SECONDARY EDUCATION, B.S. (BEHREND)

Begin Campus: Any Penn State Campus
End Campus: Erie

Program Description
The following teaching options are available for majors in Secondary Education: Biological Science, Chemistry, Earth and Space Science, English, Environmental Education, General Science, Mathematics, Physics, and Social Studies/Citizenship Education.

The Secondary Education major helps prepare students for middle school and/or high school teaching positions and for other employment in fields related to their content specialties.

Biological Science Teaching Option
Available at the following campuses: University Park
This option enables the graduate to meet all of the academic requirements for the Instructional I certificate for teaching at the secondary-school level, which is issued by the Pennsylvania Department of Education.

Chemistry Teaching Option
Available at the following campuses: University Park
This option enables the graduate to meet all of the academic requirements for the Instructional I certificate for teaching at the secondary-school level, which is issued by the Pennsylvania Department of Education.

Earth and Space Science Teaching Option
Available at the following campuses: University Park
This option enables the graduate to meet all of the academic requirements for the Instructional I certificate for teaching at the secondary-school level, which is issued by the Pennsylvania Department of Education.

English Teaching Option
Available at the following campuses: University Park
This option enables the graduate to meet all of the academic requirements for the Instructional I certificate for teaching at the secondary-school level, which is issued by the Pennsylvania Department of Education.

Environmental Education Teaching Option
Available at the following campuses: University Park
This option enables the graduate to meet all of the academic requirements for a Pennsylvania teacher certification in Environmental Education when completed in conjunction with another secondary education teaching option (i.e., Biological Science Teaching option). The total number of credits required will depend primarily on that other option.

General Science Teaching Option
Available at the following campuses: University Park
This option enables the graduate to meet all of the academic requirements for the Instructional I certificate for teaching General Science at the secondary-school level, which is issued by the Pennsylvania Department of Education. This option may only be completed in conjunction with another secondary education option (e.g., Biology); the total number of credits required will depend primarily on that other option.

Mathematics Teaching Option
Available at the following campuses: Erie, University Park
This option enables the graduate to meet all of the academic requirements for the Instructional I certificate for teaching at the secondary-school level, which is issued by the Pennsylvania Department of Education.

Physics Teaching Option
Available at the following campuses: University Park
This option enables the graduate to meet all of the academic requirements for the Instructional I certificate for teaching at the secondary-school level, which is issued by the Pennsylvania Department of Education.

Social Studies Teaching Option
Available at the following campuses: University Park
This option enables the graduate to meet all of the academic requirements for the Instructional I certificate for teaching social studies at the secondary-school level, which is issued by the Pennsylvania Department of Education.

What is Secondary Education?
The Secondary Education (SECED) major prepares graduates to teach at the middle school or high school level (grades 7-12) in English, Mathematics, Social Studies (which includes history, geography, government, and the social sciences), or a science subject (Biology, Chemistry, Earth & Space Science, or Physics). The program combines on-campus course work with clinical experiences in schools; graduates are eligible to apply for teacher licensure through the Pennsylvania Department of Education.

You Might Like This Program If...
- You are committed to public service and working with young people, and you appreciate that effective teaching demands both mastery of subject matter knowledge and understanding learners and communities.
- In your subject-matter studies, you tend to find yourself asking: How do we know that? Is there a better way to describe it? What are we overlooking? How could I help others understand this too?

MORE INFORMATION ABOUT SECONDARY EDUCATION (https://ed.psu.edu/academics/departments/department-curriculum-and-instruction/undergraduate-teacher-education-pk-12/secondary-education-7-12/)
Entrance to Major
Baccalaureate degree candidates must meet the following requirements 1-3 by the end of their third semester:

1. A minimum cumulative grade point average of 3.00
2. Documentation of at least 80 hours of volunteer or paid education work experience with learners of the age group the candidate plans to teach. Candidates for Secondary Education must document 40 of these hours with learners who come from backgrounds that are different from the candidate's.

Requirements 4-9 must be met by the end of the fourth semester when students typically participate in the Entrance-to-Major process.

4. A grade of "C" or better in all specified courses.
5. Completion of an early field experience specified by the certification program.
6. Completion of a core of Education courses specified by the certification program.
7. Completion of additional credits as specified by the certification program.
8. Completion of at least 48 semester credit hours, including ENGL 15 or ENGL 30H, three credits of literature, and six credits of quantification.
9. Approval from the professional education adviser or the head of the pertinent certification program.

Degree Requirements
For the B.S. degree in Secondary Education with an option in Biological Science Teaching, a minimum of 126 credits is required; with an option in Chemistry Teaching, a minimum of 126 credits is required; with an option in Earth and Space Science Teaching, a minimum of 123 credits is required; with an option in English Teaching, a minimum of 126 credits is required; with an option in Environmental Education Teaching and a cohort option, a minimum of 123 credits is required; with an option in General Science Teaching and a cohort option, a minimum of 121 credits is required; with an option in Mathematics Teaching, a minimum of 132 credits is required; with an option in Physics Teaching, a minimum of 121 credits is required; with an option in Social Studies Teaching, a minimum of 129-132 credits is required. (See also Teacher Education Programs (https://ed.psu.edu/academics/teacher-testing-certification/));

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
<td>45</td>
</tr>
<tr>
<td>Electives</td>
<td>0-20</td>
</tr>
<tr>
<td>Requirements for the Major</td>
<td>83-111</td>
</tr>
</tbody>
</table>

12-27 of the 45 credits for General Education are included in the Requirements for the Major. This includes: Biological Science Teaching option, Chemistry Teaching option, Earth and Space Science Teaching option, Environmental Education Teaching option, General Science Teaching option, and Physics Teaching option--6 credits of GH courses; 9 credits of GN courses, 6 credits of GS courses; 6 credits of GQ courses. English Teaching option--0-6 credits of GA courses; 6 credits of GH courses; 6 credits of GS courses, 0-3 credits of GWS. Mathematics Teaching option--6 credits of GH courses; 6 credits of GS courses; 6 credits of QG courses. Social Studies Teaching option--6 credits of GH courses; 3 credits of GN courses; 6 credits of GS courses. Six of these credits for any option may also satisfy the Integrative Studies requirement.

Requirements for the Major
A grade of C or better per course is required for teacher certification.

Common Requirements for the Major (All Options)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescribed Courses: Require a grade of C or better for teacher certification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CI 280</td>
<td>Introduction to Teaching English Language Learners</td>
<td>3</td>
</tr>
<tr>
<td>CI 295</td>
<td>Introductory Field Experience for Teacher Preparation</td>
<td>2</td>
</tr>
<tr>
<td>CI 495C</td>
<td>Clinical Application of Instruction – Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>CI 495E</td>
<td>Practicum in Student Teaching--Secondary Education</td>
<td>15</td>
</tr>
<tr>
<td>EDPSY 14</td>
<td>Learning and Instruction</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH 100</td>
<td>Introductory Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SPLED 400</td>
<td>Inclusive Special Ed Foundations: Legal, Characteristics, Collaboration, Assessment, and Management</td>
<td>4</td>
</tr>
<tr>
<td>SPLED 403B</td>
<td>Evidence-Based Methods for Teaching Secondary Students with Disabilities in Inclusive Settings</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional Courses
Additional Courses: Require a grade of C or better for teacher certification
PSYCH 412 | Adolescence or HDFS 239 Adolescent Development

Supporting Courses and Related Areas
Supporting Courses and Related Areas: Require a grade of C or better for teacher certification
Select 3 credits of GH courses from Literature Selection
Select 3 credits of the following:
- EDTHP 115 | Education in American Society
- EDTHP 115A | Competing Rights: Issues in American Education
- 3 credits at the 400 level of any EDTHP course

Requirements for the Option
Requirements for the Option: Require a grade of C or better for teacher certification
Select an option

Requirements for the Option
Biological Science Teaching Option (63-66 credits)
Available at the following campuses: University Park

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Prescribed Courses: Require a grade of C or better for teacher certification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 110</td>
<td>Biology: Basic Concepts and Biodiversity</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 220W</td>
<td>Biology: Populations and Communities</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 240W</td>
<td>Biology: Function and Development of Organisms</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 110</td>
<td>Chemical Principles I</td>
<td>3</td>
</tr>
<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>
</tbody>
</table>
MATH 140  Calculus With Analytic Geometry I  4
SCIED 411W  Teaching Secondary Science I  3
SCIED 412  Teaching Secondary Science II  3

Additional Courses

Additional Courses: Require a grade of C or better for teacher certification

BMB 251  Molecular and Cell Biology I  4-6
& BMB 252  and Molecular and Cell Biology II
or BIOL 230W  Biology: Molecules and Cells

MATH 141 or 4 credits of 200-level STAT GQ courses  4
Select one of the following:  3-4
ANTH 21  Introductory Biological Anthropology
ANTH 460  Human Genetics
BIOL 427  Evolution
GEOSC 204  Geobiology
GEOSC 424  Paleontology and Fossils

Select one of the following:  8
PHYS 211  General Physics: Mechanics
& PHYS 212  and General Physics: Electricity and Magnetism
PHYS 250  Introductory Physics I
& PHYS 251  and Introductory Physics II

Select 6 credits of the following:  6
BMB 211  Elementary Biochemistry
BMB 212  Elementary Biochemistry Laboratory
BMB 401  General Biochemistry
BMB 402  General Biochemistry
CHEM 202  Fundamentals of Organic Chemistry I
CHEM 203  Fundamentals of Organic Chemistry II
CHEM 210  Organic Chemistry I
CHEM 212  Organic Chemistry II
CHEM 213  Laboratory in Organic Chemistry

Supporting Courses and Related Areas

Supporting Courses and Related Areas: Require a grade of C or better for teacher certification

Select 8 credits of 300-level or 400-level BIOL or biological fields  8

Note 1: Students may complete multiple science teaching options concurrently by completing all of each option’s requirements. The six science teaching options are: Biology, Chemistry, Earth and Space Science, Environmental Education, General Science, and Physics.

Note 2: Red Cross certification in First Aid and CPR (or their equivalent) must be earned for science certification.

Chemistry Teaching Option (55-60 credits)

Available at the following campuses: University Park

Code  Title  Credits
Prescribed Courses

Prescribed Courses: Require a grade of C or better for teacher certification

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

MATH 140  Calculus With Analytic Geometry I  4
MATH 141  Calculus with Analytic Geometry II  4
PHYS 211  General Physics: Mechanics  4
PHYS 212  General Physics: Electricity and Magnetism  4
SCIED 411W  Teaching Secondary Science I  3
SCIED 412  Teaching Secondary Science II  3

Additional Courses

Additional Courses: Require a grade of C or better for teacher certification

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

Select 9 credits from 400 level CHEM or related field  9

Supporting Courses and Related Areas

Supporting Courses and Related Areas: Require a grade of C or better for teacher certification

Select 6-9 credits in CHEM or chemistry-related fields at the 200 level or higher (e.g., BMB 211 and BMB 212, BMB 251, BMB 252, MICRB 251, FDSC 400, ANSC 301, NUTR 251, CHEM, CHE)

Note 1: Students may complete multiple science teaching options concurrently by completing all of each option’s requirements. The six science teaching options are: Biology, Chemistry, Earth and Space Science, Environmental Education, General Science, and Physics.

Note 2: Red Cross certification in First Aid and CPR (or their equivalent) must be earned for science certification.

Earth and Space Science Teaching Option (60-63 credits)

Available at the following campuses: University Park

Code  Title  Credits
Prescribed Courses

Prescribed Courses: Require a grade of C or better for teacher certification

ASTRO 10  Elementary Astronomy  2
ASTRO 11  Elementary Astronomy Laboratory  1
BIOL 110  Biology: Basic Concepts and Biodiversity  4
BIOL 220W  Biology: Populations and Communities  4
CHEM 110  Chemical Principles I  3
CHEM 111  Experimental Chemistry I  1
EARTH 100  Environment Earth  3
MATH 140  Calculus With Analytic Geometry I  4
MATH 141  Calculus with Analytic Geometry II  4
SCIED 411W  Teaching Secondary Science I  3
SCIED 412  Teaching Secondary Science II  3

Additional Courses

Additional Courses: Require a grade of C or better for teacher certification

GEOSC 1  Physical Geology  3
or GEOSC 20  Planet Earth  3
GEOSC 21  Earth and Life: Origin and Evolution  3-4
or GEOSC 204  Geobiology  3
Select one of the following:  
- PHYS 211 & PHYS 212: General Physics: Mechanics and General Physics: Electricity and Magnetism  
- PHYS 250 & PHYS 251: Introductory Physics I and Introductory Physics II

Select 3-4 credits from the following:  
- METEO 3: Weather Revealed: Introductory Meteorology  
- METEO 201: Introduction to Weather Analysis  
- METEO 300: Fundamentals of Atmospheric Science

Select 3-4 credits from the following:  
- BIOL 435: Ecology of Lakes and Streams  
- BIOL 482: Coastal Biology  
- GEOSC 40: The Sea Around Us  
- GEOSC 440: Marine Geology

Supporting Courses and Related Areas

Supporting Courses and Related Areas: Require a grade of C or better for teacher certification

Select 8 credits of 200-400 level from EARTH, GEOSC, METEO, ASTRO, other earth science field, or BIOL 427

Note 1: Students may complete multiple science teaching options concurrently by completing all of each option's requirements. The six science teaching options are: Biology, Chemistry, Earth and Space Science, Environmental Education, General Science, and Physics.

Note 2: Red Cross certification in First Aid and CPR (or their equivalent) must be earned for science certification.

English Teaching Option (40-42 credits)

Available at the following campuses: University Park

Note: Must complete at least 3 credits of IL and 3 credits of US Cultures selections.

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<thead>
<tr>
<th>Code</th>
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</thead>
<tbody>
<tr>
<td>CI 492</td>
<td>Identities, Power and Perceptual Pedagogies in Teaching and Learning</td>
<td>3</td>
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<tr>
<td>LLED 411</td>
<td>Teaching Language Arts In Secondary Schools I</td>
<td>3</td>
</tr>
<tr>
<td>LLED 412W</td>
<td>Teaching Language Arts in Secondary Schools II</td>
<td>3</td>
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<tr>
<td>LLED 420</td>
<td>Teaching Adolescent Literature and Literacy</td>
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</tr>
<tr>
<td>LLED 421</td>
<td>Teaching Writing in Secondary Schools</td>
<td>3</td>
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<tr>
<td>LLED 422</td>
<td>Teaching the Young Adult Literature Workshop</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional Courses

Additional Courses: Require a grade of C or better for teacher certification

Select 1-3 credits of Grammar from the following:  
- APLNG 484: Discourse-Functional Grammar  
- COMM 160: Basic News Writing Skills  
- Select 3 credits of Speech and Oral Performance from the following:  
  - CAS 100: Effective Speech  
  - CAS 280W: Storytelling and Speaking  
  - THEA 102: Fundamentals of Acting  
  - Select 3 credits of Shakespeare from the following:  
    - ENGL 129: Shakespeare

Environmental Education Teaching Option (55-58 credits)

Available at the following campuses: University Park

Select 6 credits of British and American Literature from the following:  
- ENGL 221: British Literature to 1798  
- ENGL 222: British Literature from 1798  
- ENGL 231: American Literature to 1865  
- ENGL 232: American Literature from 1865

Select 3 credits of Multicultural Literature in English from the following:  
- CMLIT/LTNST 403: Latina/o Literature and Culture  
- ENGL/AMST 135: Alternative Voices in American Literature  
- ENGL/AFAM 139: African American Literature  
- ENGL/WMNST 194: Women Writers  
- ENGL/AAS 428: Asian American Literatures  
- ENGL 431/AMST 475: Black American Writers  
- ENGL/WMNST 462: Reading Black, Reading Feminist  
- ENGL/AFAM 466: African American Novel I  
- ENGL/AFAM 467: African American Novel II  
- ENGL/AFAM 468: African American Poetry  
- ENGL/WMNST 490: Women Writers and Their Worlds  
- ENGL 492/AMST 476/WMNST 491: American Women Writers

Select 3 credits of Nonprint Literature from the following:  
- AFAM/ENGL 235: From Folk Shouts and Songs to Hip Hop Poetry  
- CMLIT 415: World Graphic Novels  
- COMM 150N: The Art of the Cinema  
- COMM 250: Film History and Theory  
- COMM 411: Cultural Aspects of the Mass Media  
- ENGL 136: The Graphic Novel  
- THEA 100: The Art of the Theatre  
- THEA 105: Introduction to Theatre

Select 3 credits of Writing from the following:  
- ENGL 50: Introduction to Creative Writing  
- ENGL 212: Introduction to Fiction Writing  
- ENGL 213: Introduction to Poetry Writing  
- ENGL 214: Introduction to Creative Nonfiction Writing  
- ENGL 215: Introduction to General Nonfiction Writing
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<td>Introductory Chemistry</td>
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<td>Calculus With Analytic Geometry I</td>
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<td>Teaching Secondary Science I</td>
<td>3</td>
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<tr>
<td>SCIED 412</td>
<td>Teaching Secondary Science II</td>
<td>3</td>
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<tr>
<td>SCIED 457</td>
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<td>3</td>
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<tr>
<td><strong>Additional Courses</strong></td>
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<tr>
<td>Additional Courses: Require a grade of C or better for teacher certification</td>
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<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>CHEM 20 &amp; CHEM 21 Environmental Chemistry and Environmental Chemistry Laboratory</td>
<td></td>
<td></td>
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<tr>
<td>CHEM 110 &amp; CHEM 111 Chemical Principles I and Experimental Chemistry I</td>
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<td></td>
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<tr>
<td>Select one of the following:</td>
<td></td>
<td>3-4</td>
</tr>
<tr>
<td>BIOL 240W</td>
<td>Biology: Function and Development of Organisms</td>
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<tr>
<td>WFS 407</td>
<td>Ornithology</td>
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<tr>
<td>WFS 408</td>
<td>Mammalogy</td>
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<tr>
<td><strong>Supporting Courses and Related Areas</strong></td>
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<tr>
<td>Supporting Courses and Related Areas: Require a grade of C or better for teacher certification</td>
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</tr>
<tr>
<td>Select two courses (6-8 credits) in environmental law, economics, management and policy (e.g., ECON 428, ERM 411, ERM 412, ERM 413W, WFS 410, WFS 447W, WFS 463W)</td>
<td>6-8</td>
<td></td>
</tr>
<tr>
<td>Select 4 credits of an environmentally related course in Science Technology and Society (e.g., STS 100, STS 460)</td>
<td>4</td>
<td></td>
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<tr>
<td>Select at least 14 credits from the cohort Teaching option</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

1 This option may only be completed in conjunction with another secondary teaching option, such as the Biological Science Teaching option.

Note 1: Students may complete multiple science teaching options concurrently by completing all of each option's requirements. The six science teaching options are: Biology, Chemistry, Earth and Space Science, Environmental Education, General Science, and Physics. Options may only be completed in conjunction with another secondary teaching option, such as Biology. Note 2: Students may complete multiple science teaching options concurrently by completing all of each option's requirements. The six science teaching options are: Biology, Chemistry, Earth and Space Science, Environmental Education, General Science, and Physics. Options may only be completed in conjunction with another secondary teaching option, such as Biology.

Note 3: Red Cross certification in First Aid and CPR (or their equivalent) must be earned for science certification.

**Mathematics Teaching Option (57-59 credits)**

Available at the following campuses: Erie, University Park

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Prescribed Courses</strong></td>
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<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>MATH 140</td>
<td>Calculus With Analytic Geometry I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 141</td>
<td>Calculus with Analytic Geometry II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 220</td>
<td>Matrices</td>
<td>2-3</td>
</tr>
<tr>
<td>MATH 310</td>
<td>Elementary Combinatorics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 311W</td>
<td>Concepts of Discrete Mathematics</td>
<td>3-4</td>
</tr>
<tr>
<td>MATH 312</td>
<td>Concepts of Real Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 414</td>
<td>Introduction to Probability Theory</td>
<td>3</td>
</tr>
<tr>
<td>MATH 471</td>
<td>Geometry for Teachers</td>
<td>4</td>
</tr>
<tr>
<td>MTHED 411</td>
<td>Teaching Secondary Mathematics I</td>
<td>3</td>
</tr>
<tr>
<td>MTHED 412W</td>
<td>Teaching Secondary Mathematics II</td>
<td>3</td>
</tr>
<tr>
<td>MTHED 427</td>
<td>Teaching Mathematics in Technology-Intensive Environments</td>
<td>3</td>
</tr>
<tr>
<td><strong>Additional Courses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Courses: Require a grade of C or better for teacher certification</td>
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<td></td>
</tr>
<tr>
<td>CMPSC 101</td>
<td>Introduction to Programming</td>
<td>3</td>
</tr>
<tr>
<td>or CMPSC 121</td>
<td>Introduction to Programming Techniques</td>
<td></td>
</tr>
<tr>
<td>MATH 231 &amp; MATH 232</td>
<td>Calculus of Several Variables and Integral Vector Calculus</td>
<td>4</td>
</tr>
<tr>
<td>or MATH 230</td>
<td>Calculus and Vector Analysis</td>
<td></td>
</tr>
</tbody>
</table>
Secondary Education, B.S. (Behrend)

MATH 435  Basic Abstract Algebra  3
or MATH 470  Algebra for Teachers

MATH 436  Linear Algebra  3
or MATH 441  Matrix Algebra

Select one of the following:  3

- MATH 415  Introduction to Mathematical Statistics
- STAT 401  Experimental Methods

3 credits of MTHED from program list

Supporting Courses and Related Areas

Supporting Courses and Related Areas: Require a grade of C or better

Select 6 credits from 400-level MATH or MTHED courses  6

Physics Teaching Option (55-62 credits)

Available at the following campuses: University Park

MATH 140  Calculus With Analytic Geometry I  4
or MATH 141  Calculus with Analytic Geometry II  4

Select one of the following:  1-4

- PHYS 402  Electronics for Scientists
- PHYS 457  Intermediate Optics

Note 1: Students may complete multiple science teaching options concurrently by completing all of each option's requirements. The six science teaching options are: Biology, Chemistry, Earth and Space Science, Environmental Education, General Science, and Physics.

Note 2: Red Cross certification in First Aid and CPR (or their equivalent) must be earned for science certification.

Social Studies Teaching Option (57 credits)

Available at the following campuses: University Park

A grade of C or better per course is required for teacher certification.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ECON 104</td>
<td>Introductory Macroeconomic Analysis and Policy</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 30N</td>
<td>Environment and Society in a Changing World</td>
<td>3</td>
</tr>
<tr>
<td>HIST 20</td>
<td>American Civilization to 1877</td>
<td>3</td>
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<tr>
<td>HIST 21</td>
<td>American Civilization Since 1877</td>
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<tr>
<td>PLSC 1</td>
<td>American Politics: Principles, Processes and Powers</td>
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<td>SSED 411</td>
<td>Teaching Secondary Social Studies I</td>
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<tr>
<td>SSED 412W</td>
<td>Teaching Secondary Social Studies II</td>
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Additional Courses

Additional Courses: Require a grade of C or better for teacher certification

HIST 1  Western Civilization I  3
or HIST 10  World History to 1500  3
or HIST 11  World History since 1500  3

Select 9 credits of the following:  9

- ANTH 45N  Cultural Diversity: A Global Perspective
- ECON 102  Introductory Microeconomic Analysis and Policy
- GEOG 6N  Maps and the Geospatial Revolution
- PLSC 3  Comparing Politics around the Globe
- PLSC 14  International Relations
- SOC 1  Introductory Sociology

Supporting Courses and Related Areas

Supporting Courses and Related Areas: Require a grade of C or better for teacher certification

Select 6 credits of 400-level History  6

Select one concentration:  15

Citizenship Education

Select 6 credits of History at the 100-level or above

Select 3 credits of the following:

- ANTH 45N  Cultural Diversity: A Global Perspective
- SOC 1  Introductory Sociology

Select 3 credits of the following:

- ECON 102  Introductory Microeconomic Analysis and Policy
- PLSC 3  Comparing Politics around the Globe
- PLSC 14  International Relations

Select 3 credits of the following:

- GEOG 6N  Maps and the Geospatial Revolution
- GEOG 10  Physical Geography: An Introduction
- GEOG 20  Human Geography: An Introduction

Civics and Government

PLSC 3  Comparing Politics around the Globe
PLSC 14  International Relations
Select 3 credits of the following:

- PLSC 7N: Contemporary Political Ideologies
- PLSC 10: Scientific Study of Politics
- PLSC 17N: Introduction to Political Theory

Select 6 credits of 400-level Political Science

Select 3 credits of the following:

- CAMS 1: Greek and Roman Literature
- CAMS 4: Jewish and Christian Foundations
- CAMS 5: Ancient Mediterranean Civilizations

Select 3 credits of 100-level Classics and Ancient Mediterranean Studies

Select 3 credits from the following:

- CAMS 1: Greek and Roman Literature
- CAMS 4: Jewish and Christian Foundations
- CAMS 5: Ancient Mediterranean Civilizations

Select 3 credits of Classics and Ancient Mediterranean Studies below the 400 level

Select 6 credits of 400-level Classics and Ancient Mediterranean Studies

**Economics**

- ECON 102: Introductory Microeconomic Analysis and Policy
- ECON 302: Intermediate Microeconomic Analysis
- ECON 304: Intermediate Macroeconomic Analysis

Select 6 credits of 400-level Economics

**Geography**

Select 9 credits of Geography below the 400 level

Select 6 credits of 400-level Geography

**Holocaust and Genocide Studies**

- HIST/JST 121: History of the Holocaust 1933-1945

Select 6 credits from the following:

- CMLT/ENGL/JST 128N: The Holocaust in Film and Literature
- HIST/JST 143N: History of Fascism and Nazism
- HIST/JST 195: Genocide in Global perspectives: Twentieth Century and beyond

Select 6 credits from the following:

- HIST/JST 426: Holocaust
- HIST/JST/WMNST 439: Women and the Holocaust
- JST/PLSC 450H: Genocide and Tyranny
- ASIA/HIST 457/JST 474: Hiroshima & the Holocaust in History and Memory
- JST/PHIL/RLST 478: Ethics After the Holocaust

**Social Sciences**

Select 9 credits of Anthropology, Psychology, and/or Sociology below the 400 level

Select 6 credits of 400-level Anthropology, Psychology, and/or Sociology

---

**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

---

Note 1: Courses taken to meet Additional Courses and other Supporting Courses and Related Areas requirements cannot also be applied to the concentration. Different courses need to be selected for the concentration and Additional Courses and other Supporting Courses and Related Areas requirements.
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.

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 needed to plan the chosen program of study, and referrals to other specialized resources.

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

Erie
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jls982@psu.edu

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College of Education
Advising and Certification Center
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University Park, PA 16802
814-865-0488
ed@admissions.psu.edu

Suggested Academic Plan
The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2023-24 academic year. To access previous years’ suggested academic plans, please visit the archive (https://bulletins.psu.edu/undergraduate/archive/) to view the appropriate Undergraduate Bulletin edition (Note: the archive only contains suggested academic plans beginning with the 2018-19 edition of the Undergraduate Bulletin).

Mathematics Teaching Option: Secondary Education, B.S. at Erie 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.

First Year

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<td>MATH 230*#</td>
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<td>MATH 311W³</td>
<td>EDTHP 115A (Satisfies US Culture Requirement)*†</td>
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<td>STAT 301 or STAT 318³</td>
<td>CI 295³</td>
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<td>EDPSY 14*#</td>
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<td>CI 280³†</td>
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Third Year

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<td>MTHED 427³</td>
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<td>SPLED 400³</td>
<td>MATH 310 or 436³</td>
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<td>STAT 414 (or General Education Course (GA))³†</td>
<td>SPLED 403B³</td>
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<td>400-level MATH Selection³</td>
<td>PSYCH 412 or HDFS 239³</td>
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Fourth Year

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MATH 435 or 427 and 428

Total Credits 134-136

* 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 Cultural Diversity 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.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of ‘C’ or better.

1 Prerequisite: satisfactory performance on the Math placement tests - i.e. placement beyond the level of MATH 22; or CHEM 101 and MATH 22 or MATH 41

Program Notes

1.) There are additional entrance to major requirements of PRAXIS Core Exam, 40-hour Work Experience, 3.0 GPA.

2.) Additional requirements must be met to be certified - please meet with adviser regularly.

Academic Advising Notes

1.) Students interested in dual majoring in MTHBC B.S. alongside SECBC B.S. should carefully select their General Education (GN) courses to fulfill math major requirements. Please meet with adviser to schedule.

2.) Several courses above are taught every other year:
   - the following are taught in fall of odd years: MATH 435, STAT 414, MATH 455, MATH 412
   - the following are taught in fall of even years: MATH 427, MATH 428, MATH 465, MATH 455
   - the following is taught in spring of odd years: MATH 436, MATH 421, MATH 449
   - the following is taught in spring of even years: MATH 310, MATH 456, MATH 429, MATH 482

3.) Must complete at least 3 credits of IL and 3 credit of US Cultures selections. EDTHP 115A satisfies US Cultures. Either the GA or Literature GH class can be chosen to satisfy the IL requirement.

Approved Literature (GH) Selection:

CMLIT 1, CMLIT 2, CMLIT 3, CMLIT 4, CMLIT 5, CMLIT 6, CMLIT 10, CMLIT 11, CMLIT 83S, CMLIT 100, CMLIT 101, CMLIT 105, CMLIT 106, CMLIT 107, CMLIT 108, CMLIT 110, CMLIT 111, CMLIT 120, CMLIT 141, CMLIT 153, ENGL 1, ENGL 2, ENGL 103, ENGL 104, ENGL 129, ENGL 132, ENGL 133, ENGL 134, ENGL 135, ENGL 139, ENGL 140, ENGL 145, ENGL 180, ENGL 182, ENGL 184, ENGL 185, ENGL 189, ENGL 191, ENGL 192, ENGL 194, ENGL 200, ENGL 201, ENGL 221, ENGL 222,
Chemistry Pre-Education Option: Secondary Education, B.S. at Erie 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.

First Year

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<td>MATH 230</td>
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Third Year

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<td>PSYCH 212 or HDFS 129</td>
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Fourth Year

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Total Credits 121-122

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University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity 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.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of ‘C’ or better.

Program Notes

1.) Students who have not met the admission requirement of two units of a foreign language must complete a college level—one foreign language within their first 60 credits.

2.) Scheduling patterns for courses not taught each semester: Some major requirement will be offered only once a year or every other year depending on demand:

Fall only courses include: CHEM 210, CHEM 227, CHEM 316, CHEM 400, CHEM 413, CHEM 450, CHEM 472

Spring only courses include: CHEM 212, CHEM 213, CHEM 431W, CHEM 440, CHEM 452

3.) All first-year baccalaureate degree candidates are required to complete, during the first academic year, a seminar course.

4.) 18 credits of supporting courses are required for the general option. There are a variety of courses you may choose from. The list given below is not completely inclusive. If there is a new course or a technical course you feel you would like to include under this selection, please speak with your Academic Adviser or the Academic Coordinator.

Supporting Courses List

EDSGN 100S
BIOL 110 or higher
CHNS 1, CHNS 2, CHNS 3
CMPSC any course
CMPEN any course
FR 1, FR 2, FR 3
GER 1, GER 2, GER 3
MATH 200-level or higher
MICRB 201 or MICRB 202
PHYS 213, PHYS 214, PHYS 237, or any 400-level course
PLET 206W or higher
SPAN 1, SPAN 2, SPAN 3
STAT 250 or higher

The following select courses can also be used as a supporting course under the designated CHMBC option.

Pre-Education Supporting Course List

PSYCH 301W
PSYCH 253
PSYCH 256
PSYCH 445
PSYCH 412
PSYCH 416
PHIL 10

5.) **Non-approved courses** - Some courses are not appropriate for a chemistry major and will not count toward degree requirements. These courses include, but are not limited to, those listed below:

Non-approved Courses List

- BISC 1, BISC 2, BISC 3
- BMB 1
- CAS 126
- CHEM 1, CHEM 3, CHEM 20, CHEM 21, CHEM 101, CHEM 202, CHEM 203
- CMPSC 100
- ENGL 4, ENGL 5
- MATH 1, MATH 2, MATH 4, MATH 37, MATH 38
- PHYS 1, PHYS 150, PHYS 151, PHYS 250, PHYS 251
- STAT 100
General Science Pre-Certification Teaching Option: Secondary Education, B.S. at Erie 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.

First Year

<table>
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<th>Semester</th>
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<tr>
<td>Fall</td>
<td>CHEM 110*†</td>
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<tr>
<td>Fall</td>
<td>CHEM 111†</td>
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<td>Fall</td>
<td>MATH 140††</td>
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<td>Fall</td>
<td>ENGL 15 or 30H‡</td>
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<td>Fall</td>
<td>PSU 7</td>
<td>1</td>
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Second Year

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<tr>
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<td>Fall</td>
<td>BIOL 220W or 230W (or BIOL 240W)</td>
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<td>PHYS 250 or 211*</td>
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Third Year

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<tr>
<th>Semester</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>Fall</td>
<td>PHYS 213 or PHYS 214 or Elective (if following PHYS 250/251 track)†</td>
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<tr>
<td></td>
<td>ENGL 202A or 202B (or ENGL 202C or ENGL 202D)††</td>
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</tr>
<tr>
<td></td>
<td>ASTRO 291 or GEOG 10</td>
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<td>World Language Level 1</td>
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<td>400-Level Course Science Supporting List†</td>
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Fourth Year

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<th>Courses</th>
<th>Credits</th>
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<td>Fall</td>
<td>STAT 250 or 200 (or MATH 230 or CMPSC 122)</td>
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<td>400-Level Course Program List†</td>
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<tr>
<td></td>
<td>METEO 3†</td>
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General Education Course

<table>
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<th>Credits</th>
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<table>
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<th>Total Credits 124-126</th>
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<tbody>
<tr>
<td>* Course requires a grade of C or better for the major</td>
</tr>
<tr>
<td>‡ Course requires a grade of C or better for General Education</td>
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<tr>
<td># Course is an Entrance to Major requirement</td>
</tr>
<tr>
<td>† Course satisfies General Education and degree requirement</td>
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University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity 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.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of ‘C’ or better.

Program Notes

1.) Students who have not met the admission requirement of two units of a high school world language must complete a college level-one world language within their first 60 credits.

2.) Scheduling patterns for courses not taught each semester - some major requirements will be offered only once every every other year.

- Fall only courses include: CMPSC 455, MATH 455, PHYS 402, PHYS 414
- Spring only courses include: CMPSC 456, ME 428, MATH 456, PHYS 410, PHYS 420, PHYS 421W, PHYS 458

3.) All first-year baccalaureate degree candidates are required to complete, during the first academic year, a seminar course

4.) Students must earn at least a grade of C in each 300- and 400-level prescribed, additional, and supporting course.

5.) For Science Supporting Courses, students must select 18 credits, with at least 9 credits at the 400-level, in one of the areas: computer sciences, life sciences, mathematical sciences, or physical sciences.

6.) Students must select 18-22 credits, with at least 6 credits at the 400-level, from the program list.

7.) Students must complete at least 3 credits of a writing across the curriculum credits. Note that only one credit of each of the BIOL 220W, BIOL 230W, and BIOL 240W courses can be used to meet this requirement.

Advising Notes

Program List Courses

Students may select courses from nearly the entire range of the University’s course offerings, excluding the following:

- BIOL 11, BIOL 12
- BISC 1, BISC 2, BISC 3, BISC 4
- BMB 1
- CAS 126
- CHEM 1, CHEM 3, CHEM 101, CHEM 108
- CMPSC 1, CMPSC 100, CMPSC 110
- ENGL 4, ENGL 5, ESL 4
- LLED 5, LLED 10
MATH 1, MATH 2, MATH 3, MATH 4, MATH 21, MATH 26, MATH 30,
MATH 35, MATH 36, MATH 37, MATH 38, MATH 40, MATH 81, MATH 82,
MATH 83, MATH 110, MATH 111, MATH 200
MICRB 106, MICRB 107, MICRB 120, MICRB 121A, MICRB 121B,
MICRB 150, and MICRB 151x
PHYS 1, PHYS 150, PHYS 151, PHYS 126
STAT 100

Science Supporting Courses List
Computer Science include CENBD and CMPSC courses
Geosciences include GEOG, GEOSC, MATSC, and MATSE courses
Life Sciences include BIOL, BMB, and MICRB courses
Mathematical Sciences include MATH and STAT courses
Physical Sciences include ASTRO, CHEM, and PHYS courses
Earth and Space Pre-Certification Teaching Option: Secondary Education, B.S. at Erie Campus

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**First Year**

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 110 <strong>#†</strong></td>
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<td>CHEM 112 <strong>#†</strong></td>
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<tr>
<td>CHEM 111 †</td>
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<td>CHEM 113 †</td>
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<tr>
<td>MATH 140 ††</td>
<td>4</td>
<td>MATH 141 ††</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 15 or 30H ‡</td>
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<td>BIOL 110S *#†</td>
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<td>PSU 7</td>
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<tr>
<th>Second Year</th>
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<tbody>
<tr>
<td>CAS 100 ‡</td>
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<td>GEOSC 2</td>
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<td>BIOL 220W or 230W (or BIOL 240W)</td>
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<td>CMPSC 121 †</td>
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<td>PHYS 250 or 211 †</td>
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<td>3</td>
<td>GEOSC 40</td>
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<td>ASTRO 291 or GEOS 10</td>
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<td>ASTRO 292</td>
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MCRB 106, MCRB 107, MCRB 120, MCRB 121A, MCRB 121B, MCRB 150, and MCRB 151x
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Mathematical Sciences include MATH and STAT courses
Physical Sciences include ASTRO, CHEM, and PHYS courses

Career Paths
Our graduates teach in public and private schools in Pennsylvania, elsewhere in the U.S., and around the world. Education is a profession, and all teachers are expected to continue studying and developing new skills throughout their careers. In most U.S. states, teacher certification is a multi-stage process, with graduate study beyond a bachelor's degree expected early in a teacher's career. Graduates of this program who work in public schools usually go on to earn a master's degree. Alumni who wish to continue educational studies at the graduate level through Penn State can do so at University Park and through the University's World Campus.

Careers
In addition to resources like the College's Advising and Certification Center and Penn State Career Services, the University hosts large education career fairs in both the fall and spring semesters, which bring recruiters to campus from throughout Pennsylvania and the United States.

MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES OF THE SECONDARY EDUCATION PROGRAM (https://studentaffairs.psu.edu/career/)

MORE INFORMATION ABOUT OPPORTUNITIES FOR GRADUATE STUDIES (https://ed.psu.edu/academics/departments/department-curriculum-and-instruction/graduate-studies-program-curriculum-and-instruction/)

Professional Resources
• Pennsylvania State Education Association (https://www.psea.org/resources-by-profession/student-psea/)
• National Council of Teachers of English (NCTE) (https://ncte.org/)
• National Council of Teachers of Mathematics (NCTM) (https://www.nctm.org/)
• National Council for the Social Studies (NCSS) (https://www.socialstudies.org)
• National Science Teachers Association (NSTA) (https://www.nsta.org/)

Accreditation
The College of Education educator preparation programs are fully accredited at the Initial and Advanced levels by the Council for the Accreditation of Educator Preparation (CAEP). The next CAEP program review will be Fall 2026. CAEP advances excellence in educator preparation through evidence-based accreditation that assures quality and supports continuous improvement to strengthen P-12 student learning.

MORE INFORMATION ABOUT ACCREDITATION OF THE SECONDARY EDUCATION PROGRAM (https://ed.psu.edu/about/accreditations/)

Professional Licensure/Certification
Many U.S. states and territories require professional licensure/certification to be employed. If you plan to pursue employment in a licensed profession after completing this program, please visit the Professional Licensure/Certification Disclosures by State (https://www.psu.edu/state-licensure-disclosures/) interactive map.

Contact
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Erie, PA 16563
814-898-6105
behrend-science@psu.edu

University Park
DEPARTMENT OF CURRICULUM AND INSTRUCTION
141 Chambers Building
University Park, PA 16802
814-865-1500
rmz101@psu.edu

https://behrend.psu.edu/school-of-science (https://behrend.psu.edu/school-of-science/)