



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

BIOLOGY, GRADES 9-12

EDUCATOR PREPARATION PROGRAM NAME MISSOURI STATE UNIVERSITY	EDUCATOR PREPARATION PROGRAM CODE 119119
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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 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	SEC302	General Methods of Instruction in the Middle and Secondary Schools	1(3)
b. Instructional Strategies and Techniques in Content Area Specialty	SCI314	Techniques and Technology in Science Laboratory Teaching	1(3)
	SCI414	Teaching of Secondary School Natural Science	1(3)
c. Assessment, Student Data, and Data-Based Decision-Making	SCI314	Techniques and Technology in Science Laboratory Teaching	1(3)
	SCI414	Teaching of Secondary School Natural Science	0(3)
d. Strategies for Content Literacy	RDG474 or RDG710	Reading and Writing in the Content Fields, Content Area Literacy	0(3)
e. Critical Thinking and Problem Solving	SEC302	General Methods of Instruction in the Middle and Secondary Schools	.5(3)
	EDC350	School and Society	1.5(3)
f. English Language Learning	RDG474 or RDG710	Reading and Writing in the Content Fields, Content Area Literacy	0(3)
	RDG574 or RDG640	Analysis and Correction of Difficulties in Literacy	0(3)

2. Individual Student Needs

	Course Number	Course Title	Semester Hours
a. Psychological Development of the Child and Adolescent	PSY360 or PSY710	Educational Psychology, Psychology of Education	1.5(3)
b. Psychology/Education of the Exceptional Child	SPE340 or SPE715	Educational Alternatives for Exceptional Students, Foundations in Special Education	2-3
c. Differentiated Learning	SEC302	General Methods of Instruction in the Middle and Secondary Schools	.5(3)
	RDG474 or RDG710	Reading and Writing in the Content Fields, Content Area Literacy	0(3)
	RDG574 or RDG640	Analysis and Correction of Difficulties in Literacy	0(3)
d. Classroom Management	SCI314	Techniques and Technology in Science Laboratory Teaching	1(3)
	SCI414	Teaching of Secondary School Natural Science	1(3)
e. Cultural Diversity	EDC345	Introduction to Multicultural Education and Diversity	3

f. Educational Psychology	PSY360 or PSY710	Educational Psychology, Psychology of Education	1.5(3)
3. Schools and the Teaching Profession			
	Course Number	Course Title	Semester Hours
a. Consultation and Collaboration	RDG474 or RDG710	Reading and Writing in the Content Fields, Content Area Literacy	0(3)
b. Legal/Ethical Aspects of Teaching	EDC350 SCI493 SCI494	School and Society Supervised Teaching Supervised Teaching	1.5(3) 1(6) 1(6)
4. Secondary Literacy (Minimum of six semester hours)			
	Course Number	Course Title	Semester Hours
a. Reading and Writing in the Content Area	RDG474 or RDG710	Reading and Writing in the Content Fields, Content Area Literacy	3
b. Instructional Interventions for Students with Reading Deficits	RDG574 or RDG640	Analysis and Correction of Difficulties in Literacy	3
Professional Requirements - Total Semester Hours			26-27
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)	SEC302	General Methods of Instruction in the Middle and Secondary Schools	1(3)
2. Mid-Level Field Experiences (Minimum of one semester hour with a minimum of 45 clock hours)	SCI314	Techniques and Technology in Science Laboratory Teaching	0(3)
	SCI414	Teaching of Secondary School Natural Science	1(3)
3. Culminating Clinical Experiences (Minimum of eight semester hours with a minimum of 12 weeks in one placement)	SCI493	Supervised Teaching	5(6)
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Field and Clinical Experiences - Total Semester Hours			12
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	General Biology I	4
	BIO210	Elements of Microbiology	3
	or BIO310	Microbiology	5
b. Plant Form and Function	BIO122	General Biology II	4
	BIO215	Introduction to the Diversity of Life	2
c. Animal Form and Function	BIO361	General Physiology	4
	or BMS307	Human Anatomy	4
	or BMS308	Human Physiology	4
d. Genetics	BIO235	Genetics	4
	or BMS230 and BMS232	Human Genetics Human Genetics Lab	3 1
	or BMS231	Human Genetics with Laboratory	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
	BIO369	General Ecology	4
	BIO370	Invertebrate Zoology	4
	BIO371	Introduction to Entomology	3
	BIO373	Principles of Wildlife Management	3
	BIO380	Comparative Vertebrate Anatomy	5
	BIO485	Marine Conservation	1-3
	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 9
b. Physics	PHY100 or PHY123 and PHY124	Survey of Physics with Lab Introduction to Physics I and Introduction to Physics II	4 8
c. Earth Science	GLG110 or GRY135 or GLG171	Principles of Geology Principles of Weather and Climate Environmental Geology	4 4 3
d. Environmental Science	BIO369	General Ecology	4
Content Knowledge Area - Total Semester Hours			BSED/PB = 48-57

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-