Physics Education

Bachelor of Science in Education (BSED)

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.

**Becoming Career Ready...**

Faculty-mentored learning and guidance will help you develop the professional skills needed to become a successful teacher and/or go on for advanced study in graduate and professional programs.

B.S. Ed. in Physics Education graduates work in the education field. Examples of job titles include high school physics teacher, college laboratory technician and college science professor (requires M.S. or Ph.D. degree).

100% of Southeast programs offer real-world experience. B.S. Ed. in Physics Education students earn this experience through student teaching.

B.S. Ed. in Physics Education students will study in the state-of-the-art, first-rate learning environment provided by the recently renovated Magill Hall of Science while gaining hands-on experience and training using a variety of lab equipment, chemical instruments, and tools in laboratory courses. Undergraduate research is also an option.

The path to a successful career starts with you! You can maximize your career development by working closely with Career Services and Southeast faculty – they are here to help you connect your passions, interests and skills to jobs and opportunities in the field. Career Services provides professional career counseling and coaching, resume critiques, practice interviews, job search strategies, career events, networking opportunities and more.

**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 (Elementary, Early, and Exceptional) or PY222 Development of the Adolescent (5-9, 9-12, and PK-12)
  - 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 course equivalencies guide at semo.edu/transfercredit.
COLLEGE OF SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS

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Bachelor of Science in Education (BSED)

This is a guide based on the 2020-2021 Undergraduate Bulletin and is subject to change. The time it takes to earn a degree will vary based on several factors such as a 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.
- **ED200** Introduction to Education as a Profession (3)
- **ED430** Student Teaching Seminar (1)
- **EX96** Psychology and Education of the Exceptional Child (3)
- **FY222** 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)
- **SE357** Field Experience I (3)
- **SE355** Pedagogy 2: Secondary School-Interdisciplinary Methods and Technology (4)
- **SE380** Advanced Field Experience (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:
- **PH230/030** General Physics I (5)
- **PH231/031** General Physics II (5)
- **PH305** Experimental Methods I (3)
- **PH300** Modern Physics (3)
- **UI422** Scientific Reasoning (3)

Choose 3 Hours From:
- **BS332** General Biology (3)
- **GO305** Environmental Geoscience (3)
- **UI300** Recycling & Waste Mgmt (3)
- **UI346** Earthquakes & Society (3)

Choose 3 Hours From:
- **BS108** Biology for Living (3)
- **BS218** Biologic Science: A Process Approach (3)

Choose 5-8 hours:
- **CH185** General Chemistry I (5)
- **CH186** Found. of Inorganic Chem (3)

Choose 3 Hours From:
- **GO110** Physical Geology (3)
- **GO305** Environmental Geoscience (3)
- **GO418** Meteorology (4)
- **UI315** Earth Sci: A Process Approach (3)

Choose 3 hours at the 300-599 level:
*EPxxx* Physics

Choose 9 Hours From:
- **CS201** Introduction to Computer Programming (3)
- **EP100** Physics & Engineering Concepts (3)
- **EP240** Circuit Analysis (4)
- **EP261** Engineering Mech. Statics (1)
- **EP262** Engineering Mech. Dynamics (3)
- **EP305** Digital & Analog System Design (3)
- **EP310** Microcontroller & Embedded Systems (3)
- **EP346** Electronic Circuits (3)
- **EP462** Materials Science (3)
- **PH328** Energy (3)
- **PH340** Optics (3)
- **PH371** Electrodynamics (3)
- **PH400** Topics in Physics & Engineering (3)
- **PH473** Quantum Mechanics (3)
- **PH474/475** Literature of Physics (1-2)
- **PH478/479** Undergraduate Research (1-2)
- **PH430/431** Independent Study in Physics (1-2)
- **PH570** Mathematical Physics (3)

Additional Requirements:
- **EP450** Engr in Science Educ (1)
- **MA140** Analytic Geometry & Calculus I (5)
- **MA145** Analytic Geometry & Calculus II (4)
- **MA244** Analytic Geometry & Calculus III (4)

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

- **MA244** Analytic Geometry & Calculus (4)
- **EN100** English Language and Rhetoric (3)
- **SE306** German (3)
- **ED280** Introduction to Education (3)
- **EP424** Communication (3)
- **BS108** Biology for Living (3)

**SECOND YEAR**

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Milestone: Maintain 2.75 cumulative GPA

**THIRD YEAR**

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Milestone: Passing score MoGEA, Complete MEP

**FOURTH YEAR**

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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.

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

To explore  
the College of Science, Technology, Engineering and Mathematics online, visit  
semo.edu/stem

For advising  
Center for Academic Advising  
semo.edu/advising