



CHEMISTRY, GRADES 9-12

EDUCATOR PREPARATION PROGRAM NAME MO UNIVERSITY OF SCIENCE AND TECHNOLOGY	EDUCATOR PREPARATION PROGRAM CODE 116119
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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 on or before the date established in the Transition Plan.

QUESTIONS: Contact Educator Preparation, 573-751-1668 or 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	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
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 or 2310 (co-listed)	Psychology of the Exceptional Child	3
c. Differentiated Learning	EDUC 3280 EDUC 3216	Instructional Strategies in the Content Area Instructional Literacy in Content Area	
d. Classroom Management	EDUC 1174	School Org & Administration	2
e. Cultural Diversity	EDUC 4298 EDUC 1040 EDUC 3216 ED 2102/ Psych 2300 (co-listed) EDUC 3280	Student Teaching Seminar Perspectives in Education Instructional Strategies in Content Area Educational Psychology Instructional Strategies in the Content Areas	1
f. Educational Psychology	EDUC 2102 or Psych 2300 (co-listed)	Educational Psychology	3

3. Schools and the Teaching Profession			
	Course Number	Course Title	Semester Hours
a. Consultation and Collaboration	EDUC 3280	Instructional Strategies in the Content Areas	
	EDUC 3216	Instructional Literacy in the Content Area	
	EDUC 1174	School Org & Adm for Elem & Sec Teachers	
	EDUC 1040 ED 2102/Psych 2300 (co-listed)	Perspectives in Education Educational Psychology	
b. Legal/Ethical Aspects of Teaching	EDUC 3280	Instructional Strategies in the Content Areas	
	EDUC 3216	Instructional Literacy in the Content Area	
	EDUC 1174	School Org & Administration	
	EDUC 1040	Perspectives in Education	
4. Secondary Literacy (Minimum of six semester hours)			
	Course Number	Course Title	Semester Hours
a. Reading and Writing in the Content Area	EDUC 3216	Instructional Literacy in the Content Area	
	English 3170	Teaching & Supervising Reading & Writing	
b. Instructional Interventions for Students with Reading Deficits	EDUC 3216	Instructional Literacy in the Content Area	
	EDUC 3280	Instructional Strategies in the Content Areas	
	English 3170	Teaching & Supervising Reading & Writing	
	EDUC 4298	Student Teaching Seminar	
Professional Requirements - Total Semester Hours			26
B. Field and Clinical Experiences (Minimum of ten semester hours)			
	Course Number	Course Title	Semester Hours
1. Early Field Experiences (Minimum of one semester hour with a minimum of 30 clock hours)	EDUC 1104	Teacher Field Experience I	1
2. Mid-Level Field Experiences (Minimum of one semester hour with a minimum of 45 clock hours)	EDUC 1164	Teacher Field Experience II	2
3. Culminating Clinical Experiences (Minimum of eight semester hours with a minimum of 12 weeks in one placement)	EDUC 4299	Student Teaching	12
Field and Clinical Experiences - Total Semester Hours			15
C. Chemistry Content Knowledge Area (Minimum of 35 semester hours)			
	Course Number	Course Title	Semester Hours
1. History/Philosophy of Science and Technology (Minimum of three 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 Hist of Medieval & Early Modern Science	3
2. Chemistry Coursework – Minimum of 20 semester hours which must include:			
a. Inorganic Chemistry	Chem 1310/1319	General Chemistry/Lab	4/1
	Chem 1320	General Chemistry	3
	Chem 1510	Qualitative Analysis	2
b. Analytical Chemistry	Chem 2510	Analytical Chemistry I (Lec & Lab)	3/1
c. Organic Chemistry	Chem 2210/2219	Organic Chem I w/Lab	3/1
	Chem 2220/2229	Organic Chem II w/Lab	3/1
d. Physical Chemistry	Chem 3410	Physical Chem	3
	or 3420	or Intro to Quantum Chem	
	or 3430	or Physical Chem	
	Chem 3419 or 3429	Physical Chem Lab or Physical Chem Lab II	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 Chem 1100 Required: 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
Content Knowledge Area - Total Semester Hours			54

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