



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

Course Subject and Title	Credit Hours	Upper Div.	Min. Grade	Major GPA	Important Notes
<b>Semester One: [17 Credit Hours]</b>					
<b>Note: With the selection of appropriate concentration electives, this program meets the minimum requirements for certification by the American Chemical Society</b>					
<b>BSCI 10120 Biological Foundations</b>	4			■	Fulfills Kent Core Basic Sciences
<b>CHEM 10060 General Chemistry I and (4) and CHEM 10062 General Chemistry I Laboratory (1) or CHEM 10960 Honors General Chemistry (5)</b>	5			■	Fulfills Kent Core Basic Sciences; take CHEM 10062 if 10060 is selected
<b>MATH 12021 Calculus for Life Sciences</b>	4			■	Approved as proficiency to fulfill Kent Core Mathematics and Critical Reasoning
US 10097 Destination Kent State: First Year Experience	1				Not required for transfer students with 25 credits
Kent Core Requirement	3				See Kent Core Summary on page 2
<b>Semester Two: [14 Credit Hours]</b>					
<b>CHEM 10061 General Chemistry II (4) and CHEM 10063 General Chemistry II Laboratory (1) or CHEM 10961 Honors General Chemistry (5)</b>	5			■	If CHEM 10060 was taken; select CHEM 10061 and 10063; if CHEM 10960 was taken, select CHEM 10961; CHEM 10061 fulfills Kent Core Additional
<b>MATH 12022 Probability and Statistics for Life Sciences</b>	3			■	
Kent Core Requirement	3				See Kent Core Summary on page 2
Kent Core Requirement	3				
<b>Semester Three: [15 Credit Hours]</b>					
<b>BSCI 30156 Elements of Genetics</b>	3	■		■	
<b>CHEM 30475 Organic Chemistry Laboratory I</b>	1	■		■	Offered in fall and summer only
<b>CHEM 30481 Organic Chemistry I</b>	3	■		■	Offered in fall and summer only
<b>PHY 13001 General College Physics I</b>	4			■	Fulfills Kent Core Additional
<b>PHY 13021 General College Physics Laboratory I</b>	1			■	Fulfills Kent Core Basic Sciences
Kent Core Requirement	3				See Kent Core Summary on page 2
<b>Semester Four: [15 Credit Hours]</b>					
<b>BSCI 30140 Cell Biology</b>	4	■		■	
<b>CHEM 30301 Inorganic Chemistry I</b>	2	■		■	Offered in spring only
<b>CHEM 30476 Organic Chemistry Laboratory II</b>	1	■		■	Offered in spring and summer only
<b>CHEM 30482 Organic Chemistry II</b>	3	■		■	Offered in spring and summer only
<b>PHY 13002 General College Physics II</b>	4			■	Fulfills Kent Core Basic Sciences
<b>PHY 13022 General College Physics Laboratory II</b>	1			■	Fulfills Kent Core Basic Sciences
<b>Semester Five: [15 Credit Hours]</b>					
<b>CHEM 30105 Analytical Chemistry I</b>	3	■		■	Offered in fall only
<b>CHEM 30107 Analytical Chemistry Laboratory I</b>	1	■		■	Fulfills writing-intensive course requirement; offered in fall only; see note 1 on page 2
<b>CHEM 40567 Basic Concepts of Physical Chemistry</b>	4	■		■	Offered in fall only
Foreign Language (Elementary I)	4-5				Fulfills College General Requirement
Kent Core Requirement	3				See Kent Core Summary on page 2
<b>Semester Six: [16 Credit Hours]</b>					
<b>BSCI 30171 General Microbiology</b>	4	■		■	
<b>CHEM 40245 Biochemical Foundations of Medicine</b>	4	■		■	Typically offered in spring and summer only
<b>CHEM 40568 Elementary Physical Chemistry Laboratory</b>	1	■		■	Offered in spring only
Foreign Language (Elementary II)	4-5				Fulfills College General Requirement
Kent Core Requirement	3				See Kent Core Summary below


**Critical requirements are boldface in shaded areas**

Course Subject and Title	Credit Hours	Upper Div.	Min. Grade	Major GPA	Important Notes
<b>Semester Seven: [15 Credit Hours]</b>					
<b>CHEM 40248 Advanced Biological Chemistry</b>	<b>3</b>	■		■	<b>Offered in fall only</b>
Kent Core Requirement	3				See Kent Core Summary below
Concentration Electives	6	■		■	See note 2 below
General Elective	3				
<b>Semester Eight: [14 Credit Hours]</b>					
<b>CHEM 40251 Advanced Biological Chemistry Laboratory</b>	<b>2</b>	■		■	<b>Fulfills writing-intensive course requirement; offered in spring only; see note 1 below</b>
<b>CHEM 40263 Physical Biochemistry</b>	<b>3</b>	■		■	<b>Offered in spring only</b>
Concentration Elective	2	■		■	See note 2 below
General Electives	7				Number of credits required depends on meeting minimum 121 credit hours and 42 upper-division hours

**Graduation Requirements Summary**

Minimum Total Hours	Minimum Upper-Division Hours	Minimum Kent Core Hours	Global / Domestic Diversity Course	Writing-Intensive	Experiential Learning	Minimum Major GPA	Minimum Overall GPA
121	42	36	Kent Core or General Electives	CHEM 30107 or 40251	Visit <a href="http://www.kent.edu/catalog/elr">www.kent.edu/catalog/elr</a>	2.000	2.000

**Kent Core Summary**

Kent Core Categories	Important Notes	Remaining Credit Hours
<b>Composition (6-8 credit hours)</b> <i>ENG 11002, 11011, 21011; HONR 10197, 10297</i>	Enrollment based on placement test	6-8
<b>Mathematics and Critical Reasoning (3-5 credit hours)</b>	Fulfilled in this major with MATH 12021	0
<b>Humanities and Fine Arts (9 credit hours)</b> <i>Minimum one course from humanities in Arts and Sciences category and minimum one course from fine arts category</i>	May fulfill diversity requirement	9
<b>Social Sciences (6 credit hours)</b> <i>Must be selected from two curricular areas</i>	May fulfill diversity requirement	6
<b>Basic Sciences (6-7 credit hours)</b> <i>Must include one laboratory</i>	Fulfilled in this major with BSCI 10120, CHEM 10060, CHEM 10063, PHY 13002, PHY 13021 and PHY 13022	0
<b>Additional (6 credit hours)</b>	Fulfilled in this major with CHEM 10061 and PHY 13001	0

**Note 1:** A minimum C grade must be earned in either CHEM 30107 or CHEM 40251 to fulfill the writing-intensive requirement.

**Note 2:** **Concentration electives (8 credit hours), choose from the following:**

BSCI 40143 Eukaryotic Cell Biology	3	CHEM 40303 Inorganic Chemistry III <sup>S</sup>	2
BSCI 40158 Molecular Biology	3	CHEM 40365 Biological Inorganic Chemistry	3
BSCI 40174 Immunology <sup>S</sup>	3	CHEM 40477 Intermediate Organic Chemistry Laboratory <sup>F</sup>	1
BTEC 40191 Seminar: Recent Developments in Biotechnology	1	CHEM 40483 Intermediate Organic Chemistry <sup>F</sup>	1
CHEM 30106 Analytical Chemistry II <sup>S</sup>	2	CHEM 40796 Individual Investigation	1-4
CHEM 40295 Special Topics in Biochemistry	1-3	CHEM department-approved upper-division electives	1-8
CHEM 40302 Inorganic Chemistry II <sup>F</sup>	2	<sup>F</sup> Offered in fall only <sup>S</sup> Offered in spring only	

**Note:** All courses taken from the list of major program requirements are used in the calculation of the major GPA.

**Kent Core**

 Students must complete a minimum 36 credit hours of the Kent Core. Certain courses required in programs and in student's major field may also fulfill the Kent Core. Honors equivalents shall satisfy the Kent Core. None of the courses on the Kent Core list may be taken with a pass/fail grade. Visit [www.kent.edu/catalog/kent-core](http://www.kent.edu/catalog/kent-core) for course list.

**Diversity Course Requirement**

 Students must complete a two-course diversity requirement, consisting of one with a domestic (U.S.) focus and one with a global focus. One course must come from the Kent Core. The second course may be taken as a second Kent Core, within a major or minor, or as a general elective; or, with dean's approval, by completing one semester of study in another country. Visit [www.kent.edu/catalog/diversity](http://www.kent.edu/catalog/diversity) for course list.



**Writing-Intensive Course Requirement**

Students must complete a one-course writing-intensive requirement in their major and earn minimum C (2.000) grade. Visit [www.kent.edu/catalog/wic](http://www.kent.edu/catalog/wic) for course list.

**Experiential Learning Requirement (ELR)**

To provide students with direct engagement in learning experiences that promote academic relevance, meaning and an understanding of real-world issues, students must complete this requirement at Kent State, either as a for-credit course or as a non-credit, non-course experience approved by the appropriate faculty member. Visit [www.kent.edu/catalog/elr](http://www.kent.edu/catalog/elr) for course list.

**Upper-Division Requirement**

Students must complete a minimum 39 upper-division (numbered 30000 to 49999) credit hours of coursework. Programs in the College of Arts and Sciences require a minimum of 42 hours of upper-division coursework.

**Foreign Language**

Visit [www.kent.edu/catalog/foreign-languages](http://www.kent.edu/catalog/foreign-languages) for course list.

