

# CHEMISTRY - B.A.

College of Arts and Sciences  
Department of Chemistry and Biochemistry  
[www.kent.edu/chemistry](http://www.kent.edu/chemistry)

## Contact Information

- Program Coordinator: **Scott Bunge** | [sbunge@kent.edu](mailto:sbunge@kent.edu) | 330-672-9445
- Speak with an Advisor
- Chat with an Admissions Counselor

## Fully Offered

- **Delivery:**
  - In person
- **Location:**
  - Kent Campus

## Examples of Possible Careers\*

### Chemical technicians

- 2.8% slower than the average
- 68,100 number of jobs
- \$49,820 potential earnings

### Chemistry teachers, postsecondary

- 4.3% about as fast as the average
- 26,400 number of jobs
- \$80,400 potential earnings

### Chemists

- 4.7% about as fast as the average
- 86,700 number of jobs
- \$79,300 potential earnings

### Food scientists and technologists

- 4.4% about as fast as the average
- 14,200 number of jobs
- \$73,450 potential earnings

### Forensic science technicians

- 14.1% much faster than the average
- 17,200 number of jobs
- \$60,590 potential earnings

### Natural sciences managers

- 4.8% about as fast as the average
- 71,400 number of jobs
- \$137,940 potential earnings

## Secondary school teachers, except special and career/technical education

- 3.8% about as fast as the average
- 1,050,800 number of jobs
- \$62,870 potential earnings

### \*Note

Source of occupation titles and labor data is from the U.S. Bureau of Labor Statistics'

Occupational Outlook Handbook. Data comprises projected percent change in employment over the next 10 years; nation-wide employment numbers; and the yearly median wage at which half of the workers in the occupation earned more than that amount and half earned less.

## Description

The Bachelor of Arts degree in Chemistry allows students greater flexibility in choosing electives than the B.S. degree. Although not intended for students planning to become practicing chemists, the B.A. degree program is well suited for those needing a strong chemistry background as preparation for other career opportunities.

The program may be used to meet pre-medicine and pre-dentistry requirements when appropriate courses from the biological sciences are used to fulfill elective hours. However, the B.S. degree in Chemistry, Biochemistry concentration, is strongly recommended for students interested in medical or dental school.

Students in the program have the opportunity to participate in an exchange program with the University of Leicester in England.

## Admission Requirements

The university affirmatively strives to provide educational opportunities and access to students with varied backgrounds, those with special talents and adult students who graduated from high school three or more years ago.

**First-Year Students on the Kent Campus:** First-year admission policy on the Kent Campus is selective. Admission decisions are based upon cumulative grade point average, strength of high school college preparatory curriculum and grade trends. Students not admissible to the Kent Campus may be administratively referred to one of the seven regional campus to begin their college coursework. For more information, visit the admissions website for first-year students.

**First-Year Students on the Regional Campuses:** First-year admission to Kent State's campuses at Ashtabula, East Liverpool, Geauga, Salem, Stark, Trumbull and Tuscarawas, as well as the Twinsburg Academic Center, is open to anyone with a high school diploma or its equivalent. Check with a regional campus admissions office to determine application requirements, as they may differ among campuses.

**International Students:** All international students must provide proof of English language proficiency (unless they meet specific exceptions) by earning a minimum 525 TOEFL score (71 on the Internet-based version), minimum 75 MELAB score, minimum 6.0 IELTS score, minimum 48 PTE score or minimum 100 DET score; or by completing the ESL level 112 Intensive Program. For more information, visit the admissions website for international students.

**Transfer Students:** For more information, visit the admissions website for transfer students.

**Former Students:** Former Kent State students or graduates who have not attended another college or university since Kent State may complete the reenrollment or reinstatement form on the University Registrar's website.

## Program Learning Outcomes

Graduates of this program will be able to:

1. Apply fundamental chemical knowledge as demonstrated by achieving passing grades in general chemistry courses.
2. Comprehend the chemistry that underlies several fields, such as materials, industrial and biological chemistry
3. Demonstrate skills in basic scientific report writing through laboratory courses.

## University Requirements

All students in a bachelor's degree program at Kent State University must complete the following university requirements for graduation.

**NOTE:** University requirements may be fulfilled in this program by specific course requirements. Please see Program Requirements for details.

Destination Kent State: First Year Experience	1
Course is not required for students with 25 transfer credits, excluding College Credit Plus, or age 21+ at time of admission.	
Diversity Domestic/Global (DIVD/DIVG)	2 courses
Students must successfully complete one domestic and one global course, of which one must be from the Kent Core.	
Experiential Learning Requirement (ELR)	varies
Students must successfully complete one course or approved experience.	
Kent Core (see table below)	36-37
Writing-Intensive Course (WIC)	1 course
Students must earn a minimum C grade in the course.	
Upper-Division Requirement	39
Students must successfully complete 39 upper-division (numbered 30000 to 49999) credit hours to graduate.	
Total Credit Hour Requirement	120

## Kent Core Requirements

Kent Core Composition (KCOMP)	6
Kent Core Mathematics and Critical Reasoning (KMCR)	3
Kent Core Humanities and Fine Arts (KHUM/KFA) (min one course each)	9
Kent Core Social Sciences (KSS) (must be from two disciplines)	6
Kent Core Basic Sciences (KBS/KLAB) (must include one laboratory)	6-7
Kent Core Additional (KADL)	6
<b>Total Credit Hours:</b>	<b>36-37</b>

## Program Requirements

### Major Requirements

Code	Title	Credit Hours
<b>Major Requirements (courses count in major GPA)</b>		
CHEM 10060	GENERAL CHEMISTRY I (KBS)	4-6
or CHEM 10970	HONORS GENERAL CHEMISTRY I (KBS)	
or CHEM 11060	GENERAL CHEMISTRY I BOOST (KBS)	
CHEM 10061	GENERAL CHEMISTRY II (KBS)	4

or CHEM 10971	HONORS GENERAL CHEMISTRY II (KBS)	
CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
CHEM 10063	GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)	1
CHEM 20481	BASIC ORGANIC CHEMISTRY I	4
or CHEM 30481	ORGANIC CHEMISTRY I	
CHEM 20482	BASIC ORGANIC CHEMISTRY II	2
or CHEM 30482	ORGANIC CHEMISTRY II	
CHEM 30105	ANALYTICAL CHEMISTRY I	3
CHEM 30107	ANALYTICAL CHEMISTRY LABORATORY I (WIC) <sup>1</sup>	1
CHEM 30284	INTRODUCTORY BIOLOGICAL CHEMISTRY	4
CHEM 30301	INORGANIC CHEMISTRY I	2
CHEM 30475	ORGANIC CHEMISTRY LABORATORY I (ELR)	1
CHEM 30476	ORGANIC CHEMISTRY LABORATORY II	1
CHEM 40302	INORGANIC CHEMISTRY II	2
CHEM 40567	PHYSICAL CHEMISTRY FOR LIFE SCIENCES	4
CHEM 40568	ELEMENTARY PHYSICAL CHEMISTRY LABORATORY	1
MATH 11010	ALGEBRA FOR CALCULUS (KMCR)	3
MATH 11022	TRIGONOMETRY (KMCR)	3
MATH 12002	ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
PHY 13001	GENERAL COLLEGE PHYSICS I (KBS)	4
PHY 13002	GENERAL COLLEGE PHYSICS II (KBS)	4
PHY 13021	GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	1
PHY 13022	GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	1
Chemistry Elective, choose from the following:		1-3
CHEM 30050	INTRODUCTION TO MATERIALS CHEMISTRY	
CHEM 30106	ANALYTICAL CHEMISTRY II	
CHEM 40248	ADVANCED BIOLOGICAL CHEMISTRY	
CHEM 40303	INORGANIC CHEMISTRY III	
CHEM 40477	INTERMEDIATE ORGANIC CHEMISTRY LABORATORY	
CHEM 40483	INTERMEDIATE ORGANIC CHEMISTRY	
CHEM 40796	INDIVIDUAL INVESTIGATION	
Chemistry (CHEM) Elective Options Approved by Department		
<b>Additional Requirements (courses do not count in major GPA)</b>		
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
Foreign Language (see Foreign Language College Requirement below)		14-16
Kent Core Composition		6
Kent Core Humanities and Fine Arts (minimum one course from each)		9
Kent Core Social Sciences (must be from two disciplines)		6
General Electives (total credit hours depends on earning 120 credit hours, including 39 upper-division credit hours)		27
<b>Minimum Total Credit Hours:</b>		<b>120</b>

<sup>1</sup> A minimum C grade must be earned to fulfill the writing-intensive requirement.

### Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
2.000	2.000

## Foreign Language College Requirement, B.A.

Students pursuing the Bachelor of Arts degree in the College of Arts and Sciences must complete 14-16 credit hours of foreign language.<sup>1</sup>

To complete the requirement, students need the equivalent of Elementary I and II in any language, plus one of the following options<sup>2</sup>:

- Intermediate I and II of the same language
- Elementary I and II of a second language
- Any combination of two courses from the following list:
  - Intermediate I of the same language
  - ARAB 21401
  - ASL 19401
  - CHIN 25421
  - MCLS 10001
  - MCLS 20001
  - MCLS 20091
  - MCLS 21417
  - MCLS 21420
  - MCLS 22217
  - MCLS 28403
  - MCLS 28404

<sup>1</sup> All students with prior foreign language experience should take the foreign language placement test to determine the appropriate level at which to start. Some students may start beyond the Elementary I level and will complete the requirement with fewer credit hours and fewer courses. This may be accomplished by (1) passing a course beyond Elementary I through Intermediate II level; (2) receiving credit through one of the alternative credit programs offered by Kent State University; or (3) demonstrating language proficiency comparable to Elementary II of a foreign language. When students complete the requirement with fewer than 14 credit hours and four courses, they will complete remaining credit hours with general electives.

<sup>2</sup> Certain majors, concentrations and minors may require specific languages, limit the languages from which a student may choose or require coursework through Intermediate II. Students who plan to pursue graduate study may need particular language coursework.

## Roadmap

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

Semester One		Credits
!	CHEM 10060 GENERAL CHEMISTRY I (KBS) or CHEM 10970 or HONORS GENERAL CHEMISTRY I (KBS) or CHEM 11060 or GENERAL CHEMISTRY I BOOST (KBS)	4-6
!	CHEM 10062 GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
!	MATH 11010 ALGEBRA FOR CALCULUS (KMCR)	3
	UC 10097 DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
	Kent Core Requirement	3
	Kent Core Requirement	3
<b>Credit Hours</b>		<b>15</b>

<b>Semester Two</b>		
!	CHEM 10061 GENERAL CHEMISTRY II (KBS) or CHEM 10971 or HONORS GENERAL CHEMISTRY II (KBS)	4
!	CHEM 10063 GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)	1
!	MATH 11022 TRIGONOMETRY (KMCR)	3
	Kent Core Requirement	3
	Kent Core Requirement	3
<b>Credit Hours</b>		<b>14</b>
<b>Semester Three</b>		
!	CHEM 20481 BASIC ORGANIC CHEMISTRY I or CHEM 30481 or ORGANIC CHEMISTRY I	3-4
!	CHEM 30475 ORGANIC CHEMISTRY LABORATORY I (ELR)	1
!	PHY 13001 GENERAL COLLEGE PHYSICS I (KBS)	4
!	PHY 13021 GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	1
!	MATH 12002 ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
	Foreign Language	4
<b>Credit Hours</b>		<b>18</b>
<b>Semester Four</b>		
!	CHEM 20482 BASIC ORGANIC CHEMISTRY II or CHEM 30482 or ORGANIC CHEMISTRY II	2-3
!	CHEM 30301 INORGANIC CHEMISTRY I	2
!	CHEM 30476 ORGANIC CHEMISTRY LABORATORY II	1
!	PHY 13002 GENERAL COLLEGE PHYSICS II (KBS)	4
!	PHY 13022 GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	1
	Foreign Language	4
<b>Credit Hours</b>		<b>15</b>
<b>Semester Five</b>		
	CHEM 30105 ANALYTICAL CHEMISTRY I	3
	CHEM 30107 ANALYTICAL CHEMISTRY LABORATORY I (WIC)	1
!	CHEM 40567 PHYSICAL CHEMISTRY FOR LIFE SCIENCES	4
	Foreign Language	3
	Kent Core Requirement	3
	Kent Core Requirement	3
<b>Credit Hours</b>		<b>17</b>
<b>Semester Six</b>		
	CHEM 30284 INTRODUCTORY BIOLOGICAL CHEMISTRY	4
	CHEM 40568 ELEMENTARY PHYSICAL CHEMISTRY LABORATORY	1
	Foreign Language	3
	Kent Core Requirement	3
	General Elective	3
<b>Credit Hours</b>		<b>14</b>
<b>Semester Seven</b>		
!	CHEM 40302 INORGANIC CHEMISTRY II	2
	Chemistry Elective	1-3
	General Electives	12
<b>Credit Hours</b>		<b>15</b>
<b>Semester Eight</b>		
	General Electives	12
<b>Credit Hours</b>		<b>12</b>
<b>Minimum Total Credit Hours:</b>		<b>120</b>