



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

**CHEMISTRY, GRADES 9-12 POST-BACCALAUREATE**

EDUCATOR PREPARATION PROGRAM NAME <b>Columbia College</b>	EDUCATOR PREPARATION PROGRAM CODE <b>515712</b>
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**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 505/300 EDUC 365	Instructional Theory Techniques/Techniques of Teaching Teaching Middle School and Secondary Science	.75 1.5
b. Instructional Strategies and Techniques in Content Area Specialty	EDUC 505/300 EDUC 365	Instructional Theory Techniques/Techniques of Teaching Teaching Middle School and Secondary Science	.75 1.5
c. Assessment, Student Data, and Data-Based Decision-Making	EDUC 580/322	Methods of Effective Academic Evaluation/Educational Measurement and Assessment	3
d. Strategies for Content Literacy	EDUC 516/338	Reading and Writing Across the Curriculum/Content Reading and Writing	0
e. Critical Thinking and Problem Solving	EDUC 505/300 EDUC 375	Instructional Theory of Techniques/Techniques of Teaching Advanced Content Methods	.75 1
f. English Language Learning	EDUC 542 Or EDUC 600 Or EDUC 520	Law, Ethics, and Education Or Education Seminar for Teacher Candidates Or Methods of Teaching English Learners	0 3

**2. Individual Student Needs**

	Course Number	Course Title	Semester Hours
a. Psychological Development of the Child and Adolescent	EDUC 550 or EDUC 391 and 392 or EDUC 396	Human Development or Child Psychology and Adolescent Psychology or Child and Adolescent Development	3
b. Psychology/Education of the Exceptional Child	EDUC 525/390	Educating Exceptional Individuals/Education and Psychology of the Exceptional Child	1.5
c. Differentiated Learning	EDUC 375 EDUC 525/390	Advanced Content Methods Eduating Exceptional Individuals/Education and Psychology of the Exceptional Child	.75 0
d. Classroom Management	EDUC 563/311	Management of the Classroom Environment/Classroom and Behavior Management Techniques	1.5
e. Cultural Diversity	EDUC 555/SOCI 270	Development, Gender, and Cultural Differences/Minority Cultures and Relations	3
f. Educational Psychology	EDUC 560/230	Theories of Learning/Educational Psychology	3

3. Schools and the Teaching Profession			
	Course Number	Course Title	Semester Hours
a. Consultation and Collaboration	EDUC 525/390	Educating Exceptional Individuals/Education and Psychology of the Exceptional Child	1.5
b. Legal/Ethical Aspects of Teaching	EDUC 542/200	Law, Ethics, and Education	3
4. Secondary Literacy (Minimum of 6 semester hours)			
	Course Number	Course Title	Semester Hours
a. Reading and Writing in the Content Area	EDUC 516/338	Reading and Writing Across the Curriculum/Content Reading and Writing	3
b. Instructional Interventions for Students with Reading Deficits	EDUC 578/376	Adolescent Literacy Theory and Techniques/Adolescent Literacy	3
<b>Professional Requirements - Total Semester Hours</b>			<b>32.75 – 35.75</b>
B. Field and Clinical Experiences (Minimum of 10 semester hours)			
	Course Number	Course Title	Semester Hours
1. Early Field Experiences (Minimum of 1 semester hour with a minimum of 30 clock hours)	EDUC 505/300	Instructional Theory Techniques/Techniques of Teaching	.75
	EDUC 563/311	Management of the Classroom Environment/Classroom and Behavior Management Techniques	1.5
2. Mid-Level Field Experiences (Minimum of 1 semester hour with a minimum of 45 clock hours)	EDUC 516/338	Reading and Writing Across the Curriculum/Content Reading and Writing	0
	EDUC 365	Teaching Middle School and Secondary Science	0
	EDUC 375	Advanced Content Methods	1
3. Culminating Clinical Experiences (Minimum of 8 semester hours with a minimum of 12 weeks in 1 placement)	EDUC 698	Graduate Student Teaching	9
	Or EDUC 422	Or Student Teaching in the Secondary School	
	Or EDUC 425	Or Undergraduate Student Teaching	
<b>Field and Clinical Experiences - Total Semester Hours</b>			<b>12.25</b>
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 3 semester hours)	HIST 303 or BIOL/CHEM/ENVS 105	Science, Technology, and Humanity: A History or Essentials of Science	3
2. Chemistry Coursework – Minimum of 20 semester hours which must include			
a. Inorganic Chemistry	CHEM 322	Inorganic Chemistry	3
b. Analytical Chemistry	CHEM 335	Quantitative Analysis	3
c. Organic Chemistry	CHEM 310	Organic Chemistry I	3
d. Physical Chemistry	CHEM/PHYS 401	Introduction to Physical Chemistry/Chemical Physics	3
e. Biochemistry	BIOL/CHEM 420	Biochemistry I	3

f. Chemistry Electives	Choose five hours from the following: CHEM 108 CHEM 109  CHEM 110 CHEM 112 CHEM 230 CHEM 307 CHEM 312 CHEM 395 CHEM 399 CHEM 412 CHEM 422 CHEM 425 CHEM 490 CHEM 499	Choose 5 hours from the following: Physical Science Survey Chemistry for Biological and Health-Related Sciences Chemistry I Chemistry II Environmental Toxicology and Chemistry Analytical Chemistry II Organic Chemistry II Research Design in the Sciences Science Internship Advanced Experimental Chemistry Biochemistry II Forensic Chemistry I Senior Seminar Advanced Science Internship	5
3. Additional Science Coursework – Minimum of 12 semester hours which must include			
a. Biology	BIOL 110	Principles of Biology I	3
b. Physics	PHYS 111	College Physics I	3
c. Earth Science	GEOL 110	Introduction to Physical Geology	3
d. Environmental Science	ENVS 115	Introduction to Environmental Science	3
<b>Content Knowledge Area - Total Semester Hours</b>			<b>35</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).