



UNIFIED SCIENCE: PHYSICS, GRADES 9-12

EDUCATOR PREPARATION PROGRAM NAME
UNIVERSITY OF MISSOURI (COLUMBIA)

EDUCATOR PREPARATION PROGRAM CODE
116116

INSTRUCTIONS

Please complete Educator Preparation Program (EPP) Name & EPP Code above.

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	LTC 1155 LTC 4631 LTC 4641	Orientation Teach. Sci. Second. Sch.: Phil., Hist., Sci. Inq., Curr., Assm. & Teach I Teaching Middle and Secondary Science II	1 See Below See Below
b. Instructional Strategies and Techniques in Content Area Specialty	IS_LT 4467 LTC 4631 LTC 4641	Technology to enhance Learning Teach.Sci.Second.Sch.:Phil.,Hist., Sci.Inq.,Curr., Assm., & Teach I Teaching Middle and Secondary Science II	3 1 0.5
c. Assessment, Student Data, and Data-Based Decision-Making	ESC_PS 2010 ED_LPA 4060	Inquiry into Learning I Inquiry into Schools, Community & Society II	1.0 0.75
d. Strategies for Content Literacy	SPC_ED 4020 LTC 4560	Teaching the Exceptional Learner Reading & Writing in the Content Area I	0.75 See Below
e. Critical Thinking and Problem Solving	LTC 4631 LTC 4641	Teach.Sci.Second.Sch.:Phil.,Hist., Sci.Inq.,Curr., Assm., & Teach I Teaching Middle and Secondary Science II	1 0.5
f. English Language Learning	LTC 4460	Teaching English to Speakers of Other Languages	3

2. Individual Student Needs

	Course Number	Course Title	Semester Hours
a. Psychological Development of the Child and Adolescent	ESC_PS 2010 LTC 2200	Inquiry into Learning I School Health & Student Wellbeing	1.0 1.5
b. Psychology/Education of the Exceptional Child	SPC_ED 4020	Teaching the Exceptional Learner	0.75
c. Differentiated Learning	SPC_ED 4020	Teaching the Exceptional Learner	0.75
d. Classroom Management	SPC_ED 4310	Behavioral Management for Exceptional Students	3
e. Cultural Diversity	LTC 2040 ED_LPA 4060 LTC 2200	Inquiry into Schools, Community & Society I Inquiry into Schools, Community & Society II School Health & Student Wellbeing	3 0.75 1.5
f. Educational Psychology	ESC_PS 2010	Inquiry into Learning I	1.0

3. Schools and the Teaching Profession

	Course Number	Course Title	Semester Hours
a. Consultation and Collaboration	ED_LPA 4060	Inquiry into Schools, Community & Society II	0.75
b. Legal/Ethical Aspects of Teaching	SPC_ED 4020 ED_LPA 4060	Teaching the Exceptional Learner Inquiry into Schools, Community & Society II	0.75 0.75

4. Secondary Literacy (Minimum of six semester hours)			
	Course Number	Course Title	Semester Hours
a. Reading and Writing in the Content Area	LTC 4560	Reading & Writing in the Content Area I	3
b. Instructional Interventions for Students with Reading Deficits	LTC 4565	Reading & Writing in the Content Area II	3
Professional Requirements - Total Semester Hours			34
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)	ESC_PS 2014	Inquiry into Learning I field	1
	LTC 2044	Inquiry into Schools, Community & Society I field	1
2. Mid-Level Field Experiences (Minimum of one semester hour with a minimum of 45 clock hours)	LTC 4634	Teaching Science in Sec School I field	1
	LTC 4644	Teaching Science in Sec School II field	1
3. Culminating Clinical Experiences (Minimum of eight semester hours with a minimum of 12 weeks in one placement)	LTC 4971	Internship & Capstone	12
Field and Clinical Experiences - Total Semester Hours			16
C. Unified Science: Physics Content Knowledge Area (Minimum of 50 semester hours)			
	Course Number	Course Title	Semester Hours
1. History/Philosophy of Science and Technology (three semester hours)	LTC 4631	Teach.Sci.Second.Sch.:Phil.,Hist., Sci.Inq.,Curr., Assm., & Teach I	2
	LTC 4641	Teaching Middle and Secondary Science II	2
2. Biology – six semester hours which must include:			
a. Zoology with lab	BIO_SC 1500	Intro to Biological Systems w/ Lab	5
b. Botany with lab	BIO_SC 1200 or BIO_SC 3210	General Botany w/ Lab Plant Systematics	5 or 4
3. Chemistry with labs (six semester hours)	CHEM 1320 CHEM 1330	College Chemistry I College Chemistry II	4 4
4. Physics with labs (six semester hours)	PHSYCS 2750	University Physics I	3
	PHYSCS 4050 or PHYSCS 4060	Electronic Laboratory Adv. Physics Laboratory I	4 or 3
5. Earth Science – six semester hours which must include:			
a. Geology	GEOL 1200	Environmental Geology w/ Lab	4
b. Meteorology	ATM_SC 1050	Introduction to Meteorology	3
6. Environmental Science (three semester hours)	BIO_SC 1060	Basic Environmental Studies	3
7. Additional Physics coursework – 20 semester hours which must include:			
a. Quantum Physics	PHYSCS 3150	Intro to Modern Physics	1.5
b. Atomic/Nuclear Physics	PHYSCS 3150	Intro to Modern Physics	1.5
c. Heat/Thermodynamics	PHYSCS 2750	University Physics I	3
d. Health Physics	PHYSCS 4420 or PHYSCS 4520	Introduction to Biomedical Imaging Introduction to Biophysics	3 or 3
e. Optics	PHYSCS 2330	Exploring the Principles of Physics	4
	PHYSCS 2760	University Physics II	1
f. Electricity/Magnetism	PHYSCS 2760	University Physics II	4
	PHYSCS 3100	Teaching Physics	3
	PHYSCS 4050 or 4060	Electronics Lab Ad. Physics Lab I	4 3
g. Statistics/Mechanics	PHYSCS 2750	University Physics I	2
Content Knowledge Area - Total Semester Hours			57-66

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