BACHELOR OF SCIENCE IN EDUCATION, Science and Mathematics Education
Physics Education
Program Sheet

Effective for students admitted to the College of Education and Human Ecology beginning Summer 2018

COURSE & NUMBER	HRS	COURSE & NUMBER	HRS
General Education (28-34 hours)		**Pre-Major Requirements (67-68 hours)**	
Writing (6)		**Professional Pre-Major (9 hours)**	
ENGLISH 1110.01 or 1110.02 or [1]1110.03	3	ESCE 2189S – First Education Experience Program (also fulfills Open Option GE)	3
[3] 2nd Level Writing Course (2367)	3	ESPHE 3410- Philosophy of Education (also fulfills Culture & Ideas GE)	3
		ESEPSY 5401 – Adolescent Lrnng & Dev in School Context or HDFS 2420 - Adolescence and Emerging Adult Development	3
[2] Literature (3)	3	**Content (58-59)**	
		CHEM 1210 (also fulfills Science GE)- Chemistry I [L]	5
[2] Arts (3)	3	CHEM 1220(also fulfills Science GE) - Chemistry II [L]	5
		BIOL 1101, 1113, or 1114(also fulfills Science GE) –Biology [L]	4
Math (6-12)		EARTHSCI 1100, 1110 , 1121, or 1122 (also fulfills Open Option GE) [L]- Earth Science [L]	3-4
Math Placement M or higher, MATH 1148 or Equiv	0-4	PHYSICS 1250 - Mechanics, Thermal Physics, Waves [L]	5
MATH 1149 or 1150	3-5	PHYSICS 1251 - E&M, Optics, Modern Physics [L]	5
		MATH 1151 – Calculus I [L]	5
[2, 3] Historical Study (3)	3	MATH 1152– Calculus II [L]	5
		MATH 2153– Calculus III [L]	4
[3] Social Sciences (6)	6	PHYSICS 2300 – Intermediate Mechanics I [L]	4
Take two social science courses from the University approved GE list. Choose from 2 different subcategories.		PHYSICS 2301 - Intermediate Mechanics II [L]	4
		PHYSICS 3700 (also counts as Data Analytics GE) - Experimental Physics Instrumentation Lab [L]	3
Supporting Courses (3)		PHYSICS 4700 – Intro Electronics [L]	3
CSE 1222	3	ASTRON 2291 - Basic Astrophysics & Planetary Astronomy [L]	3
University Requirement (1)		**Major Requirements (43 hours)**	
EHE 1100	1	EDUTL 5501 - Inclusion: Philos, Social, and Practice Issues	3
		EDUTL 5005- Equity and Diversity	3
		EDUTL 5442 – Teaching Reading Across the Curriculum	3
		EDUTL 5721 – Methods in Teaching STEM I	3
		EDUTL 5722 – Methods in Teaching STEM II	5
		EDUTL 5741 – Learning, Cognition, & Teaching in STEM	3
		EDUTL 5744 – Technologies Used in STEM	3
		EDUTL 5745 –Assessment in STEM I: Introduction	3
		EDUTL 5195 – Reflective Seminar	2
Major Admission Requirements: Competitive application process requiring completion of application. Students should consult their academic advisor to discuss eligibility and the application process. While a 2.75 CGPA Is required for admission, meeting the minimum requirements does not guarantee admission.		EDUTL 4189 – Advanced Field Experience	3
		[5]EDUTL 5191 – Supervised Student Teaching Internship	10
		EDUTL 5195 – Reflective Seminar	2
FREE ELECTIVES (0)		**TOTAL HOURS REQUIRED**	140

Successful completion of the Ohio Assessment for Educators examinations are required prior to student teaching. Cumulative grade point average of 2.75 required at time of graduation in order to be recommended for state of Ohio teacher licensure.

[1] English 1110.03 must be taken concurrently with English 1193.03
[2]Students must complete two Global Issues courses, which are typically met by selecting Literature, Art, Cultures & Ideas, or Historical Study courses that meet this requirement.
[3]Students must complete one Social Diversity in the US course, which is typically met by selecting a 2nd Writing, Historical Study, or Social Science course that meets this requirement.
[4] Hours are counted in pre-major if ESEPHL 3410 is taken for the Cultures & Ideas requirement
[5] A grade of B- or better is required.
[L] Content required for state license. Cumulative grade point average of 2.75 required at time of graduation in these courses (and overall) in order to be recommended for state of Ohio teacher licensure. Course grades transferred from other institutions will also be included in these GPA calculations.

Dual License Requirements: Students wishing to pursue a dual license will need to take and achieve a 2.75 CGPA in the following courses in addition to the major above.

Physics and Earth Science			
COURSE & NUMBER	**HRS**	**COURSE & NUMBER**	**HRS**
GEOG 5900 Weather, Climate, and Global Warming	3	EARTHSCI 5189.06 or 5580 – Field Geology	3
EARTHSCI 1122- Earth Through Time	4	EARTHSCI 2206, 5206 or 5584 Oceanography	2-3
EARTHSCI 2300 or ENV 2100 – Intro to Environmental Sci	3	EEOB 3310 – Evolution	4
EARTHSCI 2204- Exploring Water Issues	3	ASTON 1101, 1140, 1142, or 1143 - Astronomy	3-4
*Note: Take EARTHSCI 1121 above for this dual license option		**Additional Hours**	25

Physics and Chemistry			
COURSE & NUMBER	**HRS**	**COURSE & NUMBER**	**HRS**
CHEM 2210 - Analytical Chemistry I: Quantitative Analysis	5	CHEM 2540 or BIOCHEM 5621 – Organic Chemistry Lab	2-4
CHEM 2510 – Organic Chemistry I	4	BIOCHEM 4511 – Biological Chemistry	4
CHEM 2520 – Organic Chemistry II	4	**Additional Hours**	19-21

Physics and Life Science			
COURSE & NUMBER	**HRS**	**COURSE & NUMBER**	**HRS**
CHEM 2310 – Introductory Organic Chemistry	4	MOLGEN 4500 – General Genetics	3
BIOL 1113 or 1114 (depending on which was taken above)	4	EEOB 3310– Evolution	4
BIOCHEM 4511- Biological Chemistry	4	MICROBIOL 4000 – Microbiology	4
MOLGEN 3300 - General Plant Biology	3		
*Note: Take BIO 1113 and 1114 above for this dual license option		**Additional Hours**	26

Integrated Science			
COURSE & NUMBER	**HRS**	**COURSE & NUMBER**	**HRS**
ASTRON 1140 - Planets and The Solar System	3	BIOCHEM 4511 – Biological Chemistry	4
BIOL 1113 or 1114 (depending on which was taken above)	4	MOLGEN 4500 – General Genetics	3
EEOB 3310 - Evolution	4	EARTHSCI 1121 or 1122 (depending on which was taken above)	4
MICROBIOL 4000 – Microbiology	4	EARTHSCI 2206, 5206 or 5584 Oceanography	2-3
CHEM 2510 – Organic Chemistry I	4	EARTHSCI 2300 or ENV 2100- Intro to Environmental Sci	5
*Note: Take EARTHSCI 1121 or 1122 above for the Integrated Science option		**Additional Hours**	40-41
GEOG 5900	3		