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

College of Sciences and Humanities
Department of Biological Sciences
www.kent.edu/biology/graduate

About This Program

Dive into the science at the core of life as you explore how cells function, communicate and evolve at the molecular level. This research-driven program combines advanced coursework with hands-on lab experience, preparing you to investigate complex biological systems and contribute to breakthroughs in health, biotechnology and beyond. With flexible, individualized study and close faculty mentorship, you will be equipped for impactful careers or doctoral study. Read more...

Contact Information

- **Oscar Rocha** | bscigrad@kent.edu | 330-672-2297
- Connect with an Admissions Counselor

Program Delivery

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

Examples of Possible Careers and Salaries*

Biological science teachers, postsecondary

- 7.3% faster than the average
- 66,000 number of jobs
- $83,460 potential earnings

Biological scientists, all other

- 1.2% slower than the average
- 63,700 number of jobs
- $93,330 potential earnings

Biological technicians

- 3.5% about as fast as the average
- 82,700 number of jobs
- $52,000 potential earnings

Microbiologists

- 4.1% about as fast as the average
- 20,700 number of jobs
- $87,330 potential earnings

* Source of occupation titles and labor data comes 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.

For more information about graduate admissions, visit the graduate admission website. For more information on international admissions, visit the international admission website.

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
- Résumé or curriculum vitae
- 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 to waive) by earning one of the following:[1]
  - Minimum 94 TOEFL iBT score
  - Minimum 7.0 IELTS score
  - Minimum 65 PTE score
  - Minimum 120 DET score

[1] International applicants who do not meet the above test scores will not be considered for admission.

Application Deadlines

- **Fall Semester**
  - Priority deadline: November 15

All application materials (including applicable fee, transcripts, recommendation letters, etc.) submitted by this deadline will receive the strongest consideration for admission.

Program Requirements

Major Requirements

Code	Title	Credit Hours
Major Requirements		
BSCI 50142	BIOENERGETICS	3
BSCI 50143	EUKARYOTIC CELL BIOLOGY	3
BSCI 60104	BIOLOGICAL STATISTICS	4
BSCI 60144	SELECTED READINGS IN EUKARYOTIC CELL BIOLOGY	1
BSCI 60184	RESPONSIBLE CONDUCT IN RESEARCH AND TEACHING-BIOLOGICAL SCIENCES [1]	2
BSCI 60191	SEMINAR IN BIOLOGY (taken 2-4 times)	2-4
or BSCI 60491	SEMINAR IN PHYSIOLOGY	

Major Electives, choose from the following:		9-11
BMS 60440	CELLULAR AND MOLECULAR SIGNALING	
BMS 60729	CELLULAR AND MOLECULAR NEUROSCIENCE	
CHEM 50261	BIOCHEMISTRY: BIOMOLECULE STRUCTURE AND FUNCTION	
Any Biological Sciences (BSCI) Graduate Courses (50000 level or higher)		
Other graduate courses as approved by guidance committee		
Culminating Requirement		
BSCI 60199	THESIS I [2]	6
Minimum Total Credit Hours:		**32**

1 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).

2 After completing 6 credit hours of BSCI 60199, students must register continually for BSCI 60299 until the degree is earned. Credit hours for BSCI 60299 do not count toward the degree. 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.

Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
-	3.000

- Students are required to present at least one departmental seminar about their work.
- Students must complete a minimum 14 credit hours of graduate courses beyond BSCI 60198 toward their degree.
- 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 Sciences and Humanities for degree conferral.
- No more than one-half of a graduate student's coursework may be taken in 50000-level courses.
- Grades below C are not counted toward completion of requirements for the degree.

Program Learning Outcomes

Graduates of this program will be able to:

1. Explain advanced biological concepts specific to cellular biology and molecular genetics beyond the undergraduate level.
2. Design experiments to test scientific hypotheses using appropriate methods and research techniques.
3. Conduct original research studies to investigate specific biological questions and present findings.
4. Communicate scientific findings effectively to disciplinary and interdisciplinary audiences.

Full 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.