



UNIFIED SCIENCE: CHEMISTRY, GRADES 9-12 - MAT (CNAS)

EDUCATOR PREPARATION PROGRAM NAME MISSOURI STATE UNIVERSITY	EDUCATOR PREPARATION PROGRAM CODE 119119
---	--

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 Certification, 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	SFR797	Advanced Studies in Teaching and Learning	2(9)
b. Instructional Strategies and Techniques in Content Area Specialty	SFR797	Advanced Studies in Teaching and Learning	2(9)
c. Assessment, Student Data, and Data-Based Decision-Making	SFR797	Advanced Studies in Teaching and Learning	2(9)
d. Strategies for Content Literacy	RDG710	Content Area Literacy	.25(3)
e. Critical Thinking and Problem Solving	SFR797	Advanced Studies in Teaching and Learning	1(9)
f. English Language Learning	RDG710 RDG574 or RDG640	Content Area Literacy Analysis and Correction of Difficulties in Literacy	0(3) .5(3)
2. Individual Student Needs			
	Course Number	Course Title	Semester Hours
a. Psychological Development of the Child and Adolescent	PSY710	Psychology of Education	1.25(3)
b. Psychology/Education of the Exceptional Child	SPE715	Foundations in Special Education	3
c. Differentiated Learning	SFR797 RDG710 RDG574 or RDG640	Advanced Studies in Teaching and Learning Content Area Literacy Analysis and Correction of Difficulties in Literacy	1(9) .25(3) 0(3)
d. Classroom Management	SFR797 PSY710 SCI783	Advanced Studies in Teaching and Learning Psychology of Education Internship in Teaching I	.25(9) .25(3) 1(3)
e. Cultural Diversity	RDG560 or RDG660 or RDG665 SFR797	Diversity Issues in Literacy and Content Area Instruction Cultural Diversity in Literacy and Instruction: Classrooms and Community Advanced Studies in Teaching and Learning	2(3) 2(3) .25(9)
f. Educational Psychology	PSY710	Psychology of Education	1.5(3)
3. Schools and the Teaching Profession			
	Course Number	Course Title	Semester Hours
a. Consultation and Collaboration	SFR797 RDG710 SCI784	Advanced Studies in Teaching and Learning Content Area Literacy Internship in Teaching II	.25(9) 0(3) 1(10)
b. Legal/Ethical Aspects of Teaching	SFR797	Advanced Studies in Teaching and Learning	.25(9)

4. Secondary Literacy (Minimum of six semester hours)			
	Course Number	Course Title	Semester Hours
a. Reading and Writing in the Content Area	RDG710 RDG560 or RDG660 or RDG665	Content Area Literacy Diversity Issues in Literacy and Content Area Instruction	2.5(3) .5(3)
		Cultural Diversity in Literacy and Instruction: Classrooms and Community	.5(3)
b. Instructional Interventions for Students with Reading Deficits	RDG574 or RDG640 RDG560 or RDG660 or RDG665	Analysis and Correction of Difficulties in Literacy	2.5(3)
		Diversity Issues in Literacy and Content Area Instruction	.5(3)
		Cultural Diversity in Literacy and Instruction: Classrooms and Community	.5(3)
Professional Requirements - Total Semester Hours			26
B. Field and Clinical Experiences (Minimum of ten semester hours)			
	Course Number	Course Title	Semester Hours
a. Early Field Experiences (Minimum of one semester hour with a minimum of 30 clock hours)	SCI783	Internship in Teaching I	1(3)
b. Mid-Level Field Experiences (Minimum of one semester hour with a minimum of 45 clock hours)	SCI783	Internship in Teaching I	1(3)
c. Culminating Clinical Experiences (Minimum of eight semester hours with a minimum of 12 weeks in one placement)	SCI784	Internship in Teaching II	9(10)
Field and Clinical Experiences - Total Semester Hours			11
C. Unified Science: Chemistry Content Knowledge Area (Minimum of 50 semester hours)			
	Course Number	Course Title	Semester Hours
1. History/Philosophy of Science and Technology (three semester hours)	SCI505	Intellectual Foundations of Science and Technology	3
2. Biology – six semester hours which must include:			
a. Zoology with lab	BIO121	General Biology I	4
b. Botany with lab	BIO122	General Biology II	4
3. Chemistry with labs (six semester hours)	CHM160 CHM161 CHM170 CHM171	General Chemistry I General Chemistry I Lab General Chemistry II General Chemistry II Lab	4 1 3 .5(1)
4. Physics with labs (six semester hours)	PHY123 and PHY124 or PHY203 and PHY204	Introduction to Physics I and Introduction to Physics II or Foundations of Physics I and Foundations of Physics II	4 4 5 5
5. Earth Science – six semester hours which must include:			
a. Geology	GLG110 or GLG171	Principles of Geology Environmental Geology	4 3
b. Meteorology	GRY135	Principles of Weather and Climate	4
6. Environmental Science (three semester hours)	CHM460	Environmental Chemistry: Water and Land	3
7. Additional Chemistry coursework – 20 semester hours which must include:			
a. Organic Chemistry	CHM201/202 or CHM342 and CHM343 or CHM342 and CHM344	Essentials of Organic Chemistry/Lab Organic Chemistry I and Organic Chemistry II Organic Chemistry I and Organic Chemistry II	5 5 5 3
b. Physical Chemistry	CHM505	Fundamentals of Physical Chemistry	4
c. Quantitative Analysis	CHM302	Quantitative Analysis	5
d. Biochemistry	CHM352	Introduction to Biochemistry	3

e. Qualitative Analysis	CHM171	General Chemistry II Lab	.5(1)
f. Advanced Analysis	CHM435 CHM463 Choose one: CHM201 CHM342	Investigations in Chemistry for Teachers Environmental Analysis Choose one (1): Essentials of Organic Chemistry or Organic Chemistry I	1 0(1) 0(3-5) 0(5)
g. Environmental Chemistry	CHM463 or CHM462	Environmental Analysis Environmental Chemistry: Water and Land Lab	1 2
Content Knowledge Area - Total Semester Hours			MAT= 57-66

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), 6th 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.