Department of Education

Revised 3/22/21

Adolescent Young Adult (7-12): Physical Sciences-Physics

Program requirements:	
General Education:	Satisfactory completion of all general education requirements.
Major:	Satisfactory completion of a major in Physics (plus the addition of PHYS-107) for a total of approximately 41 credits, with the addition of 22 credits of course work in related fields as described below.
Education:	Satisfactory completion of a minor in education (36 credits) as described below. Prior to being admitted to the Teacher Education Program, the student must meet all of the admission requirements outlined in the Undergraduate Teacher Education Handbook for Licensure, including demonstration of mathematical competency by earning a grade of C- or higher in a 4-credit course that fulfills the LO #4 Connections Curriculum requirement.

Requirements for Adolescent Young Adult Licensure:

- All courses must be passed with a grade of C- or above. See the Academic Catalog for additional requirements for admission and continuation in the program. Courses may not be offered every year. Check the department schedules for course offerings.
- Students are required to complete a capstone assessment, the edTPA, during their Student Teaching Seminar (EDUC-496) and earn a C- or higher in the course.

Required in Education (36 credits)

Entry-Level Courses (Taken prior to application to the Teacher Education Program)

Grade Earned	Course #	Course Name & Credits	
_____	EDUC-103	Sociological Perspectives in Education (4)—LO#2 and LO#6	
or	EDUC-104	Philosophical Perspectives in Education (4)—LO#2 and LO#10	
_____	EDUC-105	Educational Psychology (2)	
_____	EDUC-120	Introduction to Students with Special Needs (2)	*(Concurrently with EDUC 105)*
_____	EDUC-213	Adolescent Development and Education (4)	

Advanced Courses (Taken following admission to the Teacher Education Program)

_____	EDUC-312	Reading & Writing in the Content Areas (3)	*(Spring Only)*
_____	EDUC-313	Practicum: Literacy (1)	
_____	EDUC-332	Assessment and Inclusion (4)	
_____	EDUC-348	Teaching Science in Secondary Schools (3)	*(See Advisor for Scheduling)*
_____	EDUC-388	Science Practicum (1)	*(See Advisor for Scheduling)*

Student Teaching Term

Application for permission to student teach must be submitted early spring term of junior year.
Other coursework, if taken, must be scheduled for late afternoon or evenings during the term and is subject to the approval of the Director of Field Placements and Outreach.

_____	EDUC-495	Student Teaching (10)—LO#1
_____	EDUC-496	Student Teaching Seminar (2)

Additional Requirement for Adolescent Young Adult Licensure

_____ Successful completion of the state-required licensure examinations.

Required in Physics (37 Credits)

Grade Earned	Course #	Course Name & Credits
_____	PHYS-107	Astronomy (4)
_____	PHYS-201	Physics I (5)
_____	PHYS-203	Calculus-Based Physics II (5)
_____	PHYS-204	Modern Physics (5)
_____	PHYS-207	Introduction to Electronics (2)
_____	PHYS-311	Classical Mechanics (4)
_____	PHYS-350	Advanced Physics Lab (2)
_____	PHYS-360	Junior Seminar (1) [full-year course, meets once a week]
_____	PHYS-460	Senior Seminar (1) [full-year course, meets once a week]

4 Additional Credits from the Following Courses:

_____	PHYS-330	Statistical & Thermal Physics (4)
_____	PHYS-332	Electromagnetism (4)
_____	PHYS-411	Quantum Mechanics (4)

4 Additional Credits at the 300-Level or Above:

_____		
_____	PHYS-313	Electronics (2)
_____	PHYS-314	Digital electronics (2)
_____	PHYS-320	Computational Physics (2)
_____	PHYS-321	Signal Processing (2)
_____	PHYS-325	Topics in Contemporary Physics (2)
_____	PHYS-330	Statistical & Thermal Physics (4)
_____	PHYS-332	Electromagnetism (4)
_____	PHYS-380	Topics (1-4)
_____	PHYS-411	Quantum Mechanics (4)
_____	PHYS-490	Independent Study (1 - 4)
_____	PHYS-491	Internship (1 - 4)
_____	PHYS-498	Senior Thesis (1 - 4)
_____	PHYS-499	Senior Honors Thesis (0 - 4)

Required in Related Departments (17 Credits)

Mathematics (12 Credits)

_____	MATH-201	Calculus I (4)
_____	MATH-202	Calculus II (4)

Plus <u>one</u> of the following courses:

_____	MATH-212	Multivariable Calculus (4)
_____	MATH-215	Differential Equations (4)

Chemistry (5)

_____	CHEM-121	Models of Chemical Systems (5)

One of the following courses in Biology (5)

_____	BIOL-170	Concepts of Biology: Biological Information, Reproductions and Evolution (5)
_____	BIOL-180	Concepts of Biology: Energy and Resources in Biology (5)

Any change(s) in this program of study must be approved by the Chairperson of the major department and the Director of Assessment & Licensure, Wittenberg University.