



**CHEMISTRY, 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. The EPP Code may be located at <https://dese.mo.gov/sites/default/files/EPP-Code-Name.pdf>

**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 Gale Hairston, 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. Chemistry 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 three semester hours)	History 3530 or EDUC 3001 or  PHILOS 4345	History of Science or Diversity and Equity in STEM Education: Yesterday, Today, and Tomorrow or Philosophy Of Science	3
2. Chemistry Coursework – Minimum of 20 semester hours which must include:			
a. Inorganic Chemistry	Chem 1310/1319 Chem 1320 Chem 1510	General Chemistry/Lab General Chemistry Qualitative Analysis	4/1 3 2
b. Analytical Chemistry	Chem 2510	Analytical Chemistry I (Lec & Lab)	3/1
c. Organic Chemistry	Chem 2210/2219 Chem 2220/2229	Organic Chem I w/Lab Organic Chem II w/Lab	3/1 3/1
d. Physical Chemistry	Chem 3410 or 3420 or 3430 Chem 3419 or 3429	Physical Chem or Intro to Quantum Chem or Physical Chem Physical Chem Lab or Physical Chem Lab II	3  1
e. Biochemistry	Chem 2220 Chem 4610 Opt Elective 4619	Organic Chem II Gen Biochemistry Gen Biochem Lab	3
f. Chemistry Electives	Choose 1 hr from: Chem 2310/2319 3510 4297  4210 4220 4410 4510 4619 4620 4710 4810 4819 4850 4099  Required: Chem 1100 Chem 4010	Inorganic Chem/ Lab, Analytical Chem II, Organic Synthesis & Spectroscopic Analysis, Intermediate Organic Chemistry II Intermediate Organic Chemistry I Chemical Thermodynamics Instrumental Methods of Chem Analysis General Biochem/Lab Metabolism Principals of Environmental Monitoring Chem & Inherent Properties of Polymers Polymer Sci Lab Fundamentals of Protective Coating 1 Undergrad Research  Intro to Lab Safety & Haz Materials Undergraduate Seminar	(1 hr required)                1 1
3. Additional Science Coursework – Minimum of 12 semester hours which must include:			
a. Biology	Biology 1113	General Biology	3
b. Physics	Physics 1111/1119 or Physics 1135 Physics 2111/2119 or Physics 2135	General Physics I w/Lab or Engineering Physics I General Physics II w/Lab or Engineering Physics II	4/1 or 4 4/1 or 4
c. Earth Science	Geology 1110 or Physics 1505	Physical and Environmental Geology or Astronomy	3
d. Environmental Science	Biology 2263	Ecology	3
<b>Content Knowledge Area - Total Semester Hours</b>			<b>54</b>

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