

Bachelor of Science in Education (BSED)

Physics 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.

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
- 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 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.

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

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This is a guide based on the 2021-2022 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 Education as a Profession (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 Experience II (3)
- ___ SE365 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)
- ___ PH345 Experimental Methods I (3)
- ___ PH360 Modern Physics (3)
- ___ UI422 Scientific Reasoning (3)

Choose 3 Hours From:

- ___ BI332 General Ecology (3)
- ___ GO305 Environmental Geoscience (3)
- ___ UI360 Recycling & Waste Mgt (3)
- ___ UI372 Earthquakes & Society (3)

Choose 3 Hours From:

- ___ BS108 Biology for Living (3)
- ___ BS218 Biologic Science: A Process Approach (3)

Choose 5-7 hours*:

- ___ CH181 Introductory Chemistry I (5)
- ___ OR
- ___ CH184/185 General Chemistry I and Lab (4)
- ___ AND
- ___ CH186 Found of Inorganic Chem (3)

Choose 3 Hours From:

- ___ GO110 Physical Geology (3)
- ___ GO320 Oceanography (3)
- ___ GO418 Meteorology (4)
- ___ UI318 Earth Sci: A Process Approach (3)

Choose 3 hours at the 300-599 level:

- ___ EPxxx
- ___ PHxxx

Choose 9 Hours From:

- ___ CS101 Introduction to Computer Programming (3)
- ___ EP100 Introduction to Engineering (3)
- ___ EP240 Circuit Analysis I (3)
- ___ EP261 Engineering Mech: Statics (3)
- ___ EP262 Engineering Mech: Dynamics (3)
- ___ EP305 Digital & Analog System Design (3)
- ___ EP310 Microcontroller & Embedded Systems (3)
- ___ EP340 Electronic Circuits (3)
- ___ EP462 Materials Science (3)
- ___ PH328 Energy (3)
- ___ PH341 Optics (3)
- ___ PH370 Mechanics (3)
- ___ PH371 Electrodynamics (3)
- ___ PH400 Topics in Physics & Engineering (3)
- ___ PH473 Quantum Mechanics (3)
- ___ PH475/476 Literature of Physics (1-2)
- ___ PH478/479 Undergraduate Research (1-2)
- ___ PH490/491 Independent Study in Physics (1-2)
- ___ PH570 Mathematical Physics (3)

Additional Requirements:

- ___ EP405 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 Social and Behavioral Sciences (6); Constitution requirement (3); Written Communication (6); Oral Communication (3); Natural Sciences (7 hours, from two disciplines, one to include a lab); Mathematics (3); 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

	Fall Semester		Spring Semester	
	Course #	Hrs	Course #	Hrs
FIRST YEAR	UI100	1	BS218 or BS108	3
	CH181/CH081/001*	5	EN100	3
	CS177/Physics elective	3	MA145	4
	EP100	3	PH230/030	5
	MA140	5	General Education	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
	General Education	3	General Education	3
	General Education	3	General Education	3
	Total	18	Total	18
Milestone: Maintain 2.75 cumulative GPA, Passing score MoGEA, Complete MEP				
THIRD YEAR	EX390	3	EP405	1
	PH345	3	SE307	3
	PH360	3	SE355	3
	SE350	3	SE365	4
	Geoscience elective	3	UI422	3
	Total	18	Total	17
FOURTH YEAR	SE320	3	EF400	1
	SE380	3	SE465	12
	SE385	3		
	SE390	3		
	General Education	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 the General Education program, and completion of 39 senior division hours (300-599). 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.

NOTE: This program meets the educational requirements for professional licensure and/or certification in Missouri. Please consult our State Authorization webpage, to determine information specific to your state:

<https://app.semo.edu/genl/distancelearningcompliance/DistLearnComp.aspx>.

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