



PHYSICS, GRADES 9-12

EDUCATOR PREPARATION PROGRAM NAME
ROCKHURST UNIVERSITY

EDUCATOR PREPARATION PROGRAM CODE
501839

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	ED 4030 ED 4260 ED 4500	Technology in Education Teaching Middle and Secondary School Science Curriculum Methods and Assessment for Secondary School	3
b. Instructional Strategies and Techniques in Content Area Specialty	ED 4030 ED 4260 ED 4500	Technology in Education Teaching Middle and Secondary School Science Curriculum Methods and Assessment for Secondary School	3
c. Assessment, Student Data, and Data-Based Decision-Making	ED 4260 ED 4500	Teaching Middle and Secondary School Science Curriculum, Methods, and Assessment in Secondary Education	3
d. Strategies for Content Literacy	ED 4020	Fundamentals of Literacy Learning	3
e. Critical Thinking and Problem Solving	ED 4020 ED 4030 ED 4260	Fundamentals of Literacy Learning Technology in Education Teaching Middle and Secondary School Science	3
f. English Language Learning	ED 4020 ED 4030 ED 4260 ED 4450	Fundamentals of Literacy Learning Technology in Education Teaching Middle and Secondary School Science Foundations of Special Education	3

2. Individual Student Needs

	Course Number	Course Title	Semester Hours
a. Psychological Development of the Child and Adolescent	ED 4300	Child and Adolescent Development in Education	3
b. Psychology/Education of the Exceptional Child	ED 4450	Foundations of Special Education	3
c. Differentiated Learning	ED 4020 ED 4030 ED 4260 ED 4450 ED 4900	Fundamentals of Literacy Learning Technology in Education Teaching Middle and Secondary School Science Foundations of Special Education Student Teaching Seminar	3
d. Classroom Management	ED 3620 Or ED 4620 Or ED 4260	Foundations of Classroom Management Foundations of Classroom Management Teaching Middle and Secondary Science	2 2 3
e. Cultural Diversity	ED 1320 ED 4010 ED 4260 ED 4450	Multicultural Clinical Experience Foundations of Education Teaching Middle and Secondary School Science Foundations of Special Education	3 2 3 3
f. Educational Psychology	ED 4300	Child and Adolescent Development in Education	3

3. Schools and the Teaching Profession

	Course Number	Course Title	Semester Hours
a. Consultation and Collaboration	ED 4010	Foundations of Education	2
	ED 4450	Foundations of Special Education	3
	ED 4900	Student Teaching Seminar	3
b. Legal/Ethical Aspects of Teaching	ED 4010	Foundations of Education	2
	ED 4450	Foundations of Special Education	3
	ED 4900	Student Teaching Seminar	3

4. Secondary Literacy (Minimum of six semester hours)			
	Course Number	Course Title	Semester Hours
a. Reading and Writing in the Content Area	ED 4020	Fundamentals of Literacy Learning	3
b. Instructional Interventions for Students with Reading Deficits	ED 4700	Methods of Diagnosing and Instruction for Remedial Reading	3
Professional Requirements - Total Semester Hours			31

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 1320	Multicultural Clinical Experiences	1
	ED 4260	Teaching Middle and Secondary Science	30 clock hours
2. Mid-Level Field Experiences (Minimum of one semester hour with a minimum of 45 clock hours)	ED 3620	Foundations of Classroom Management	1
	ED 4030	Technology in Education	50 clock hours
	ED 4450	Foundations of Special Education	
	ED 4500	Curriculum, Methods, Assmnt in Sec Education	
3. Culminating Clinical Experiences (Minimum of eight semester hours with a minimum of 12 weeks in one placement)	ED 4850	Student Teaching in the Secondary School	9
Field and Clinical Experiences - Total Semester Hours			11

C. Physics Content Knowledge Area (Minimum of 35 semester hours)			
	Course Number	Course Title	Semester Hours
1. History/Philosophy of Science and Technology (three semester hours)	PL 3850	Philosophy of Science	3
2. Physics Coursework – Minimum of 20 semester hours which must include:			
a. Mechanics	PH 4111	Classical Mechanics Theory	1
	PH 4550	Quantum Mechanics	3
b. Electricity and Magnetism	PH 1500	Basic Electricity and Electronics	2
	PH 2940	Physics for Scientists and Engineers II	3
	PH 4000	Electric Circuits	3
	PH 4011	Electromagnetic Theory	1
c. Heat, Sound, and Light	PH 2850	Physics for Scientists and Engineers	3
d. Atomic or Modern Physics	PH 4500	Modern Physics	3

e. Physics Electives;	PH 1200 PH 1210 PH 1600 PH 1610 PH 1700 PH 1710 PH 1750 PH 1760 PH 2300 PH 2310 PH 2800 PH 2810 PH 2860 PH 2900 PH 2910 PH 2920 PH 3200 PH 3210 PH 3240 PH 3400 PH 3500 PH 3510 PH 3530 PH 3560 PH 3710 PH 4100 PH 4215 PH 4400 PH 4900 PH 4940	Choose one 3 credit hour course. May not use a course to fulfill more than one requirement. The Art of Physics 3 The Art of Physics Laboratory 1 Introduction to Astronomy 3 Introduction to Astronomy Laboratory 1 Physics Concepts and Connections I 3 Physics Concepts and Connections Laboratory I 1 Physics Concepts and Connections II 3 Physics Concepts and Connections Laboratory II 1 The Phascination of Physics 3 The Phascination of Physics Laboratory 1 General Physics I 3 General Physics Laboratory I 1 Physics for Scientists and Engineers Laboratory I 1 General Physics II 3 General Physics Laboratory II 1 Physics for Scientists Engineers Laboratory II 1 Physics of the Body I 3 Physics of the Body II 3 Physics of Medical Imaging 3 Thermodynamics 3 Statics 3 Physical Chemistry I 3 Physical Chemistry II 3 Physical Chemistry Laboratory 1 Mathematical Methods in Physics 3 Dynamics 3 Advanced Laboratory 1 Optics 3 Statistics for the Health Sciences 3 Research in Physics of Medicine 1	
3. Additional Science Coursework – Minimum of 12 semester hours which must include:		Choose 12 credit hours from chemistry, physics, earth science, and environmental science. May not use a course to fulfill more than one requirement.	
a. Chemistry;	CH 1050 CH 1060 CH 2610 CH 2630 CH 2650 CH 3450 CH 3650 CH 3990 CH 4430 CH 4450 CH 4810 CH 4820 CH 4840 CH 4960 CH 4990	Choose one 3 credit hour course: Principles of General Chemistry 3 Principles of General Chemistry Laboratory 1 General Chemistry I 4 General Chemistry II 4 Honors General Chemistry and Laboratory 5 Analytical Chemistry 4 Nuclear Chemistry 2-3 Research Projects, Introductory 1-3 Instrumental Analysis I 3 Instrumental Analysis II 3 Advanced Organic Chemistry 1-3 Advanced Physical Chemistry 1-3 Advanced Biochemistry 1-3 Chemical Literature and Seminar 1 Research Projects, Advanced 1-3	

b. Biology;	BL 1150	Choose one 3 credit hour course: Contemporary Biology for Non-Majors	3
	BL 1151	Contemporary Biology for Non-Majors Lab	1
	BL 1250	General Biology I	3
	BL 1251	General Biology I Laboratory	1
	BL 1260	General Biology I, Honors	3
	BL 1261	General Biology I Lab, Honors	1
	BL 1300	General Biology II	3
	BL 1301	General Biology II Laboratory	1
	BL 2929	Cellular Basis for Human Anat Physiology	3
	BL 2930	Human Anatomy and Physiology I	3
	BL 2931	Human Anatomy and Physiology I Lab	1
	BL 2940	Human Anatomy and Physiology II	3
	BL 2941	Human Anatomy and Physiology II Lab	1
	BL 2965	Accelerated Human Anatomy Physiology	3
	BL 3100	Microbiology	3
	BL 3101	Microbiology Laboratory	1
	BL 3200	Invertebrate Zoology	3
	BL 3201	Invertebrate Zoology Laboratory	1
	BL 3230	Animal Behavior	3
	BL 3350	Plant Biology	3
	BL 3351	Plant Biology Laboratory	1
	BL 3400	Comparative Vertebrate Anatomy	3
	BL 3401	Comparative Vertebrate Anatomy Laboratory	1
	BL 3430	Seminar in Genetics	3
	BL 3440	Advanced Human Anatomy	3
	BL 3441	Advanced Human Anatomy Laboratory	1
	BL 3450	Embryology and Developmental Biology	3
	BL 3451	Embryology and Developmental Biology Lab	1
	BL 3610	Genetics	3
	BL 3611	Genetics Laboratory	1
BL 3620	Cell Biology	3	
BL 3621	Cell Biology Laboratory	1	
BL 3640	Bioinformatics	3	
BL 3650	Molecular Biology	2	
BL 3700	General Physiology	3	
BL 3701	General Physiology Laboratory	1	
BL 3900	Biology Field Trip	2	
BL 3990	Research Projects, Introductory	1-3	
BL 4200	Parasitology: Global Issues and Perspect	3	
BL 4600	Biotechnology	2	
BL 4700	Principles of Immunology	2	
BL 4800	Evolution	3	
BL 4810	Ecology	3	
BL 4811	Ecology Laboratory	1	
BL 4940	Advanced Principles of Biology	1	
BL 4990	Research Projects, Advanced	1-3	
c. Earth Science;	NS 1500	Choose one 3 credit hour course: Geological Sciences	3
	NS 1501	Geological Sciences Laboratory	1
d. Environmental Science;	NS 1210	Choose one 3 credit hour course: Environmental Science	3
	NS 1220	Environmental Science Laboratory	1
Content Knowledge Area - Total Semester Hours			35

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