpersonal Communication Selection, consult adviser for list.

### Life Science Option at Berks Campus

#### First Year

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<th>Course</th>
<th>Credits</th>
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<tr>
<td>ENGL 15 or 30†</td>
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<td>CAS 100A or 100B†</td>
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<td>MATH 140†‡#</td>
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<td>CHEM 110†‡</td>
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<td>BIOL 220W, 230W, or 240W</td>
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#### Second Year

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#### Third Year

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<tr>
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<tr>
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#### Fourth Year

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### General Education Course

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<tbody>
<tr>
<td></td>
<td>3</td>
<td>General Education Course (GHW)</td>
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</table>

| Total Credits                             | 125     |                                 |         |
|                                          |         |                                 |         |

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2. For Entrance-to-Major requirements, students must complete two (2) courses from the following: BIOL 110, CHEM 110, and PHYS 250.

3. The following courses are offered Fall Semester only: BIOL 220W, 230W, CHEM 202, PHYS 250.

4. The following courses are offered Spring Semester only: BIOL 240W, CHEM 203, ENGL 202B, PHYS 251.

5. For PHYS 250 and 251, PHYS 211, 212, 213, and 214 may be substituted. PHYS 213 and 214 are offered Spring Semester only.

6. For 400 Level Life Science Selection, consult adviser for list.

7. For Program List Selection, consult adviser for list.

8. For 400 Level General Selection, consult adviser for list.

9. For CHEM 210, 212, and 213, CHEM 202 and 203 may be substituted.

10. For Global, Social & Personal Awareness Selection, consult adviser for list.

11. For Teamwork & Interpersonal Communication Selection, consult adviser for list.

### Career Paths

Penn State students with a BS in Science are prepared for a broad range of careers and graduate programs. The solid foundation of science and math prepares students to think critically and scientifically in a range of industries and professions.
Careers
This program often leads to careers in all healthcare professions, including physicians and physician assistants, dentists, optometrists, and podiatrists; laboratory research associates; scientific product representatives and science-based consulting.

Opportunities for Graduate Studies
Many graduates of the Science B.S. program choose to pursue graduate studies (MS and PhD) in the natural sciences. Most often, students gravitate to medically-related fields and life science sub-disciplines for focused graduate training. Students in the legal studies and public policy options may choose law school or master’s in public policy programs.

Professional Resources
- Association of American Medical Colleges (https://www.aamc.org)
- American Association of Colleges of Osteopathic Medicine (https://www.aacom.org)
- American Dental Education Association (http://www.adea.org)
- Association of Schools and Colleges of Optometry (https://optometriceducation.org)
- American Association of Colleges of Podiatric Medicine (http://www.aacpm.org)
- American Academy of Physician Assistants (AAPA) (https://www.aapa.org) Physician Assistant Education Association (http://paeaeonline.org)

Contact
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Luerssen Science Building
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ias1@psu.edu
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epi1@psu.edu
http://abington.psu.edu/science

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epl1@psu.edu

http://altoona.psu.edu/academics/bachelors-degrees/science/request-information

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http://science.psu.edu/sciencebs

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amv12@psu.edu

http://york.psu.edu/academics/baccalaureate/science