



EARTH SCIENCE, GRADES 9-12

EDUCATOR PREPARATION PROGRAM NAME WASHINGTON UNIVERSITY	EDUCATOR PREPARATION PROGRAM CODE 300342
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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 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	ED 415	Curriculum and Instruction in Science	3 (.3)
b. Instructional Strategies and Techniques in Content Area Specialty	ED 415	Curriculum and Instruction in Science	(.2)
c. Assessment, Student Data, and Data-Based Decision-Making	ED 415 ED 408 ED 4821	Curriculum and Instruction in Science Education & Psych. of Exceptional Children Teaching-Learning Process in Secondary School	(.1) (.1) (.1)
d. Strategies for Content Literacy	ED 415 ED 5681	Curriculum and Instruction in Science Reading in the Content Areas	(.1) (.5)
e. Critical Thinking and Problem Solving	ED 415 ED 4821	Curriculum and Instruction in Science Teaching-Learning Process in Secondary School	(.1) (.2)
f. English Language Learning	ED 5253 ED 415 ED 4821 ED 408 ED 4843	Instructional Interventions in Reading for Adolescents & English Language Learners Curriculum and Instruction in Science Teaching-Learning Process in Secondary School Education & Psych. of Exceptional Children Field Experience Seminar	(.5) (.1) (.1) (.1) (.1)

2. Individual Student Needs

	Course Number	Course Title	Semester Hours
a. Psychological Development of the Child and Adolescent	(These two courses) ED 4052 AND ED 313B OR (These 3 courses) ED 4052 PSYCH 321 PSYCH 325	Educational Psychology: Focus on Teaching and Learning in Schools Education, Childhood, Adolescence and Society (same as above) Developmental Psychology Psychology of Adolescence	(.2) 3 (.8) 3 3
b. Psychology/Education of the Exceptional Child	ED 408	Education & Psychology of Exceptional Children	3 (.5)

c. Differentiated Learning	ED 4052 ED 415 ED 4821 ED 408 ED 4843	Educational Psychology: Focus on Teaching and Learning in Schools Curriculum and Instruction in Science Teaching-Learning Process in Secondary School Education & Psych. of Exceptional Children Field Experience Seminar	(.1) (.1) (.1) (.1) (.2)
d. Classroom Management	ED 4052 ED 408 ED 4821 ED 4843	Educational Psychology: Focus on Teaching and Learning in Schools Education & Psych. of Exceptional Children Teaching-Learning Process in Secondary School Field Experience Seminar	(.1) (.1) (.2) (.2)
e. Cultural Diversity	ED 313B ED 4052 ED 4821 ED 4843 (one course) ED 301C ED 453B ED 459F ED 481	Education, Childhood, Adolescence and Society Educational Psychology: Focus on Teaching and Learning in Schools Teaching-Learning Process in Secondary School Field Experience Seminar (one of the following courses) American School Sociology of Education Philosophies of Education History of Education	(.2) (.1) (.1) (.1) 3
f. Educational Psychology	ED 4052	Educational Psychology: Focus on Teaching and Learning in Schools	3 (.5)
3. Schools and the Teaching Profession			
	Course Number	Course Title	Semester Hours
a. Consultation and Collaboration	ED 4843 ED 4821	Field Experience Seminar Teaching-Learning Process in Secondary School	2 (.2) (.1)
b. Legal/Ethical Aspects of Teaching	ED 4843 ED 4821 ED 408	Field Experience Seminar Teaching-Learning Process in Secondary School Education & Psych. of Exceptional Children	(.2) (.1) (.1)
4. Secondary Literacy (Minimum of six semester hours)			
	Course Number	Course Title	Semester Hours
a. Reading and Writing in the Content Area	ED 5681	Reading in the Content Areas	3 (.5)
b. Instructional Interventions for Students with Reading Deficits	ED 5253	Instructional Interventions in Reading for Adolescents & English Language Learners	3 (.5)
Professional Requirements - Total Semester Hours			26
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)	ED 4052	Educational Psychology: Focus on Teaching and Learning in Schools	1
2. Mid-Level Field Experiences (Minimum of one semester hour with a minimum of 45 clock hours)	ED 4843	Field Experience Seminar	1
3. Culminating Clinical Experiences (Minimum of eight semester hours with a minimum of 12 weeks in one placement)	ED 492	Student Teaching in Secondary School	8
Field and Clinical Experiences - Total Semester Hours			10
C. Earth Science Content Knowledge Area (Minimum of 35 semester hours)			
	Course Number	Course Title	Semester Hours
1. History/Philosophy of Science and Technology (three semester hours)	PHIL 321G	Philosophy of Science	3
2. Earth Science Coursework – Minimum of 20 semester hours which must include:			
a. Astronomy	(One course in block) EPSc 171A PHYSICS 312	(One course in block) The Solar System Introduction to Astrophysics	3 3

<p>b. Meteorology</p>	<p>(One course in block)</p> <p>EPSc 105 EPSc 108A EPSc 111</p> <p>EPSc 112 EPSc 141 EPSc 386 EPSc 408 EPSc 486</p>	<p>(One course in block)</p> <p>First Year Seminar: Habitable Planets Oceans and the Atmosphere Introduction to Global Climate Change in the 21st Century</p> <p>Engineering the Climate The Science of Climate Change Earth's Climate System Earth's Atmosphere and Global Climate Paleoclimatology</p>	<p>3 3 3</p> <p>3 3 3 3 3</p>
<p>c. Geology/Physical Geography</p>	<p>(One course in block)</p> <p>EPSc 385 EPSc 352 EPSc 353 EPSc 361 EPSc 473</p>	<p>(One course in block)</p> <p>Earth History Earth Materials Earth Forces Structural Geology Planetary Geology</p>	<p>3 5 4 3 3</p>
<p>d. Earth Science Electives</p>	<p>Electives (Four courses in this block or any course in 2a, 2b, or 2c not already counted.)</p> <p>EPSc 219 EPSc 221A EPSc 308 EPSc 319 EPSc 323 EPSc 336 EPSc 401 EPSc 404 EPSc 407 EPSc 409 EPSc 410</p> <p>EPSc 413 EPSc 422 EPSc 428 EPSc 429 EPSc 430 EPSc 437 EPSc 441 EPSc 443 EPSc 444 EPSc 445 EPSc 446 EPSc 452 EPSc 453 EPSc 454 EPSc 459 EPSc 474 EPSc 496</p>	<p>(Four courses in this block or any course in 2a, 2b, or 2c not already counted.)</p> <p>Energy and the Environment Human Use of the Earth Topics in Environmental Sustainability Physical Oceanography Biogeochemistry Minerals and Rocks in the Environment Earth Systems Science Ideas and Controversies In the Geosciences Remote Sensing Surfaces Processes Earth Remote Sensing Methods and Instrumentation Introduction to Soil Science Sedimentary Geology Hydrology Environmental Hydrogeology Environmental Mineralogy Introduction to Petrology Introduction to Geochemistry Methods in Biogeochemistry Environmental Geochemistry Organic Geochemistry Stable Isotope Geochemistry Introduction to Seismology Interior of the Earth Exploration and Environmental Geophysics Geodynamics Planetary Geochemistry Undergraduate Field Geology</p>	<p>3 3 3 3 3 3 3 3 3 4 3</p> <p>3 4 3 3 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3</p>
<p>3. Additional Science Coursework – Minimum of 12 semester hours which must include:</p>			
<p>a. Chemistry</p>	<p>(One course and one lab course in block)</p> <p>CHEM 111A CHEM 151</p> <p>OR</p> <p>CHEM 112A CHEM 1152</p>	<p>(One course and one lab course in block)</p> <p>General Chemistry I General Chemistry Lab I</p> <p>General Chemistry II General Chemistry Lab II</p>	<p>3 2</p> <p>3 2</p>
<p>b. Biology</p>	<p>BIOL 2960</p>	<p>Principles of Biology I</p>	<p>4</p>

c. Physics	(One course in block) PHYSICS 191F/191L PHYSICS 191U/191L PHYSICS 197 PHYSICS 117A	(One course in block) Physics I/Lab - First-Year Only Physics I/Lab - Sophomores, Juniors, and Seniors Only Physics I General Physics I	3/1 3/1 4 4
d. Environmental Science	(One course in block) EPSc 201 BIOL 2950 BIOL 381	(One course in block) Earth and Environment Introduction to Environmental Biology Introduction to Ecology	4 3 3
Content Knowledge Area – Total Semester Hours			35

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