



BIOLOGY, 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 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	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	Content Area Literacy	0(3)
	RDG640 or	Analysis and Correction of Difficulties in Literacy	.5(3)
	RDG574/624	Analysis and Correction of Difficulties in Adolescent Literacy	.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	Advanced Studies in Teaching and Learning	1(9)
	RDG710	Content Area Literacy	.25(3)
	RDG640 or RDG574/624	Analysis and Correction of Difficulties in Literacy Analysis and Correction of Difficulties in Adolescent Literacy	0(3) 0(3)
d. Classroom Management	SFR797	Advanced Studies in Teaching and Learning	.25(9)
	PSY710	Psychology of Education	.25(3)
	SCI783	Internship in Teaching I	1(3)
e. Cultural Diversity	RDG560 or RDG660 or RDG665	Diversity Issues in Literacy and Content Area Instruction	2(3)
		Cultural Diversity in Literacy and Instruction: Classrooms and Community	2(3)
	SFR797	Advanced Studies in Teaching and Learning	.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 Cultural Diversity in Literacy and Instruction: Classrooms and Community	2.5(3) .5(3) .5(3)
b. Instructional Interventions for Students with Reading Deficits	RDG640 or RDG574/624 RDG560 or RDG660 or RDG665	Analysis and Correction of Difficulties in Literacy Analysis and Correction of Difficulties in Adolescent Literacy Diversity Issues in Literacy and Content Area Instruction Cultural Diversity in Literacy and Instruction: Classrooms and Community	2.5(3) 2.5(3) .5(3) .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. 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 BIO334 BIO339 BIO355 BIO367/368 BIO370 BIO371 BIO373 BIO380 BIO485 BIO499 BIO501 BIO505 BIO508 BIO511 BIO512 BIO520 BIO521 BIO522 BIO527 BIO550 BIO560 BIO561 BIO564 BIO571 BIO573 BIO575 BIO576 BIO577 BIO597	300 Level or above to reach a minimum of 32 hours of Biology coursework (3-5 hours) Plant Taxonomy Identification of Woody Plants Developmental Biology General Ecology/Lab Invertebrate Zoology Introduction to Entomology Principles of Wildlife Management Comparative Vertebrate Anatomy Marine Conservation Special Topics in Biology Natural History Museum Techniques Human Nature Environmental Microbiology Immunology Industrial Microbiology Pathogenic Microbiology Marine Science for Teachers I Marine Science for Teachers Lab Field Biology Statistical Methods for Biologists Population Genetics and Evolutionary Mech. Environ. Issues Education and Interpretation Ozarks Natural Communities Comparative Animal Physiology Ornithology Ichthyology Herpetology Mammalogy Topics in Biology	 3 2 4 4 4 3 3 5 3 1-3 2 3 3 4 3 3 3 2 1 1-4 3 3 2 2 4 3 3 3 3 3 3 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
Content Knowledge Area - Total Semester Hours			MAT=48-55

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.