

# BIOLOGICAL SCIENCES - CELL BIOLOGY AND MOLECULAR GENETICS - M.S.

College of Arts and Sciences  
Department of Biological Sciences  
[www.kent.edu/biology/graduate](http://www.kent.edu/biology/graduate)

## Examples of Possible Careers\*

### Biological science teachers, postsecondary

- 9.3% much faster than the average
- 64,700 number of jobs
- \$85,600 potential earnings

### Biological scientists, all other

- 2.2% slower than the average
- 44,700 number of jobs
- \$85,290 potential earnings

### Biological technicians

- 4.9% about as fast as the average
- 87,500 number of jobs
- \$46,340 potential earnings

### Microbiologists

- 3.1% about as fast as the average
- 20,200 number of jobs
- \$84,400 potential earnings

## Contact Information

- Program Coordinator: **Heather Caldwell** | [bscigrad@kent.edu](mailto:bscigrad@kent.edu) | 330-672-3636
- Chat with an Admissions Counselor

## Fully Offered

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

## Admission Terms

- Fall

### \*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 Master of Science degree in Biological Sciences–Cell Biology and Molecular Genetics is an individualized program of study and research that prepares students for career opportunities in teaching and research in academic, governmental and industrial settings. A core series of courses sets a rigorous foundation in theory, experimental design and technical knowledge of contemporary investigations at the cellular level of organization. Areas of research include developmental biology, cellular and developmental neuroscience, immunology, reproductive biology, cellular endocrinology and molecular genetics.

## Admission Requirements

- Bachelor's degree from an accredited college or university
- Completion of undergraduate coursework roughly equivalent to the Biology minor
- Minimum 2.750 undergraduate GPA on a 4.000-point scale
- Official transcript(s) - copies of official transcripts can be submitted for initial review of application
- GRE scores (general test) (effective for spring 2023 admissions, the GRE will no longer be required)
- Résumé or curriculum vitae (required starting with spring 2023 admissions)
- Personal statement that clearly explains why the applicant wishes to pursue an advanced degree and describes research experience and interest; statement must include a list of potential faculty mentors
- Three letters of recommendation that comment on chance of success in an advanced degree program, with minimum one from someone who can comment on research aptitude
- 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 587 TOEFL PBT score (paper-based version)
  - Minimum 94 TOEFL IBT score (Internet-based version)
  - Minimum 82 MELAB score
  - Minimum 7.0 IELTS score
  - Minimum 65 PTE score
  - Minimum 120 Duolingo English test score

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

## Program Learning Outcomes

Graduates of this program will be able to:

1. Understand advanced biological concepts beyond the scope of the typical undergraduate degree and increase the depth of their knowledge through coursework and hands-on experiences
2. Apply scientific principles and appreciate work outside of their particular field
3. Effectively communicate about science with colleagues as well as those outside of the student's area of expertise
4. Develop the necessary laboratory skills that will allow testing of hypotheses

## Program Requirements

### Major Requirements

Code	Title	Credit Hours
<b>Major Requirements</b>		
BSCI 50142	BIOENERGETICS	3
BSCI 50143	EUKARYOTIC CELL BIOLOGY	3
BSCI 60104	BIOLOGICAL STATISTICS <sup>1</sup>	4
BSCI 60144	SELECTED READINGS IN EUKARYOTIC CELL BIOLOGY	1
BSCI 60184	RESPONSIBLE CONDUCT IN RESEARCH AND TEACHING-BIOLOGICAL SCIENCES <sup>2</sup>	2
BSCI 60191	SEMINAR IN BIOLOGY (repeated each semester)	4-6
Major Electives <sup>4</sup>		7-9
Student Seminar Presentation <sup>5</sup>		
<i>Culminating Requirement</i>		
BSCI 60199	THESIS I <sup>3</sup>	6
<b>Minimum Total Credit Hours:</b>		<b>32</b>

<sup>1</sup> Students may substitute a different graduate-level statistics course for BSCI 60104, if deemed appropriate by the students' advisor/guidance committee.

<sup>2</sup> Students are required to enroll in BSCI 60184 their first semester (or the following fall semester for those starting their studies in the spring semester).

<sup>3</sup> After completing 6 credit hours of BSCI 60199, students must register continually for BSCI 60299 until the degree is earned. Students begin research by successfully preparing, presenting and defending a formal prospectus for their research project to their committee. For the thesis and final defense, it is expected that students will present the results of their study in a defense open to students and faculty. The thesis must be presented and defended before the Guidance Committee with not more than one negative vote in order to be recommended to the Department of Biological Sciences and the College of Arts and Sciences for degree conferral.

<sup>4</sup> Students are to select courses in consultation with their academic faculty advisor. It is recommended that students enroll in BSCI 50195 for selected current topics. Additional coursework should provide the necessary skills and/or knowledge base to aid in the completion of the student's research project and be beneficial for their professional development.

<sup>5</sup> Students are required to present at least one departmental seminar about their work.

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### Graduation Requirement

Students must complete a minimum 14 credit hours of graduate courses beyond BSCI 60198 toward their degree.