



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

**BIOLOGY, GRADES 9-12**

EDUCATOR PREPARATION PROGRAM NAME <b>Missouri University of Science and Technology</b>	EDUCATOR PREPARATION PROGRAM CODE <b>116119</b>
---	--

**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)

<b>A. Professional Requirements (Minimum of 26 semester hours)</b>			
<b>1. Content Planning and Delivery</b>			
	<b>Course Number</b>	<b>Course Title</b>	<b>Semester Hours</b>
a. Curriculum and Instructional Planning	EDUC 3280	Instructional Strategies in the Content Areas	3
b. Instructional Strategies and Techniques in Content Area Specialty	EDUC 3280	Instructional Strategies in the Content Areas	
c. Assessment, Student Data, and Data-Based Decision-Making	EDUC 3340	Assessment of Student Learning	3
d. Strategies for Content Literacy	EDUC 3216 English 3170	Instructional Literacy in Content Area Teaching & Supervising Reading & Writing	3 3
e. Critical Thinking and Problem Solving	EDUC 3280 EDUC 3216 EDUC 1174 English 3170	Instructional Strategies in the Content Area Instructional Strategies in Content Area School Org & Administration Teaching & Supervising Reading & Writing	
f. English Language Learning	EDUC 3280 EDUC 1040 EDUC 3216 EDUC 1104 ED 2102/ Psych 2300 (co-listed) English 3170	Instructional Strategies in the Content Area Perspectives in Education Instructional Literacy in Content Area Teacher Field Experience I Educational Psychology Teaching & Supervising Reading & Writing	2
<b>2. Individual Student Needs</b>			
	<b>Course Number</b>	<b>Course Title</b>	<b>Semester Hours</b>
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 or 2310 (co-listed)	Psychology of the Exceptional Child	3

c. Differentiated Learning	EDUC 3280	Instructional Strategies in the Content Area	
	EDUC 3216	Instructional Literacy in Content Area	
d. Classroom Management	EDUC 1174	School Org & Administration	2
e. Cultural Diversity	EDUC 4298 EDUC 1040	Student Teaching Seminar Perspectives in Education	1
	EDUC 3216 ED 2102/ Psych 2300 (co-listed) EDUC 3280	Instructional Strategies in Content Area Educational Psychology	
f. Educational Psychology	EDUC 2102 or Psych 2300 (co-listed)	Instructional Strategies in the Content Areas 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 ED 2102/Psych 2300 (co-listed)	Instructional Strategies in the Content Areas  Instructional Literacy in the 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	Instructional Strategies in the Content Areas  Instructional Literacy in the Content Area  School Org & Administration Perspectives in Education	
<b>4. Secondary Literacy (Minimum of 6 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	Instructional Literacy in the Content Area Teaching & Supervising Reading & Writing	
b. Instructional Interventions for Students with Reading Deficits	EDUC 3216  EDUC 3280  English 3170 EDUC 4298	Instructional Literacy in the Content Area  Instructional Strategies in the 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 10 semester hours)</b>			
	<b>Course Number</b>	<b>Course Title</b>	<b>Semester Hours</b>
1. Early Field Experiences (Minimum of 1 semester hour with a minimum of 30 clock hours)	EDUC 1104	Teacher Field Experience I	1
2. Mid-Level Field Experiences (Minimum of 1 semester hour with a minimum of 45 clock hours)	EDUC 1164	Teacher Field Experience II	2
3. Culminating Clinical Experiences (Minimum of 8 semester hours with a minimum of 12 weeks in 1 placement)	EDUC 4299	Student Teaching	12
<b>Field and Clinical Experiences - Total Semester Hours</b>			<b>15</b>
<b>C. Biology 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 (Minimum of 3 semester hours)	HISTORY 3530 or EDUC 3001 or  PHILOS 4345 or History 3533	History of Science or Diversity and Equity in STEM Education: Yesterday, Today, and Tomorrow or Philosophy of Science or History of Medieval and Early Modern Science	3

2. Biology Coursework – Minimum of 20 semester hours which must include			
a. Cell Biology	BIO 2213/2219	Cell Biology/Cell Bio Lab	3/1
b. Plant Form and Function	BIO 1113 or BIO 1213/1219 BIO 1223/1229	General Bio or Principles of Biology/Lab Biodiversity/Biodiversity Lab	3/2 3/1
c. Animal Form and Function	BIO 1113 or 1213/1219 BIO 1223/1229	General Bio or Principles of Biology/Lab Biodiversity/Biodiversity Lab	
d. Genetics	BIO 2223	General Genetics	3
e. Evolution	BIO 3233	Evolution	3
f. Biology Electives	BIO 2263	Ecology	3
	Required: BIO 1201 BIO 4010	Introduction to Biological Science Seminar	1 1
3. Additional Science Coursework – Minimum of 12 semester hours which must include			
a. Chemistry	CHEM 1310/1319 1320 1100 2210 2220	General Chemistry/Lab General Chemistry Intro to Lab Safety & Haz Materials, Organic Chemistry 1 Organic Chemistry II	4/1 3 1 4 4
b. Physics	PHYSICS 1145 or PHYSICS 1505	College Physics I or Astronomy	3
c. Earth Science	GEO 1110 or GEO 1120	Phys & Environmental Geo or Evolution of the Earth	3
d. Environmental Science	BIO 1173	Intro to Environmental Science	3
<b>Content Knowledge Area - Total Semester Hours</b>			<b>53</b>

The Department of Elementary and Secondary Education does not discriminate on the basis of race, color, religion, gender, gender identity, sexual orientation, national origin, age, veteran status, mental or physical disability, or any other basis prohibited by statute 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, Director of Civil Rights Compliance and MOA Coordinator (Title VI/Title VII/Title IX/504/ADA/ADAAA/Age Act/GINA/USDA Title VI), 5th 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).