

This roadmap is a recommended semester-by-semester plan of study for this major. However, courses and milestones designed as critical (!) must be completed in the semester listed to ensure a timely graduation.

Critical	Course Subject and Title	Credit Hours	Min. Grade	Major GPA	Attribute	Notes
<b>Semester One [17 Credits]</b>						
!	CHEM 10060 General Chemistry I	4		■	KBS	
!	CHEM 10062 General Chemistry I Laboratory	1		■	KBS	
!	MATH 12002 Analytic Geometry and Calculus I	5		■	KMC	
!	PHY 12000 Introductory Physics Seminar	1		■	ELR	
!	PHY 23101 General University Physics I <sup>1</sup>	5		■	KBS	
	UC 10097 Destination Kent State: First Year Experience <sup>2</sup>	1				
<b>Semester Two [15 Credits]</b>						
!	CHEM 10061 General Chemistry II	4		■	KBS	
!	CHEM 10063 General Chemistry II Laboratory	1		■	KBS	
!	MATH 12003 Analytic Geometry and Calculus II	5		■		
!	PHY 23102 General University Physics II <sup>1</sup>	5		■	KBS	
<b>Semester Three [15 Credits]</b>						
!	BSCI 10120 Biological Foundations	4		■	KBS	
!	CHEM 30475 Organic Chemistry Laboratory I	1		■	ELR	
!	CHEM 30481 Organic Chemistry I	3		■		
!	MATH 32051 Mathematical Methods in the Physical Sciences I	4		■		
	PSYC 11762 General Psychology	3		■	DD/KSS	
<b>Semester Four [15 Credits]</b>						
!	BSCI 30140 Cell Biology	4		■		
!	CHEM 30476 Organic Chemistry Laboratory II	1		■		
!	CHEM 30482 Organic Chemistry II	3		■		
!	MATH 32052 Mathematical Methods in the Physical Sciences II	4		■		
!	PHY 36001 Introductory Modern Physics	3		■		
<b>Semester Five [16 Credits]</b>						
!	BSCI 30130 Human Physiology or BSCI 40430 Animal Physiology	3		■		
!	BSCI 30156 Elements of Genetics	3		■		
!	PHY 35101 Classical Mechanics	4		■		
	SOC 12050 Introduction to Sociology	3		■	DD/KSS	
	Concentration elective <sup>3</sup> or Kent Core Requirement	3		■		
<b>Semester Six [16 Credits]</b>						
!	BSCI 30171 General Microbiology	4		■		
!	CHEM 30284 Introductory Biological Chemistry or CHEM 40245 Biochemical Foundations of Medicine	4		■		
!	PHY 30020 Intermediate Physics Laboratory	2	C <sup>4</sup>	■	WIC	
	Concentration elective <sup>3</sup> or Kent Core Requirement	3		■		
	Kent Core Requirement	3				
<b>Semester Seven [13 Credits]</b>						
!	PHY 40092 Internship in Physics <sup>5</sup>	2		■	ELR	
!	PHY 45201 Electromagnetic Theory	4		■		
	Foreign Language <sup>6</sup>	4 - 5				
	Kent Core Requirement	3				
<b>Semester Eight [13 Credits]</b>						
!	PHY 40020 Advanced Physics Laboratory	2	C <sup>4</sup>	■	WIC	
	Foreign Language <sup>6</sup>	4 - 5				
	Kent Core Requirement	3				
	Kent Core Requirement	3				
	General Electives <sup>7</sup>	1				

### Graduation Requirements Summary

Minimum Total Hours	Minimum Upper-Division Hours 30000 – 40000 level course	Minimum Kent Core Hours	Minimum	
			Major GPA	Overall GPA
120	42	36	2.000	2.000

1. Credit is not granted for both the PHY 13001/PHY 13002 and the PHY 23101/PHY 23102 series, nor for the PHY 13011/PHY 13012 series.
2. UC 10097 is not required of transfer students with 25 credits (excluding College Credit Plus) or students age 21+ at time of admission.
3. Concentration electives (3-4 credits)

**Choose from the following concentration elective:**

BSCI 30518 Vertebrate Anatomy (4)	PHY 41010 Biophotonics (3)
BSCI 40174 Immunology (3)	PHY 44600 Introduction to Biological Physics (3)
BSCI 40517 Medical Histology (3)	

4. A minimum C (2.000) grade must be earned in PHY 30020 or PHY 40020 to fulfill the writing-intensive requirement.
5. With advisor's permission. PHY 40092 may be replaced with PHY 40096 Individual Investigation or PHY 40099 Senior Honors Thesis. If PHY 40096 is taken, a suitable research project should be selected.
6. Fulfills College General Requirement.
7. Number of general elective credit hours required depends on meeting minimum 120 credit hours and minimum 42 upper-division hours.

**Notes:**

The following courses may not count towards the major:

- PHY 11030 Seven Ideas that Shook the Universe (3)
- PHY 21040 Physics in The Entertainment and the Arts (3)
- PHY 21041 Physics in The Entertainment and the Arts Laboratory (1)
- PHY 21430 Frontiers in Astronomy (3)
- PHY 21431 Frontiers in Astronomy Laboratory (1)

PHIL 21001, Introduction to Ethics (3), is highly recommended to fulfill the Kent Core Humanities category. This course also fulfills the global diversity requirement.

**University Requirements:** Bachelor's degree-seeking students must meet Kent Core (general education requirements), diversity, writing-intensive and experiential learning requirements. For more information about these requirements, please read the following sections in the University Catalog: Kent Core – [www.kent.edu/catalog/kent-core](http://www.kent.edu/catalog/kent-core); Diversity Course Requirement – [www.kent.edu/catalog/diversity](http://www.kent.edu/catalog/diversity); Writing-Intensive Course Requirement – [www.kent.edu/catalog/wic](http://www.kent.edu/catalog/wic); Experiential Learning Requirement – [www.kent.edu/catalog/elr](http://www.kent.edu/catalog/elr).

**Attribute Legend:** **DD** Diversity–Domestic; **DG** Diversity–Global; **ELR** Experiential Learning; **KAD** Kent Core Additional; **KBS** Kent Core Basic Sciences; **KCM** Kent Core Composition; **KFA** Kent Core Fine Arts; **KHU** Kent Core Humanities; **KMC** Kent Core Mathematics and Critical Reasoning; **KSS** Kent Core Social Sciences; **WIC** Writing Intensive