

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

## MASTER OF ARTS IN TEACHING (MAT) 9-12 UNIFIED SCIENCE: BIOLOGY (CNAS)

EDUCATOR PREPARATION PROGRAM NAME

EDUCATOR PREPARATION PROGRAM CODE

MISSOURI STATE UNIVERSITY

119119

## **INSTRUCTIONS**

Please complete Educator Preparation Program (EPP) Name & EPP Code above. The EPP Code may be located at <a href="https://dese.mo.gov/sites/default/files/EPP-Code-Name.pdf">https://dese.mo.gov/sites/default/files/EPP-Code-Name.pdf</a>

## 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 <a href="DESE.MoSPETransition@dese.mo.gov">DESE.MoSPETransition@dese.mo.gov</a> on or before the date established in the Transition Plan.

QUESTIONS: Contact Educator Preparation, 573/751-1668 or <a href="mailto:DESE.MoSPETransition@dese.mo.gov">DESE.MoSPETransition@dese.mo.gov</a>

<ul> <li>Professional Requirements (Minimum of 26 semester hours)</li> <li>Content Planning and Delivery</li> </ul>						
1. Content Flamming 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)			
<ul> <li>c. Assessment, Student Data, and Data-Based Decision-Making</li> </ul>	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)			
Individual Student Needs	-	<u> </u>				
	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	Diversity Issues in Literacy and Content Area Instruction	2(3)			
	RDG665	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	Semeste Hours			
a. Consultation and Collaboration	SFR797	Advanced Studies in Teaching and Learning	.25(9)			
	RDG710	Content Area Literacy	0(3)			
	SCI784	Internship in Teaching II	1(10)			
<ul><li>b. Legal/Ethical Aspects of Teaching</li></ul>	SFR797	Advanced Studies in Teaching and Learning	.25(9)			

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.

a. Reading and Writing in the Content Area BR0590 or RD6660 RD6660 RD6660 Reading Deficits  b. Instructional Interventions for Students with Reading Deficits Reading Deficits  b. Instructional Interventions for Students with Reading Deficits Reading Deficits  b. Instructional Interventions for Students with Reading Deficits Reading Deficits  b. Instructional Interventions for Students with Reading Deficits Reading Deficits  b. Instructional Interventions for Students with Reading Deficits Reading Deficits  b. Instructional Interventions for Students with Reading Deficits Reading Deficits  b. Instructional Interventions for Students with Reading Deficits Reading Deficits  b. Instructional Interventions for Students with Reading Deficit of Robesto Reading Deficits Reading Deficits  b. Instruction of Robesto Reading Robesto Robesto Reading Robesto Robesto Reading Robesto Robesto Reading Robesto Robes	Secondary Literacy (Minimum of six semester hours)					
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B. Field and Clinical Experiences (Minimum of the semester hours)  a. Early Faid Experiences (Minimum of semester hours)  b. Mid-Level Field Experiences (Minimum of the semester hours)  c. C. Unifield Science: Biology Content Knowledge Area (Minimum of sight semester hours) with a minimum of sight semester hours which must include:  a. Zoology with lab b. Botany with lab b. Botany with lab c. Scheme and Technology (HMR0) included in property with lab sigx semester hours)  Course Number  Field and Clinical Experiences (Minimum of the semester hours)  Course Number  Internship in Teaching I  1(3)  1(3)  1(3)  1(4)  1(4)  1(5)  1(4)  1(5)  1(5)  1(6)  1(7)  1(7)  1(7)  1(8)  1(9)  1(9)  1(9)  1(9)  1(1)  1(1)  1(1)  1(1)  1(2)  1(3)  1(4)  1(4)  1(5)  1(5)  1(6)  1(6)  1(7)  1(7)  1(7)  1(8)  1(9)  1(9)  1(9)  1(1)  1(1)  1(1)  1(1)  1(1)  1(2)  1(3)  1(4)  1(4)  1(5)  1(5)  1(6)  1(7)  1(7)  1(7)  1(8)  1(9)  1(9)  1(1)		a. Reading and Writing in the Content Area		Content Area Literacy		
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B. Instructional Interventions for Students with Reading Deficits  B. Instructional Interventions for Students with Reading Deficits  Reading Deficits  Reading Deficits  REAGE40  RDG560  RDG660  RDG				Instruction		
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B. Field and Clinical Experiences (Minimum of ten semester hours)  a. Early Field Experiences (Minimum of one semester hour with a minimum of 30 clock hours)  b. Mid-Level Field Experiences (Minimum of one semester hour with a minimum of 30 clock hours)  c. Culminating Clinical Experiences (Minimum of one semester hour with a minimum of 45 clock hours)  c. Culminating Clinical Experiences (Minimum of 12 weeks in one placement)  Field and Clinical Experiences - Total Semester Hours  11			Duefeesieur		00	
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Field and Clinical Experiences - Total Semester Hours 11  C. Unified Science: Biology Content Knowledge Area (Minimum of 50 semester hours)  Course Number Course Title Hours  1. History/Philosophy of Science and Technology (three semester hours)  2. Biology – six semester hours which must include:  a. Zoology with lab BiO121 General Biology I 2(4)  b. Botany with lab BiO122 General Biology I 4  4. Physics with labs (six semester hours)  PHY123 Introduction to Physics I 4  5. Earth Science – six semester hours which must include:  a. Geology GLG110 Principles of Geology 4  b. Meteorology GRY135 Principles of Weather and Climate 3(4)  Finditional Biology coursework – 20 semester hours which must include:  a. Zoology  BiO370 Introduction to the Diversity of Life 1(2)  or BiO380 Comparative Vertebrate Anatomy 5  or BiO373 Ornithology 3  or BiO375 Ornithology 3  lichthyology 3  or BiO375 Ornithology 3  lichthyology 3  lichthyology 3  lichthyology 3  or BiO375 Ornithology 3  lichthyology 4  lichthyology 3  lichthyology 3  lichthyology 3  lichthyology 3  lichth	-	c. Culminating Clinical Experiences (Minimum	SCI784	Internship in Teaching II	9(10)	
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(three semester hours)  2. Biology – six semester hours which must include:  a. Zoology with lab  b. Botany with lab  chemistry with labs (six semester hours)  CHM160/161 CHM170/171 General Biology II  4. Physics with labs (six semester hours)  PHY123 PHY123 PHY124 Introduction to Physics I  5. Earth Science – six semester hours which must include:  a. Geology  GLG110  Principles of Geology  BIO367/368 GRY135 Principles of Weather and Climate  3(4)  7. Additional Biology coursework – 20 semester hours which must include:  a. Zoology  BIO371 or BIO370 Or BIO371 Or BIO371 Or BIO373 Or BIO375 Or BIO375 Or BIO376 BIO377 Or BIO376 BIO377 BIO376 BIO376 BIO376 BIO376 BIO376 BIO376 BIO377 BIO377 BIO377 BIO377					Hours	
2. Biology – six semester hours which must include:  a. Zoology with lab b. Botany with lab b. Botany with lab c. CHM160/161 c. CHM160/161 c. CHM170/171 d. General Chemistry I/Lab c. CHM170/171 d. General Chemistry I/Lab d. A 4. Physics with labs (six semester hours) PHY123 PHY123 PHY124 pHY124 pHY124 physics with labs (six semester hours which must include: a. Geology b. Meteorology GRY135 Earth Science (three semester hours) BIO367/368 GRY135 Principles of Geology Additional Biology coursework – 20 semester hours which must include: a. Zoology BIO370 Introduction to the Diversity of Life or BIO370 Introduction to Entomology Introduction to Entomology Introduction to Entomology Introduction to Entomology Active Transport of Sementary Introduction to the Diversity of Life Introduction to Entomology Introduction to Entomology Active Transport Introduction to Entomology Introduction to Entomology Introduction to Entomology Active Transport Introduction to Entomology Active Tran			SCI505		3	
a. Zoology with lab b. Botany with lab b. BiO122 General Biology II 4  3. Chemistry lift.ab 5 CHM160/161 CHM170/171 General Chemistry lift.ab 5 General Chemistry lift.ab 4  4. Physics with labs (six semester hours) PHY123 PHY124 Introduction to Physics I 4  5. Earth Science – six semester hours which must include: a. Geology GLG110 Principles of Geology 4 b. Meteorology GRY135 Principles of Weather and Climate 3(4) GRY135 Principles of Weather and Climate 1(4)  7. Additional Biology coursework – 20 semester hours which must include: a. Zoology  BIO215 or BIO370 or BIO371 Introduction to the Diversity of Life 1(2) or BIO371 Introduction to Entomology 3 or BIO380 Or BIO573 Or BIO575 Or BIO575 Ichthyology 3 Ichthyology 4 Ichthyology 3 Ichthyology 4				Technology		
b. Botany with lab 3. Chemistry with labs (six semester hours) CHM160/161 General Chemistry I/Lab 5. CHM170/171 General Chemistry I/Lab 4. Physics with labs (six semester hours) PHY123 Introduction to Physics I Farth Science – six semester hours which must include:  a. Geology B. Meteorology GRY135 Principles of Geology BIO367/368 General Ecology/Lab (24) General Chemistry I/Lab 4  4  5. Earth Science – six semester hours which must include:  a. Geology BIO367/368 General Ecology/Lab (24) GRY135 Principles of Weather and Climate (14)  7. Additional Biology coursework – 20 semester hours which must include:  a. Zoology BIO370 Introduction to the Diversity of Life (12) or BIO371 Introduction to Entomology (13) or BIO380 Comparative Vertebrate Anatomy (14)  5. Earth Science – six semester hours which must include:  a. Zoology BIO371 Introduction to the Diversity of Life (12) or BIO370 Or BIO370 Or BIO370 Or BIO370 Or BIO370 Or BIO370 Introduction to Entomology (14) Or BIO575 Introduction to Entomology (15) Or BIO575 Ichthyology (15) Or BIO576 Ichthyology (15) O	۷.	biology – six semester flours which must include.				
3. Chemistry with labs (six semester hours)  CHM160/161 CHM70/171 General Chemistry I/Lab 4 4. Physics with labs (six semester hours) PHY123 PHY124 Introduction to Physics I 4 5. Earth Science – six semester hours which must include: a. Geology GLG110 Principles of Geology 4 b. Meteorology GRY135 Principles of Weather and Climate 3(4) 6. Environmental Science (three semester hours) BIO367/368 GRY135 Principles of Weather and Climate 1(4) 7. Additional Biology coursework – 20 semester hours which must include: a. Zoology BIO370 or BIO370 BIO380 Or BIO380 Or BIO380 Or BIO573 Or BIO575 Ichthyology 3 a a b chemistry I/Lab 5 General Chemistry I/Lab 4 b htroduction to Physics I 4 Introduction to Physics II 4 b lintroduction to Physics II 4 chemistry I/Lab 5 General Chemistry I/Lab 4 lintroduction to Physics II 4 b lintroduction to Physics II 4 chemistry I/Lab 5 General Chemistry I/Lab 4 lintroduction to Physics II 4 chemistry I/Lab 5 General Chemistry I/Lab 6 General Chemistry I/Lab 6 Herpetology  4 Introduction to Physics II 4 chemistry I/Lab 6 General Chemistry I/Lab 6 General Chemistry I/Lab 6 General Chemistry I/Lab 6 Herpetology  5 General Chemistry I/Lab 6 Herpetology  4 Introduction to Physics I A Introduction to the Diversity of Life 1(2) Comparative Vertebrate Anatomy 5 Ormithology 3 or BIO576 BIO576 Great Introduction to Entomology 3 Comparative Vertebrate Anatomy 5 Comparative Vertebrate Anatomy 5 Comparative Vertebrate Anatomy 5 Comparative Vertebrate Anatomy 7 Comparative Vertebrate Anatomy 8 Comparative Vertebrate Anatomy 9 Comparative Vertebrate Ana	;	a. Zoology with lab	BIO121	General Biology I	2(4)	
CHM170/171 General Chemistry II/Lab 4 4. Physics with labs (six semester hours) PHY123 Introduction to Physics I 4 5. Earth Science – six semester hours which must include:  a. Geology GLG110 Principles of Geology 4 b. Meteorology GRY135 Principles of Weather and Climate 3(4) 6. Environmental Science (three semester hours) BIO367/368 GRY135 Principles of Weather and Climate 1(4) 7. Additional Biology coursework – 20 semester hours which must include:  a. Zoology BIO370 Introduction to the Diversity of Life or BIO370 or BIO371 Introduction to Entomology 3 or BIO373 Or BIO373 Or BIO573 Or BIO575 Or BIO575 Or BIO575 Ichthyology 3 or BIO575 Or BIO576 Herpetology 3 or BIO576 Herpetology 3 or BIO576 Or BIO576 Herpetology 3 and BIO576 Or BIO576 Or BIO576 Herpetology 3 and BIO576 Or BIO576 Herpetology 3 and BIO576 Or BIO576 Herpetology 3 and BIO576 Or BIO576 BIO576 DICHAPOTE AND BIO576						
4. Physics with labs (six semester hours) PHY123 PHY124 Introduction to Physics I 4 PHY124 Introduction to Physics I 1 PHY124 Introduction to Physics I 1 PHY124 Introduction to Physics I 1 Introduction to Physics I Introduction to Physics II Intro	3.	Chemistry with labs (six semester hours)				
5. Earth Science – six semester hours which must include: a. Geology b. Meteorology 6. Environmental Science (three semester hours) 7. Additional Biology coursework – 20 semester hours which must include: a. Zoology BIO215 or BIO370 BIO371 or BIO373 Or BIO573 or BIO575 or BIO575 or BIO575 or BIO576 BIO576 Or BIO576 BIO576 Or BIO576 BIC576 BIC5	1	Dhysics with labs (six somester hours)				
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a. Geology b. Meteorology GRY135 Principles of Geology 4 Environmental Science (three semester hours) GRY135 Principles of Weather and Climate 3(4) GRY135 General Ecology/Lab GRY135 Principles of Weather and Climate 2(4) Principles of Weather and Climate 1(4)  7. Additional Biology coursework – 20 semester hours which must include:  a. Zoology  BIO215 or BIO370 or BIO371 or BIO380 Or BIO380 Comparative Vertebrate Anatomy or BIO573 or BIO575 or BIO575 Ichthyology 3 or BIO576 Herpetology 3 Herpetology	5.	Earth Science – six semester hours which must		with a district of the state of		
b. Meteorology 6. Environmental Science (three semester hours) BIO367/368 GRY135 GRY13	İ	include:				
6. Environmental Science (three semester hours)  BIO367/368 GRY135  General Ecology/Lab Principles of Weather and Climate  2(4) 1(4)  7. Additional Biology coursework – 20 semester hours which must include:  a. Zoology  BIO215 or BIO370 or BIO371 Introduction to the Diversity of Life 1(2)  Introduction to Entomology 3 or BIO380 Or BIO373 Or BIO573 Or BIO575 Or BIO575 Ichthyology 3 or BIO576 Herpetology 3  The principles of Weather and Climate 1(4)  2(4) 1(4) 1(4) 1(4) 1(4) 1(4) 1(4) 1(4) 1		0,		, 0,		
GRY135 Principles of Weather and Climate 1(4)  7. Additional Biology coursework – 20 semester hours which must include:  a. Zoology  BIO215 Introduction to the Diversity of Life or BIO370 Invertebrate Zoology  Figure 1 Introduction to Entomology  Figure 2 Introduction to Entomology  Figure 3 Introduction to Entomology  Figure 4 Introduction t						
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hours which must include:  a. Zoology  BIO215 Introduction to the Diversity of Life or BIO370 Invertebrate Zoology or BIO371 Introduction to Entomology 3 or BIO380 Comparative Vertebrate Anatomy 5 or BIO573 Ornithology 3 or BIO575 Ichthyology 3 or BIO575 Ichthyology 3 or BIO576 Herpetology 3 or BIO576 Herpetology 3 or BIO576 Herpetology 3 3 or BIO576 Her	7.	Additional Biology coursework – 20 semester	CITTOO	1 morphos of vicalities and omnate	1(4)	
or BIO370 Invertebrate Zoology or BIO371 Introduction to Entomology or BIO380 Comparative Vertebrate Anatomy or BIO573 Ornithology or BIO575 Ichthyology or BIO576 Herpetology or		hours which must include:				
BIO370 Invertebrate Zoology 4 or BIO371 Introduction to Entomology 3 or BIO380 Comparative Vertebrate Anatomy 5 or BIO573 Ornithology 3 or BIO575 Ichthyology 3 or BIO576 Herpetology 3	;	a. Zoology		Introduction to the Diversity of Life	1(2)	
or BIO371 Introduction to Entomology 3 or BIO380 Comparative Vertebrate Anatomy 5 or BIO573 Ornithology 3 or BIO575 Ichthyology 3 or BIO576 Herpetology 3				Invertebrate Zeelegy	4	
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or BIO573 Ornithology 3 or BIO575 Ichthyology 3 or BIO576 Herpetology 3					_	
BIO573 Ornithology 3 or BIO575 Ichthyology 3 or BIO576 Herpetology 3 or				Comparative Vertebrate Anatomy	5	
or BIO575   Ichthyology   3 or BIO576   Herpetology   3 or				Ornithology	3	
or BIO576 or Herpetology 3			I BIO573		•	
BIO576 Herpetology 3				Cirialiology		
or			or	0,	3	
			or BIO575 or	Ichthyology		
			or BIO575 or BIO576	Ichthyology		

b.	Botany	BIO215	Introduction to the Diversity of life	1(2)
		or		
		BIO334	Plant Taxonomy	3
		or		
		BIO339	Identification of Woody Plants	2
		or		
		BIO564	Ozarks Natural Communities	2
		or		
		BIO533	Wetland Ecology	4
C.	Genetics	BIO235/236	Genetics/Lab	4
d.	Cell/Biochemistry	BIO121	General Biology I	2(4)
e.	Microbiology	Choose one	Choose one (1)	
		BIO210	Elements of Microbiology or	3
		BIO310	Microbiology	5
f.	Anatomy and Physiology	BIO361	General Physiology	4
g.	Ecology	BIO367/368	General Ecology/Lab	2(4)
h.	Evolution	BIO515	Evolution	3
Content Knowledge Area - Total Semester Hours				