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. In fact, more than 90% of Southeast students participate in internships, clinical opportunities, student teaching, research assistantships, and study abroad.

There is currently a shortage of qualified physics teachers at the secondary level for which there is no immediate solution. Thus, graduates will have no difficulty in obtaining teaching positions. A national awareness of this problem has led to the speculation that salaries will increase substantially in the future to attract needed qualified teachers.

Professional career counselors are available for all students. The Office of Career Services in Academic Hall 057 can provide students with professional career counseling, resume critiques, practice interviews, job search strategies, career events, networking opportunities, and more.

| Demonstrated Career Proficiency is a Requirement of all Southeast Students |
|-----------------------------|-----------------------------|-----------------------------|
| CL001/CL002 First Semester  | Complete the FOCUS2 assessment and develop a Career Action Plan. |
| CL003 Junior Year           | Students gain information about career planning and job searching resources. |
| CL004 Senior Year           | Students demonstrate advanced proficiency by identifying a position in their field, developing a cover letter, and tailoring a resume for the position. Materials are critiqued to ensure preparedness for a successful job search. |

**Internship and Employment Opportunities of Recent Graduates/ or Graduate Schools and Programs of Recent Graduates**

- Career opportunities include: Physics Teacher; General Science Teacher; Chemistry Teacher; Biology Teacher; Earth Science Teacher; Educational Administrator; Science Supply Salesperson; Textbook Sales Representative; and Laboratory Technician.
- Hallsville High School, mathematics teacher
- Parkway West HS, physics teacher
- Cape Central HS, science teacher

**Admission Requirements**

Students graduating prior to spring 2017

- Cumulative 2.50 GPA
- Passage of CBASE or Missouri General Education Assessment (MoGEA)

Students graduating spring 2017 or later

- Cumulative 2.75 GPA
- Pass all sections of the Missouri General Education Assessment

**Current Pass Scores for MoGEA**

- English - 186
- Writing - 167
- Math - 183
- Science - 183
- Social Studies – 183

All students must have:

- 42 hours of course credits
- Missouri Educator Profile (MEP) results on file
- Passage of all sections of the Missouri General Education Assessment (MoGEA) test.
- ED 280 Introduction to Teaching as a Profession with a grade of “B” or above
- PY222 Development of the Adolescent

**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.
Physics Education: Physics Option

Bachelor of Science in Education (BSED)

This is a guide based on the 2015-2016 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 DegreeWorks 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)
ED400 Student Teaching Seminar (3)
EX390 Psychology and Education of the Exceptional Child (3)
PY222 Development of the Adolescent (3)
SE307 Reading/Writing in the Content Area (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)*
CH 185 General Chemistry (5)
CH 186 Inorganic Chemistry (3)

AND

Choose 3 Hours From:
BJ 332 General Geology (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
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 (not already listed above):
UI100 First Year Seminar, EN100 English Composition, Artistic Expression, Written Expression, Oral Expression, Literacy Expression, Development of a Major Civilization, Economic Systems, Political Systems, Social Systems, and one IU/UIxxx** (if not taken in major)**

Critical Courses:

University Studies Requirements

University Studies Requirements

Write a 250-word essay on the importance of critical thinking in the field of science education.