

<div>PROGRAM CODE</div> <div>ULASPHYAS</div>	<div>COLLEGE OF LIBERAL ARTS AND SCIENCES</div>		
<div>EFFECTIVE DATE</div> <div>FALL 2020</div>	<div>PHYSICS</div> <div>BACHELOR OF SCIENCE</div>		
<div>VERSION NUMBER</div> <div>2208</div>			
<div>ASTRONOMY TRACK</div>			
<div>STUDENT:</div>		<div>STUDENT ID NUMBER:</div>	

MAJOR PROGRAM

Common Core		
COURSE	CR	GRADE
PHY 100: PHYSICS I	4	
PHY 102: PHYSICS II	4	
PHY 212: MODERN PHYSICS	3	
PHY 220: ELECTRONICS	3	
PHY 230: OPTICS	3	
PHY 315: ADVANCED LAB	2	
PHY 380: SENIOR SEMINAR	2	
TOTAL CREDITS	21	

Astronomy Track (Required)		
COURSE	CR	GRADE
AST 140: PLANETARY SCIENCE	3	
AST 142: STELLAR & GALACTIC ASTRONOMY	3	
AST 242: EXOPLANETS	3	
AST 342 / PHY 342: ASTROPHYSICS	3	
PHY 245: MATHEMATICAL PHYSICS I	3	
PHY 312: CLASSICAL MECHANICS I	3	
PHY 316: ELECTROMAGNETISM I	3	
PHY 327: THERMO. AND STAT. MECH.	3	
TOTAL CREDITS	24	

Astronomy Track (Electives)		
STUDENTS MUST DISCUSS WITH THEIR ADVISORS WHICH ELECTIVES WOULD BEST SERVE THEIR FUTURE CAREER GOALS BEFORE CHOOSING THEM.		
CHOOSE AT LEAST ONE (3 CREDITS)	CR	GRADE
AST 205 / GEL 205: PLANETARY SURFACE PROCESSES	3	
AST 240: THE PLANETARIUM	3	
AST 350: PRACTICAL ASTRONOMY	3	
AST 370: RESEARCH IN ASTRONOMY	3	
PHY 214: INTRO. TO SUBATOMIC PHYSICS	3	
PHY 340: COMPUTATIONAL PHYSICS	3	
PHY 360: QUANTUM MECHANICS I	3	
TOTAL CREDITS	3	


CONCOMITANT COURSES

Chemistry		
COURSE	CR	GRADE
CHM 100: GENERAL CHEMISTRY I	*	
CHM 102: GENERAL CHEMISTRY II	4	
Mathematics		
MAT 181: CALCULUS I	*	
MAT 182: CALCULUS II	4	
MAT 283: CALCULUS III	4	
Biology		
BIO 104: PRINCIPLES OF BIOLOGY	*	
TOTAL CREDITS	12	

Free Electives <small>CHOOSE ANY COURSES THAT COUNT TOWARD GRADUATION</small>		
COURSE	CR	GRADE
	3	
	3	
	3	
	3	
	3	
TOTAL CREDITS	15	

NOTE:

* REQUIRED FOR THE MAJOR. SATISFIES GENERAL EDUCATION REQUIREMENT OF UNDERSTANDING SCIENCE AND TECHNOLOGY

GRADUATION REQUIREMENTS						
		REQUIRED	✓		REQUIRED	✓
	GENERAL EDUCATION CREDITS	42-45		COMPREHENSIVE EXAM	PASS	
	PROGRAM CREDITS (MINIMUM)	60		MINIMUM QPA OVERALL	2.0	
	FREE ELECTIVE CREDITS	15		MINIMUM QPA IN MAJOR	2.0	
	TOTAL CREDITS	120				

NAME		EFFECTIVE DATE AUGUST 27, 2018		<div>KUTZTOWN</div> <div>UNIVERSITY</div>			
ID NUMBER		VERSION 2188					
DEGREE REQUIREMENTS							
GENERAL EDUCATION							
<div>Student Learning Outcomes (SLO)</div> <p>Upon completion of the requirements for the General Education Program, students will be able to:</p> <div><div>1</div>communicate clearly and effectively orally and in writing.</div> <div><div>2</div>apply scientific and quantitative reasoning to solve problems and increase knowledge.</div> <div><div>3</div>apply skills in critical analysis and reasoning for the interpretation of data.</div> <div><div>4</div>engage critically with creative or artistic works.</div> <div><div>5</div>demonstrate the ability to retrieve, interpret, evaluate, and use information.</div> <div><div>6</div>analyze the role of values, ethics, diversity, and multiple perspectives in local and global society.</div> <div><div>7</div>demonstrate an understanding of various models for the development of the whole person.</div> <p>Completion of the KU General Education program will give students opportunities to:</p> <div><div>8</div>explore concepts, ideas, and methods from a variety of disciplines.</div>							

B.S. in Physics – Four-Year Plan¹

(This document should not be considered as a substitute for the official program check sheet or a comprehensive discussion with your advisor. Also please refer to the program check sheet for all the footnotes, other guidelines, and requirements.)

First Year

Fall			Spring		
Number	Title	Credits	Number	Title	Credits
PHY 100	Physics I	4	PHY 102	Physics II	4
MAT 181	Calculus I	4	MAT 182	Calculus II	4
CHM 100	General Chemistry I	4	CHM 102	General Chemistry II	4
FYS 100	First Year Seminar	3		Gen. Ed. or Elective	3
		15			15

Second Year

Fall			Spring		
Number	Title	Credits	Number	Title	Credits
PHY 212	Modern Physics	3	PHY 214	Intro. To Subatomic Physics	3
PHY 220	Electronics	3	PHY 230	Optics	3
PHY 245	Mathematical Physics I	3	PHY 312	Classical Mechanics I	3
MAT 283	Calculus III	4		Gen. Ed. or Elective	3
	Gen. Ed. or Elective	3		Gen. Ed. or Elective	3
		16			15

Third Year

Fall			Spring		
Number	Title	Credits	Number	Title	Credits
PHY 316	Electromagnetism I	3	PHY 327	Thermo. & Stat. Mech.	3
PHY 340	Computational Physics	3	PHY 360	Quantum Mechanics I	3
PHY 345	Mathematical Physics II	3		Gen. Ed. or Elective	3
	Gen. Ed. or Elective	3		Gen. Ed. or Elective	3
	Gen. Ed. or Elective	3		Gen. Ed. or Elective	3
		15			15

Fourth Year

Fall			Spring		
Number	Title	Credits	Number	Title	Credits
PHY 380	Senior Seminar	2	PHY 315	Advanced Lab	2
BIO 104	Principles of Biology	4		Gen. Ed. or Elective	3
	Gen. Ed. or Elective	3		Gen. Ed. or Elective	3
	Gen. Ed. or Elective	3		Gen. Ed. or Elective	3
	Gen. Ed. or Elective	3		Gen. Ed. or Elective	3
		15			14

Gen. Ed. and Electives

A.1	
A.2	
A.3	
A.4	
B.1	
B.2	
B.3	
D.1	
D.2	
D.3	
Free Elective	
Free Elective	
Free Elective	
Free Elective	
Free Elective	
Physics Track Elective	

¹Courses in the Physics major are front-loaded in this plan. It is designed with two groups of students in mind:

- Those who wish to go to graduate school in physics and want to complete most of the physics curriculum before taking the GRE-Physics Test in the Fall semester of their senior year
- Those who switch to Physics and wish to complete the major's courses in less than four years (assuming they have many gen. ed. and concomitant courses at the time of switch)

Others who wish to complete the required courses at a more even pace are urged to discuss a suitable course plan with their advisor.

B.S. in Physics – Four-Year Plan²

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First Year

Fall			Spring		
Number	Title	Credits	Number	Title	Credits
PHY 100	Physics I	4	PHY 102	Physics II	4
MAT 181	Calculus I	4	MAT 182	Calculus II	4
CHM 100	General Chemistry I	4	CHM 102	General Chemistry II	4
FYS 100	First Year Seminar	3		Gen. Ed. or Elective	3
		15			15

Second Year

Fall			Spring		
Number	Title	Credits	Number	Title	Credits
PHY 212	Modern Physics	3	PHY 214	Intro. To Subatomic Physics	3
PHY 245	Mathematical Physics I	3	PHY 230	Optics	3
MAT 283	Calculus III	4	PHY 312	Classical Mechanics I	3
	Gen. Ed. or Elective	3		Gen. Ed. or Elective	3
	Gen. Ed. or Elective	3		Gen. Ed. or Elective	3
		16			15

Third Year

Fall			Spring		
Number	Title	Credits	Number	Title	Credits
PHY 220	Electronics	3	PHY 315	Advanced Lab	2
PHY 316	Electromagnetism I	3	PHY 360	Quantum Mechanics I	3
PHY 340	Computational Physics	3		Gen. Ed. or Elective	3
	Gen. Ed. or Elective	3		Gen. Ed. or Elective	3
	Gen. Ed. or Elective	3		Gen. Ed. or Elective	3
		15			14

Fourth Year

Fall			Spring		
Number	Title	Credits	Number	Title	Credits
PHY 345	Mathematical Physics II	3	PHY 327	Thermo. & Stat. Mech.	3
PHY 380	Senior Seminar	2	BIO 104	Principles of Biology	4
	Gen. Ed. or Elective	3		Gen. Ed. or Elective	3
	Gen. Ed. or Elective	3		Gen. Ed. or Elective	3
	Gen. Ed. or Elective	3		Gen. Ed. or Elective	3
		14			16

Gen. Ed. and Electives

A.1	
A.2	
A.3	
A.4	
B.1	
B.2	
B.3	
D.1	
D.2	
D.3	
Free Elective	
Free Elective	
Free Elective	
Free Elective	
Free Elective	
Physics Track Elective	

²Courses in the Physics major are distributed more uniformly over the four years in this plan. However, those who wish to take the GRE-Physics test in the Fall semester of their fourth year are encouraged to follow the expedited plan.