



MISSOURI DEPARTMENT OF ELEMENTARY AND SECONDARY EDUCATION  
OFFICE OF EDUCATOR QUALITY – EDUCATOR PREPARATION

**PHYSICS, GRADES 9-12**

EDUCATOR PREPARATION PROGRAM NAME  
MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY TEACHER EDUCATION PROGRAM

EDUCATOR PREPARATION PROGRAM CODE  
116119

**INSTRUCTIONS**

Please complete Educator Preparation Program (EPP) Name & EPP Code above.

**Certification Requirements:**

- Course Number – List the course number(s) for the course(s) or groups of competencies that align with the specific section of the requirements. It is possible to have more than one course or group listed.
- Course Title – List the course title(s) for the course(s) or groups of competencies that align with the specific section of the requirements. It is possible to have more than one course or group listed.
- Semester Hours – List the number of semester hours for each specific section. It is possible to use decimals (to the nearest tenth) to indicate partial use of a course to meet a requirement. The total number of semester hours must meet or exceed the minimum required number of semester hours.

Email the completed cover sheet, curriculum matrix, and advising/program information to [DESE.MoSPETransition@dese.mo.gov](mailto:DESE.MoSPETransition@dese.mo.gov) on or before the date established in the Transition Plan.

QUESTIONS: Contact Educator Preparation, 573-751-1668 or [DESE.MoSPETransition@dese.mo.gov](mailto:DESE.MoSPETransition@dese.mo.gov)

**A. Professional Requirements (Minimum of 26 semester hours)**

1. Content Planning and Delivery

	Course Number	Course Title	Semester Hours
a. Curriculum and Instructional Planning	EDUC 3280	Teaching Methods & Skills in Content Areas	6
b. Instructional Strategies and Techniques in Content Area Specialty	EDUC 3280	Teaching Methods & Skills in Content Areas	
c. Assessment, Student Data, and Data-Based Decision-Making	EDUC 3280	Teaching Methods & Skills in Content Areas	
d. Strategies for Content Literacy	EDUC 3216 ENGLISH 3170	Teaching Reading in Content Area Teaching & Supervising Reading & Writing	3 3
e. Critical Thinking and Problem Solving	EDUC 3280 EDUC 3216 EDUC 1174 ENGLISH 3170	Teaching Methods & Skills in Content Areas Teaching Reading in Content Area School Org & Adm for Elem & Sec Teachers Teaching & Supervising Reading & Writing	
f. English Language Learning	EDUC 3280 EDUC 1040 EDUC 3216 EDUC 1104 EDUC 2102 or PSYCH 2300 (co-listed) ENGLISH 3170	Teaching Methods & Skills in Content Areas Perspectives in Education Teaching Reading in Content Area Teacher Field Experience Educational Psychology  Teaching & Supervising Reading & Writing	2

2. Individual Student Needs

	Course Number	Course Title	Semester Hours
a. Psychological Development of the Child and Adolescent	PSYCH 3310	Developmental Psychology	3
b. Psychology/Education of the Exceptional Child	PSYCH 4310 or EDUC 4310 (co-listed)	Psychology of the Exceptional Child	3
c. Differentiated Learning	EDUC 3280 EDUC 3216	Teaching Methods & Skills in Content Areas Teaching Reading in Content Area	
d. Classroom Management	EDUC 1174	School Org & Adm for Elem & Sec Teachers	2

e. Cultural Diversity	EDUC 4298 EDUC 1040 EDUC 3216 EDUC 2102 or PSYCH 2300 (co-listed) EDUC 3280	Student Teaching Seminar Perspectives in Education Teaching Reading in Content Area Educational Psychology  Teaching Methods & Skills in Content Areas	1
f. Educational Psychology	EDUC 2102 or PSYCH 2300 (co-listed)	Educational Psychology	3
<b>3. Schools and the Teaching Profession</b>			
	<b>Course Number</b>	<b>Course Title</b>	<b>Semester Hours</b>
a. Consultation and Collaboration	EDUC 3280 EDUC 3216 EDUC 1174 EDUC 1040 EDUC 2102 or PSYCH 2300 (co-listed)	Teaching Methods & Skills in Content Areas Teaching Reading in Content Area School Org & Adm for Elem & Sec Teachers Perspectives in Education Educational Psychology	
b. Legal/Ethical Aspects of Teaching	EDUC 3280 EDUC 3216 EDUC 1174 EDUC 1040	Teaching Methods & Skills in Content Areas Teaching Reading in Content Area School Org & Adm for Elem & Sec Teachers Perspectives in Education	
<b>4. Secondary Literacy (Minimum of six semester hours)</b>			
	<b>Course Number</b>	<b>Course Title</b>	<b>Semester Hours</b>
a. Reading and Writing in the Content Area	EDUC 3216 ENGLISH 3170	Teaching Reading in Content Area Teaching & Supervising Reading & Writing	
b. Instructional Interventions for Students with Reading Deficits	EDUC 3216 EDUC 3280  ENGLISH 3170  EDUC 4298	Teaching Reading in Content Area Teaching Methods & Skills in Content Areas Teaching & Supervising Reading & Writing Student Teaching Seminar	
<b>Professional Requirements - Total Semester Hours</b>			<b>26</b>
<b>B. Field and Clinical Experiences (Minimum of ten semester hours)</b>			
	<b>Course Number</b>	<b>Course Title</b>	<b>Semester Hours</b>
1. Early Field Experiences (Minimum of one semester hour with a minimum of 30 clock hours)	EDUC 1104	Teacher Field Experience	2
2. Mid-Level Field Experiences (Minimum of one semester hour with a minimum of 45 clock hours)	EDUC 1164	Aiding Elem, Middle & Sec Schools	2
3. Culminating Clinical Experiences (Minimum of eight semester hours with a minimum of 12 weeks in one placement)	EDUC 4299	Student Teaching	12
<b>Field and Clinical Experiences - Total Semester Hours</b>			<b>16</b>
<b>C. Physics Content Knowledge Area (Minimum of 35 semester hours)</b>			
	<b>Course Number</b>	<b>Course Title</b>	<b>Semester Hours</b>
1. History/Philosophy of Science and Technology (three semester hours)	HISTORY 3530	History of Science	3
2. Physics Coursework – Minimum of 20 semester hours which must include:			
a. Mechanics	PHYSICS 1111 & 1119 or PHYSICS 1135	General Physics I w/Lab or  Engineering Physics I w/Lab	5 or 4

b. Electricity and Magnetism	PHYSICS 2111 & 2119 or PHYSICS 2135	General Physics II w/Lab or Engineering Physics II w/Lab	5 or 4
c. Heat, Sound, and Light	PHYSICS 4311, PHYSICS 3211, PHYSICS 4211	Thermal Physics, Electricity & Magnetism I, Electricity & Magnetism II	3 3 3
d. Atomic or Modern Physics	PHYSICS 2305 or PHYSICS 2311	Intro to Modern Physics or Modern Physics I	3
e. Physics Electives	Required- PHYSICS 2401, 2129, 3311, 3201, 3119, 3129, 4301, 1101	Intro to Theoretical Physics, Intermediate Physics Laboratory, Modern Physics II, Physical Mechanics, Advanced Physics Laboratory I, Advanced Physics Lab II, Intro to Quantum Mechanics, Intro to Physics	3, 3, 3, 3, 3, 3, 3, 1
3. Additional Science Coursework – Minimum of 12 semester hours which must include:			
a. Chemistry	CHEMISTRY 1310 & 1319, CHEMISTRY 1100,  CHEMISTRY 1320	General Chemistry w/Lab,  Intro to Lab Safety & Hazardous Materials, General Chemistry	5, 1, 3
b. Biology	BIO SCI 1113	General Biology	3
c. Earth Science	PHYSICS 1505 or GEOLOGY 1110	Astronomy or Physical and Environmental Geology	3
d. Environmental Science	PHYSICS 1605 & 1609 (optional) or BIO 2263	Environmental Physics I (Lab optional) or Ecology	3 or 4
<b>Content Knowledge Area - Total Semester Hours</b>			<b>63</b>

The Department of Elementary and Secondary Education does not discriminate on the basis of race, color, religion, gender, national origin, age, or disability in its programs and activities. Inquiries related to Department programs and to the location of services, activities, and facilities that are accessible by persons with disabilities may be directed to the Jefferson State Office Building, Office of the General Counsel, Coordinator – Civil Rights Compliance (Title VI/Title IX/504/ADA/Age Act), 6<sup>th</sup> Floor, 205 Jefferson Street, P.O. Box 480, Jefferson City, MO 65102-0480; telephone number 573-526-4757 or TTY 800-735-2966 email [civilrights@dese.mo.gov](mailto:civilrights@dese.mo.gov).