

# CHEMISTRY - PH.D.

## College of Arts and Sciences

Department of Chemistry and Biochemistry

[www.kent.edu/chemistry](http://www.kent.edu/chemistry)

## Contact Information

- Program Coordinator: **Erin Michael-McLaughlin** | [enmichae@kent.edu](mailto:enmichae@kent.edu) | 330-672-0032
- Chat with an Admissions Counselor

## Fully Offered

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

## Admission Terms

- Fall
- Spring

## 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

### Additional Careers

- Patent law
- Product development
- Formulation

#### \*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 Ph.D. degree in Chemistry provides students with opportunities for research in the areas of analytical, inorganic, organic and physical chemistry, as well as biochemistry. Many of the research topics are built around interdisciplinary themes in biomedical research (bioanalytical, bioinorganic and biophysical chemistry) and materials science (nanomaterials, liquid crystals, photonic materials, spectroscopy, surface science).

## Admission Requirements

- Bachelor's degree or higher from an accredited college or university
- Minimum 2.750 undergraduate GPA on a 4.000 point scale
- Completion of undergraduate courses consisting of one year each in analytical chemistry or biochemistry, organic chemistry, physical chemistry, calculus and physics is expected
- Official transcript(s)
- Goal statement
- Three letters of recommendation
- English language proficiency - all international students must provide proof of English language proficiency (unless they meet specific exceptions) by earning one of the following:
  - Minimum 525 TOEFL PBT score (paper-based version)
  - Minimum 71 TOEFL IBT score (Internet-based version)
  - Minimum 74 MELAB score
  - Minimum 6.0 IELTS score
  - Minimum 50 PTE score
  - Minimum 100 Duolingo English Test score

For more information about graduate admissions, please visit the Graduate Studies admission website. For more information on international admission, visit the Office of Global Education's admission website.

<sup>1</sup> Completion of undergraduate courses consisting of one year each in analytical chemistry or biochemistry, organic chemistry, physical chemistry, calculus and physics is expected.

## Program Learning Outcomes

Graduates of this program will be able to:

1. Demonstrate an improved knowledge of a specialization within chemistry.
2. Plan and execute chemical experiments.

## Program Requirements

### Major Requirements

Code	Title	Credit Hours
<b>Major Requirements</b>		
CHEM 70894	COLLEGE TEACHING OF CHEMISTRY	1
CHEM 80199	DISSERTATION I <sup>1</sup>	30
Chemistry Electives		21
Chemistry Seminar Electives, choose from the following:		4
CHEM 72191	SEMINAR: ANALYTICAL CHEMISTRY	
CHEM 72391	SEMINAR: INORGANIC CHEMISTRY	
CHEM 72491	SEMINAR: ORGANIC CHEMISTRY	
CHEM 72591	SEMINAR: PHYSICAL CHEMISTRY	
Chemistry Seminars in Development/Problem Solving Electives, choose from the following:		4
CHEM 70291	SEMINAR: RECENT DEVELOPMENTS IN BIOCHEMISTRY	
CHEM 70391	SEMINAR: RECENT DEVELOPMENTS IN INORGANIC CHEMISTRY	
CHEM 70591	SEMINAR: RECENT DEVELOPMENTS IN PHYSICAL CHEMISTRY	
CHEM 71191	SEMINAR: PROBLEM SOLVING IN ANALYTICAL CHEMISTRY	
CHEM 71491	SEMINAR: PROBLEM SOLVING IN ORGANIC CHEMISTRY	
<b>Minimum Total Credit Hours for Post-Baccalaureate Students</b>		<b>90</b>
<b>Minimum Total Credit Hours for Post-Master's Students</b>		<b>60</b>

<sup>1</sup> Each doctoral candidate, upon admission to candidacy, must register for CHEM 80199 for a total of 30 credit hours. It is expected that a doctoral candidate will continuously register for Dissertation I, and thereafter CHEM 80299, each semester, until all requirements for the degree have been met.

### Candidacy for Degree

To be admitted to candidacy for the doctoral degree, the student must pass a written examination in the field of specialization, the form and time of the examination being determined by each division (analytical chemistry, biochemistry, inorganic chemistry, organic chemistry or physical chemistry). Those failing this examination may repeat the examination once. After passing the written examination, the student must present a detailed written proposal for his/her dissertation research. The successful oral defense of this proposal and its acceptance by the advisory committee admits the student to candidacy for the Ph.D. degree.