



CHEMISTRY, GRADES 9-12 - ALTERNATIVE

EDUCATOR PREPARATION PROGRAM NAME SOUTHEAST MISSOURI STATE UNIVERSITY	EDUCATOR PREPARATION PROGRAM CODE 120120
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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	SE 650	Introduction to Teaching Methods in Middle and Secondary Schools	.5
	SE 653	Intermediate Methods of Teaching in Secondary Schools	.25
	SE 654	Advanced Methods of Teaching in Middle and Secondary Schools	.25
	SE 655	Techniques of Teaching STEM Content	.75
	SE 651	Introductory Practicum 1 in Middle and Secondary Schools	.25
	SE 660	Intermediate Practicum 2 in Middle and Secondary Schools	.25
b. Instructional Strategies and Techniques in Content Area Specialty	SE 655	Techniques of Teaching STEM Content	1
	SE 651	Introductory Practicum 1 in Middle and Secondary Schools	.25
	SE 660	Intermediate Practicum 2 in Middle and Secondary Schools	.25
c. Assessment, Student Data, and Data-Based Decision-Making	SE 650	Introduction to Teaching Methods in Middle and Secondary Schools	.25
	SE 653	Intermediate Methods of Teaching in Secondary Schools	.25
	SE 654	Advanced Methods of Teaching in Middle and Secondary Schools	.5
	SE 655	Techniques of Teaching STEM Content	.5
	SE 651	Introductory Practicum 1 in Middle and Secondary Schools	.25
	SE 660	Intermediate Practicum 2 in Middle and Secondary Schools	.25
d. Strategies for Content Literacy	SE 602	Effective Literacy Instruction at the Middle and Secondary Levels	Hours are counted under "Secondary Literacy"
e. Critical Thinking and Problem Solving	SE 650	Introduction to Teaching Methods in Middle and Secondary Schools	.25
	SE 653	Intermediate Methods of Teaching in Secondary Schools	.25
	SE 654	Advanced Methods of Teaching in Middle and Secondary Schools	.25
	SE 655	Techniques of Teaching STEM Content	.75

f. English Language Learning	SE 654 SE 602 SE 612	Advanced Methods of Teaching in Middle and Secondary Schools Effective Literacy Instruction at the Middle and Secondary Levels Responsive Literacy Intervention for Middle and High School with Academic Challenges	.25 Hours are counted under "Secondary Literacy"
2. Individual Student Needs			
	Course Number	Course Title	Semester Hours
a. Psychological Development of the Child and Adolescent	PY 222	Development of the Adolescent	3
b. Psychology/Education of the Exceptional Child	EX 390/635	Psychology and Education of the Exceptional Child	3
c. Differentiated Learning	SE 650	Introduction to Teaching Methods in Middle and Secondary Schools	.5
	SE 653	Intermediate Methods of Teaching in Secondary Schools	.25
	SE 654	Advanced Methods of Teaching in Middle and Secondary Schools	.25
d. Classroom Management	SE 650	Introduction to Teaching Methods in Middle and Secondary Schools	.5
	SE 653	Intermediate Methods of Teaching in Secondary Schools	.5
	SE 654	Advanced Methods of Teaching in Middle and Secondary Schools	.5
	SE 651	Introductory Practicum 1 in Middle and Secondary Schools	.25
	SE 660	Intermediate Practicum 2 in Middle and Secondary Schools	.25
e. Cultural Diversity	SE 650	Introduction to Teaching Methods in Middle and Secondary Schools	.25
	SE 653	Intermediate Methods of Teaching in Secondary Schools	.5
	SE 654	Advanced Methods of Teaching in Middle and Secondary Schools	.25
f. Educational Psychology	SE 653	Intermediate Methods of Teaching in Secondary Schools	.25
	SE 654	Advanced Methods of Teaching in Middle and Secondary Schools	.25
3. Schools and the Teaching Profession			
	Course Number	Course Title	Semester Hours
a. Consultation and Collaboration	SE 650	Introduction to Teaching Methods in Middle and Secondary Schools	.25
	SE 653	Intermediate Methods of Teaching in Secondary Schools	.25
	SE 654	Advanced Methods of Teaching in Middle and Secondary Schools	.25
b. Legal/Ethical Aspects of Teaching	SE 650	Introduction to Teaching Methods in Middle and Secondary Schools	.5
	SE 653	Intermediate Methods of Teaching in Secondary Schools	.5
	SE 654	Advanced Methods of Teaching in Middle and Secondary Schools	.25
4. Secondary Literacy (Minimum of six semester hours)			
	Course Number	Course Title	Semester Hours
a. Reading and Writing in the Content Area	SE 602	Effective Literacy Instruction at the Middle and Secondary Levels	3
b. Instructional Interventions for Students with Reading Deficits	SE 612	Responsive Literacy Intervention for Middle and High School with Academic Challenges	3
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)	SE 651	Introductory Practicum 1 in Middle and Secondary Schools	2
2. Mid-Level Field Experiences (Minimum of one semester hour with a minimum of 45 clock hours)	SE 660	Intermediate Practicum 2 in Middle and Secondary Schools	2

3. Culminating Clinical Experiences (Minimum of eight semester hours with a minimum of 12 weeks in one placement)	SE 670	Internship in Middle and Secondary Schools (completed through a traditional 12-week, full-time internship or 2 years of teaching experience while employed in the area of certification on a provisional certificate)	8
Field and Clinical Experiences - Total Semester Hours			12
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)		BA/BS in Chemistry or closely related field AND successful passage of Missouri Content Assessment Exam in Chemistry (test # 018). In particular, the following competencies apply: <ul style="list-style-type: none"> • 0001: Understand the practices of scientific inquiry and engineering design • 0002: Understand crosscutting concepts in the sciences and engineering • 0003: Understand the relationships between science, technology, and human activity in a global context 	
2. Chemistry Coursework – Minimum of 20 semester hours which must include:			
a. Inorganic Chemistry		BA/BS in Chemistry or closely related field AND successful passage of Missouri Content Assessment Exam in Chemistry (test # 018). In particular, the following competencies apply: <ul style="list-style-type: none"> • 0008: Understand the nomenclature and structure of inorganic and organic compounds • 0009: Understand chemical bonding and intermolecular forces and their effect on the properties of substances 	
b. Analytical Chemistry		BA/BS in Chemistry or closely related field AND successful passage of Missouri Content Assessment Exam in Chemistry (test # 018). In particular, the following competencies apply: <ul style="list-style-type: none"> • 0004: Understand the properties of matter • 0005: Understand atomic theory and the periodic table • 0006: Understand the kinetic molecular theory, the nature of phase changes, and the gas laws 	
c. Organic Chemistry		BA/BS in Chemistry or closely related field AND successful passage of Missouri Content Assessment Exam in Chemistry (test # 018). In particular, the following competencies apply: <ul style="list-style-type: none"> • 0008: Understand the nomenclature and structure of inorganic and organic compounds • 0009: Understand chemical bonding and intermolecular forces and their effect on the properties of substances 	
d. Physical Chemistry		BA/BS in Chemistry or closely related field AND successful passage of Missouri Content Assessment Exam in Chemistry (test # 018). In particular, the following competencies apply: <ul style="list-style-type: none"> • 0007: Understand energy changes in chemical and physical processes • 0010: Understand the nature of chemical reactions 	

e. Biochemistry		BA/BS in Chemistry or closely related field AND successful passage of Missouri Content Assessment Exam in Chemistry (test # 018). In particular, the following competencies apply: <ul style="list-style-type: none"> • 0010: Understand the nature of chemical reactions • 0011: Understand the principles of chemical equilibrium • 0012: Understand acid-base chemistry • 0013: Understand oxidation-reduction reactions and electrochemistry 	
f. Chemistry Electives		BA/BS in Chemistry or closely related field AND successful passage of Missouri Content Assessment Exam in Chemistry (test # 018). In particular, the following competencies apply: <ul style="list-style-type: none"> • 0014: Understand the mole concept and stoichiometry • 0015: Understand the properties of solutions and colloidal suspensions 	
3. Additional Science Coursework – Minimum of 12 semester hours which must include:			
a. Biology		BA/BS in Chemistry or closely related field AND successful passage of Missouri Content Assessment Exam in Chemistry (test # 018). In particular, the following competencies apply: <ul style="list-style-type: none"> • 0001: Understand the practices of scientific inquiry and engineering design • 0002: Understand crosscutting concepts in the sciences and engineering • 0003: Understand the relationships between science, technology, and human activity in a global context • 0008: Understand the nomenclature and structure of inorganic and organic compounds 	
b. Physics		BA/BS in Chemistry or closely related field AND successful passage of Missouri Content Assessment Exam in Chemistry (test # 018). In particular, the following competencies apply: <ul style="list-style-type: none"> • 0001: Understand the practices of scientific inquiry and engineering design • 0002: Understand crosscutting concepts in the sciences and engineering • 0003: Understand the relationships between science, technology, and human activity in a global context • 0004: Understand the properties of matter • 0005: Understand atomic theory and the periodic table • 0007: Understand energy changes in chemical and physical processes 	
c. Earth Science		BA/BS in Chemistry or closely related field AND successful passage of Missouri Content Assessment Exam in Chemistry (test # 018). In particular, the following competencies apply: <ul style="list-style-type: none"> • 0001: Understand the practices of scientific inquiry and engineering design • 0002: Understand crosscutting concepts in the sciences and engineering • 0003: Understand the relationships between science, technology, and human activity in a global context 	

d. Environmental Science		BA/BS in Chemistry or closely related field AND successful passage of Missouri Content Assessment Exam in Chemistry (test # 018). In particular, the following competencies apply: <ul style="list-style-type: none"> • 0001: Understand the practices of scientific inquiry and engineering design • 0002: Understand crosscutting concepts in the sciences and engineering • 0003: Understand the relationships between science, technology, and human activity in a global context 	
Content Knowledge Area – Total Semester Hours			NA