



**BIOLOGY, GRADES 9-12 – MAT (CNAS)**

EDUCATOR PREPARATION PROGRAM NAME <b>MISSOURI STATE UNIVERSITY</b>	EDUCATOR PREPARATION PROGRAM CODE <b>119119</b>
---	--

**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 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)**

<b>1. Content Planning and Delivery</b>			
	<b>Course Number</b>	<b>Course Title</b>	<b>Semester Hours</b>
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)
<b>2. Individual Student Needs</b>			
	<b>Course Number</b>	<b>Course Title</b>	<b>Semester Hours</b>
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)
<b>3. Schools and the Teaching Profession</b>			
	<b>Course Number</b>	<b>Course Title</b>	<b>Semester Hours</b>
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  Cultural Diversity in Literacy and Instruction: Classrooms and Community	2.5(3) .5(3)  .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 Diversity Issues in Literacy and Content Area Instruction  Cultural Diversity in Literacy and Instruction: Classrooms and Community	2.5(3) .5(3)  .5(3)
<b>Professional Requirements - Total Semester Hours</b>			<b>26</b>
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)
<b>Field and Clinical Experiences - Total Semester Hours</b>			<b>11</b>
C. Biology 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)	SCI505	Intellectual Foundations of Science and Technology	3
2. Biology Coursework – Minimum of 20 semester hours which must include:			
a. Cell Biology	BIO121 BIO210 or BIO310	General Biology I Elements of Microbiology  Microbiology	4 3  5
b. Plant Form and Function	BIO122	General Biology II	4
c. Animal Form and Function	BIO361 or BMS307 or BMS308	General Physiology  Human Anatomy  Human Physiology	4  4  4
d. Genetics	BIO235/236 or BMS230 BMS232 or BMS231	Genetics/Lab  Human Genetics Human Genetics Lab  Human Genetics with Laboratory	4  3 1  4
e. Evolution	BIO515	Evolution	3

f. Biology Electives	Choose from the following:	300 Level or above to reach a minimum of 32 hours of Biology coursework (3-5 hours)	
	BIO334	Plant Taxonomy	3
	BIO339	Identification of Woody Plants	2
	BIO355	Developmental Biology	4
	BIO367/368	General Ecology/Lab	4
	BIO370	Invertebrate Zoology	4
	BIO371	Introduction to Entomology	3
	BIO373	Principles of Wildlife Management	3
	BIO380	Comparative Vertebrate Anatomy	5
	BIO485	Marine Conservation	3
	BIO499	Special Topics in Biology	1-3
	BIO501	Natural History Museum Techniques	2
	BIO505	Human Nature	3
	BIO508	Environmental Microbiology	3
	BIO511	Immunology	4
	BIO512	Industrial Microbiology	3
	BIO520	Pathogenic Microbiology	3
	BIO521	Marine Science for Teachers I	2
	BIO522	Marine Science for Teachers Lab	1
	BIO527	Field Biology	1-4
	BIO550	Statistical Methods for Biologists	3
	BIO560	Population Genetics and Evolutionary Mech.	3
	BIO561	Environ. Issues Education and Interpretation	2
	BIO564	Ozarks Natural Communities	2
	BIO571	Comparative Animal Physiology	4
	BIO573	Ornithology	3
	BIO575	Ichthyology	3
	BIO576	Herpetology	3
	BIO577	Mammalogy	3
	BIO597	Topics in Biology	1-4
3. Additional Science Coursework – Minimum of 12 semester hours which must include:			
a. Chemistry	CHM116/117 or CHM160/161 and CHM170/171	Fundamentals of Chemistry/Lab  General Chemistry I/Lab and General Chemistry II/Lab	5  5 4
b. Physics	PHY123 PHY124	Introduction to Physics I Introduction to Physics II	4 4
c. Earth Science	Choose one: GLG110 GRY135 GLG171	Choose one (1): Principles of Geology or Principles of Weather and Climate or Environmental Geology	4 4 3
d. Environmental Science	BIO367/368	General Ecology/Lab	4
<b>Content Knowledge Area - Total Semester Hours</b>			<b>MAT=48-55</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).