Physics of Education

The B.S. Ed. in Physics Education prepares highly qualified teachers of physics. Students are certified to teach high school physics once all degree requirements and assessments are passed. Students have an exceptional program of professional preparation including field experiences, theory and pedagogy courses. The major is well rounded, helping teachers develop a strong foundation of physics knowledge. Once initial certification is obtained, additional areas of science may be added by passing the Missouri Content Assessment exams, as of present.

Science teachers are in high demand across most of the United States and particularly in Missouri. Because of this there are forgiveness programs for different types of Federal loans in return for teaching science in a high needs school district (most in Missouri). In addition, students may be eligible to participate in the TEACH grant program which can pay up to $16,000 in college costs over four years and has a similar loan forgiveness program. Be sure to consult the financial aid office for details.

Employment Opportunities of Recent Graduates:
- Physics Teacher
- General Science Teacher
- Chemistry Teacher
- Biology Teacher
- Earth Science Teacher
- Educational Administrator
- Science Supply Salesperson
- Textbook Sales Representative
- Laboratory Technician
- Hallsville High School, mathematics teacher
- Parkway West HS, physics teacher
- Cape Central HS, science teacher

Admission Requirements
- 42 credit hours completed
- 2.75 cumulative GPA
- One of the following: 1) Composite/Superscore of 20 or higher on the ACT exam; 2) Passing scores on all sections of the Missouri General Education Assessment (MoGEA); or 3) A 4-year degree from an accredited college/university
- The following course requirements met:
  - A grade of C or above in CF/PY120 The Child
  - A grade of B or above in ED280 Introduction to Education as a Profession or ME222 Principles of Teaching Music

Additional Information
The state of Missouri has high expectations for future educators. Students matriculating into education programs must meet the following standards to be recommended for licensure following degree completion.

Students must maintain a 2.75 cumulative GPA and a 3.0 GPA in both the area of content expertise and pedagogy courses. In addition, students must pass the MO Content Exam and the MO Educator Evaluation System for recommendation for licensure. Students must also fulfill other assessments such as a dispositions profile and be cleared through an FBI background check.

Special Options with Secondary Education
Southeast offers a Master of Arts in Secondary Education: Educational Studies or Educational Technology.

Transfer and Dual Credit Students
If you have dual credit or transfer credit, please visit our transfer equivalencies guide at semo.edu/transfercredit.

To learn more
Office of Admissions
(573) 651-2590
admissions@semo.edu
semo.edu

To explore the
College of Education, Health and Human Studies online, visit semo.edu/education-health

For advising
Center for Academic Advising
semo.edu/advising
For advising
Center for Academic Advising
semo.edu/advising

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Bachelor of Science in Education (BSED)

This is a guide based on the 2019-2020 Undergraduate Bulletin and is subject to change. The time it takes to earn a degree will vary based on several factors such as dual enrollment, remediation, and summer enrollment. Students will meet with an academic advisor each semester and use Degree Works to monitor their individual progress.

### CURRICULUM CHECKLIST

“Critical Courses” are italicized and bold. Data shows that students who have completed this course in the first two years and have earned the noted grade are most likely to complete this program of study.

#### Education Courses - 47 Hours Required

A grade of ‘C’ or better is required in education courses, with the exception of ED280 which requires a grade of ‘B’ or better.

- **ED280** Introduction to Teaching (3)
- **EF400** Student Teaching Seminar (1)
- **EX390** Psychology and Education of the Exceptional Child (3)
- **PY222** Development of the Adolescent (3)
- **SE307** Content Literacy Methods for Middle and High School (3)
- **SE320** Techniques of Teaching Science (3)
- **SE350** Pedagogy 1: Principles of Effective Teaching (3)
- **SE355** Field I (3)
- **SE365** Pedagogy 2: Secondary School-Interdisciplinary Methods and Technology (4)
- **SE380** Advanced Field (3)
- **SE385** Pedagogy 3: Advanced Methods of Middle and Secondary Teaching (3)
- **SE390** Instructional Interventions for Middle and Secondary Students with Special Literacy Needs (3)
- **SE465** Student Teaching (12)

#### Physics Education - 59-62 Hour Major - No Minor Required

**Required Courses:**
- **EP 100** Physics & Engineering Concepts (3)
- **EP 405** Engineering in Science Education (1)
- **MA 140** Analytical Geometry & Calculus I (5)
- **MA 145** Analytical Geometry & Calculus II (4)
- **MA 244** Analytical Geometry & Calculus III (4)
- **PH 230/030** General Physics I (5)
- **PH 231/031** General Physics II (5)
- **PH 345** Experimental Methods I (3)
- **PH 360** Modern Physics (3)
- **UI 422** Scientific Reasoning (3)
- **CH 181** Introductory Chemistry I (5)*
  OR
  **CH 185** General Chemistry (5)
- **AND**
  **CH 188** Inorganic Chemistry (3)

Choose 3 Hours From:
- **BI 332** General Ecology (3)
- **GO 301** Environmental Geoscience (3)
- **UI 360** Recycling & Waste Mgt (3)
- **UI 372** Earthquakes & Society (3)

Choose 6 Hours From:
- **CS 177** Programming for Scientists/Engineers (3)
- **EP xxx**
- **PH xxx**

Choose 3 Hours From:
- **BS 108** Biology for Living (3)
- **BS 218** Biological Science: A Process Approach (3)

Choose 3 Hours From:
- **GO 110** Physical Geology (3)
- **GO 320** Oceanography (3)
- **GO 418** Meteorology (4)
- **UI 318/018** Earth Science: A Process Approach (3)

Choose 3 hours EP/PH prefix at the 300-599 level:
- **EP/PHxx (3)**

*Choose Chemistry option with advice of advisor

#### General Education Requirements – some requirements may be fulfilled by coursework in major program

- Social and Behavioral Sciences – 6 hours
- Constitution Requirement – 2 hours
- Written Communication – 6 hours
- Oral Communication – 3 hours
- Natural Sciences – 7 hours (from two disciplines, one to include a lab)
- Mathematics – 3 hours
- Humanities & Fine Arts – 9 hours (from at least two disciplines)
- Additional requirements – 5 hours (to include UI100 for native students)
- Civics examination

### SAMPLE FOUR-YEAR PLAN

<table>
<thead>
<tr>
<th></th>
<th>Fall Semester</th>
<th>Spring Semester</th>
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<tbody>
<tr>
<td><strong>FIRST YEAR</strong></td>
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<td><strong>Core Courses</strong></td>
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<td>UI100</td>
<td>3</td>
<td>BS218 or BS108</td>
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<tr>
<td>CH181/CH081/001*</td>
<td>5</td>
<td>EN100</td>
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<tr>
<td>CS177/Physics elective</td>
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<td>MA145</td>
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<tr>
<td>EP100</td>
<td>3</td>
<td>PH230/030</td>
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<tr>
<td>MA140</td>
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<tr>
<td><strong>Total</strong></td>
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<td>18</td>
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Milestone: Maintain 2.75 cumulative GPA

| **SECOND YEAR**      |               |                 |
| **Core Courses**     |               |                 |
| MA244                | 4             | **ED280**       | 3             |
| PH231/031            | 5             | **Environmental Science** | 3 |
| **PY222**            | 3             | Physics Elective | 3             |
| **General Education**| 3             | General Education | 3             |
| **Total**            | 18            | 18              |

Milestone: Maintain 2.75 cumulative GPA, Passing score MoGEA, Complete MEP

| **THIRD YEAR**       |               |                 |
| **Core Courses**     |               |                 |
| EX390                | 3             | **EP405**       | 1             |
| PH345                | 3             | **SE307**       | 3             |
| PH360                | 3             | **SE355**       | 3             |
| **SE350**            | 3             | **SE365**       | 4             |
| **Geoscience elective** | 3           | **UI422**       | 3             |
| **General Education**| 3             | Physics Elective | 3             |
| **Total**            | 18            | 17              |

| **FOURTH YEAR**      |               |                 |
| **Core Courses**     |               |                 |
| SE320                | 3             | **EF400**       | 1             |
| SE380                | 3             | **SE465**       | 12            |
| SE385                | 3             | **FE**          |               |
| SE390                | 3             | **General Education** | 3         |
| **Total**            | 15            | 13              |

Milestone: Passing score Mo Content Exam, MoPTA, 2.75 cumulative GPA, 3.0 GPA in Ed. courses; 3.0 GPA in content courses

A “Milestone” signifies a significant stage for a student in the completion of a degree.

Degree requirements for all students: a minimum of 120 credit hours, completion of the General Education program, completion of 39 senior division hours (300-599), Writing Proficiency Exam (WP003).

Refer to the Undergraduate Bulletin or Degree Works for additional graduation requirements for your program.

Students have the option of adding another area of concentration or a minor to this degree.