PHYSICS (BA) AND SECONDARY EDUCATION

Program Mission

The mission of the Physics Program is to foster curiosity about the laws governing the physical world, enlighten students in critical thinking, and instruct them on applying the scientific method. Graduates of the program are prepared for careers in physics and physics-related fields, or the pursuit of advanced degrees. Graduates can pursue advanced degrees in diverse fields, including physics, medicine, teaching, engineering, or law.

Program Outcomes

1. Graduates will have conceptual knowledge of physics within the framework of a liberal arts education.
2. Graduates will be proficient in fundamental laboratory skills, including data analysis, and the use of instrumentation.
3. Graduates will be able to access, interpret, and utilize scientific materials as well as clearly and concisely communicate scientific results via oral and written reports.
4. Graduates will have the tools to succeed in a career in a physics-related field, graduate studies in physics, teaching, or the pursuit of advanced degrees in medicine, teaching, or the law.
5. Graduates will have the interpersonal and professional skills to effectively work within teams and be project leader of teams of varied cultural and experiential backgrounds regardless of cultural differences.

Guidelines for Acceptance to a Physics & Astronomy Department Major

In order to ensure that students are on a successful academic trajectory, it is recommended that students who have not earned at least a C average in both PHYS-2100, Classical Physics I, and PHYS-2110, Classical Physics II, should not declare a major in the Physics & Astronomy Department. Students who have not achieved this minimum grade guideline but who still seek acceptance to a major in the Physics & Astronomy Department must meet with and receive approval from the Department Chair.

Program Requirements for Physics & Secondary Education double major

Code	Title	Hours
Required Courses		
ASTR-1300	Sun & Solar System	4
PHYS-4457	Methods of Teaching Secondary Physics	2
CHEM-1200	General Chemistry I Lecture	3
CHEM-1210	General Chemistry II Lecture	3
CHEM-1201	General Chemistry I Lab	1
CHEM-1211	General Chemistry II Lab	1
NASC-1400	Earth Science	3
PHYS-2100 & PHYS-2101	Classical Physics I and Introductory Physics Laborartory I	4
PHYS-2110 & PHYS-2111	Classical Physics II and Introductory Physics Lab II	4
PHYS-3200	Relativity & Atomic Physics	3
PHYS-3201	Modern Physics Lab	1
PHYS-3210	Nuclear & Elementary Particle Physics	2
PHYS-3211	Modern Physics Lab II	1
PHYS-3500	Electronics	4
PHYS-COMP	Senior Comprehensive Exam	0
PHYS-4900	Physics Colloquium	0
Secondary Education Requirements		
Complete the requirements for a B.A. in Secondary Education		
Total Hours		**36**

Suggested Sequence of Courses for a Bachelor of Arts Degree in Physics and Secondary Education

Course	Title	Hours
Freshman Year		
First Semester		
ENGL-1010	English Composition	3
THEO-1100	Introduction to Theology	3
EXSC-1115	Wellness for Life	1
EDUC-2200	Introduction to Education	2
EDUC-2201	Intro Educational Research & Field Exper	1
Foreign Language		4
PHYS-2100	Classical Physics I	3
PHYS-2101	Introductory Physics Laborartory I	1
	Hours	**18**
Second Semester		
EDUC-2222	Intro to K-12 Special Education	3
PHYS-2110	Classical Physics II	3
PHYS-2111	Introductory Physics Lab II	1
Foreign Language		4
EXSC Fitness Course (Health)		1
PSYC-1000	General Psychology	3
Aesthetic Foundation		
	Hours	**15**
Sophomore Year		
First Semester		
EDUC-2220	Science of Learning & Teaching	3
CHEM-1200	General Chemistry I Lecture	3
CHEM-1201	General Chemistry I Lab	1
PHIL-2100	Principles of Nature	3
Natural World Foundation		3-4
Select one of the following:		3
HIST-1100	World Civilization to 1500	
HIST-1101	World Civilization Since 1500	
	Hours	**16-17**
Second Semester		
EDUC-3332	Literacy in the Secondary Classroom	2
EDUC-3333	Literacy in Secondary Classroom Fid Exp	1
CHEM-1210	General Chemistry II Lecture	3
CHEM-1211	General Chemistry II Lab	1

Philosophical Inquiry Foundation		3
Historical Inquiry Foundation		3
Aesthetic Foundation		3
	Hours	**16**
Junior Year		
First Semester		
PHYS-3200	Relativity & Atomic Physics	3
PHYS-3201	Modern Physics Lab	1
NASC-1400	Earth Science	3
Natural World Foundation		4
Mathematical Reasoning Foundation		3-4
EDUC-3312	School As Community	3
EDUC-3313	School As Community Rsch & Field Exper	1
	Hours	**18-19**
Second Semester		
PHYS-3210	Nuclear & Elementary Particle Physics	2
PHYS-3211	Modern Physics Lab II	1
PHYS-3500	Electronics	4
Faith Foundation		3
EDUC-4451	Philosophy of Education	3
PHYS-4457	Methods of Teaching Secondary Physics	2
NASC-1000	Environmental Science	3
	Hours	**18**
Senior Year		
First Semester		
ASTR-1300	Sun & Solar System	4
EDUC-4455	Meeting the Needs of All Learners	2
EDUC-4462	Classroom Management	2
EDUC-3357	General Secondary Methods & Media	3
EDUC-3358	General Secondary Method & PracticumýGeneral Secondary Meth & Media Practicum	1
PHYS-4200	Mathematical Methods for Physics	3
	Hours	**15**
Second Semester		
EDUC-4470	Student Teaching Seminar	2
EDUC-4496	Supervised Student Teach Secondar School	10
EDUC-COMP	Senior Comprehensive Exam	0
PHYS-COMP	Senior Comprehensive Exam	0
EDUC-DPROF	Diversity Proficiency	NULL
	Hours	**12**
	Total Hours	**128-130**