

Bachelor of Science in Education (BSED)

Physics Education

The teaching of physics offers a unique career opportunity. Enthusiastic, innovative and well-prepared teachers are needed not only to prepare high school students for careers in science but also to provide all students with an appreciation of science and how it has benefited society. This is especially true in physics, the most fundamental of the physical sciences. Physics describes and explains not only what goes on in our immediate surroundings but also in the minute world of atoms and elementary particles and the vast world of stars and galaxies. Physics teachers can help provide the knowledge that students need to understand and appreciate the world in which they live, and to show the many scientific ideas upon which modern technology is built.

Physics Education students will...

- Obtain a deep understanding of the fundamental principles of physics and mathematics.
- Have the broad education necessary to understand the impact of physics and engineering concepts on everyday issues in a global, economic, environmental, and social context.
- Be well prepared, and certified, to teach high school physics in Missouri, and to communicate physics to the general public.

Career Planning

Career preparation is part of the mission of Southeast. 100% of programs offer our students an internship, study-abroad program, clinical opportunity, student teaching or research internship.

There is currently a shortage of qualified physics teachers at the secondary level for which there is no immediate solution. Thus, graduates should have no difficulty in obtaining teaching positions. In addition, many of the school districts have the need for qualified science teachers who can teach several different sciences (e.g. chemistry, physics, earth science and biology). The unified science option certifies teachers to teach any high school physics course, plus the first courses in high school biology, chemistry, and earth science.

The Office of Career Services in Academic Hall 057 can provide students with 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 course hours completed
- 2.75 cumulative GPA
- Missouri Educator Profile (MEP) results on file with the Office of the Associate Dean of the College of Education
- Score of 220 or higher on all sections of the Missouri General Education Assessment (MoGEA)
- The following course requirements met
 - A grade of C or above in PY222 Development of the Adolescent
 - A grade of B or above in ED280 Introduction to Education as a Profession

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 graduating spring 2017 or later must maintain a 3.0 GPA in both content and pedagogy courses. In addition students must pass the Missouri Content Assessment Exam and the Missouri Pre-Service Teacher Assessment for recommendation for licensure. Students must also fulfill other assessments such as the Missouri Educator Profile and be cleared through a 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.

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

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This is a guide based on the 2018-2019 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 II (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 – 57-60 Hour Major - No Minor Required

Required Courses:

- ___ EP 100 Physics & Engineering Concepts (1)
- ___ 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 360 Modern Physics (3)
- ___ UI 330 Experimental Methods I (3)
- ___ UI 422 Scientific Reasoning (3)
- ___ CH 181 Introductory Chemistry I (5)*
- ___ **OR**
- ___ CH 185 General Chemistry (5)
- ___ **AND**
- ___ CH186 Inorganic Chemistry (3)

Choose 3 Hours From:

- ___ BI 332 General Ecology (3)
- ___ GO 305 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 220 Meteorology (3)
- ___ GO 320 Oceanography (3)
- ___ UI 318 Earth Science: A Process Approach (3)

Choose 3 hours EP/PH prefix at the 300-599 level:

- ___ EP/PHxxx (3)

*Choose Chemistry option with advice of advisor

University Studies Requirements – some requirements may be fulfilled by coursework in major program

- Social and Behavioral Sciences – 3 hours
- Constitution requirement – 3 hours
- US History requirement – 3 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)

SAMPLE FOUR-YEAR PLAN

	Fall Semester		Spring Semester	
	Course #	Hrs	Course #	Hrs
FIRST YEAR	UI100	3	BS218 or BS108	3
	CH181/CH081/001*	5	EN100	3
	CS177/Physics elective	3	MA145	4
	EP100	1	PH230/030	5
	MA140	5	University Studies	3
	Total	17	Total	18
Milestone: Maintain 2.75 cumulative GPA				
SECOND YEAR	MA244	4	ED280	3
	PH231/031	5	Environmental Science	3
	PY222	3	Physics Elective	3
	University Studies	3	University Studies	3
	University Studies	3	University Studies	3
			University Studies	3
	Total	18	Total	18
Milestone: Maintain 2.75 cumulative GPA, Passing score MoGEA, Complete MEP				
THIRD YEAR	EX390	3	EP405	1
	PH360	3	SE307	3
	SE350	3	SE355	3
	UI330	3	SE365	4
	Geoscience elective	3	UI422	3
	University Studies	3	Physics Elective	3
	Total	18	Total	17
FOURTH YEAR	SE320	3	EF400	1
	SE380	3	SE465	12
	SE385	3		
	SE390	3		
	University Studies	3		
	Total	15	Total	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 University Studies program, completion of 39 senior division hours (300-599), Writing Proficiency Exam (WP003), and completion of the Measure of Academic Proficiency and Progress (MAP) at the senior level. 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.