

BIOMEDICAL SCIENCES - CELLULAR AND MOLECULAR BIOLOGY - M.S.

College of Arts and Sciences
School of Biomedical Sciences
Cunningham Hall
Kent Campus
330-672-2263
www.kent.edu/biomedical

Description

The Master of Science degree in Biomedical Sciences–Cellular and Molecular Biology prepares creative research scientists for careers in teaching, research and biotechnology. Graduates possess an in-depth comprehension of experimental design at the cellular and molecular levels of biological organization, as well as competency in current techniques in the discipline. Major research emphases include signal transduction, biochemistry and pathobiology, gene regulation, cell systems biology, cell and tissue ultrastructure, membrane structure and function, molecular aspects of neurobiology and endocrinology, genetics and metabolism of microorganisms, virology and immunology and enzymology with an emphasis on protein dynamics and folding, as well as cytochrome P-450s.

Program faculty are drawn from several departments at Kent State University, University of Akron, Cleveland Clinic Foundation and Northeast Ohio Medical University (NEOMED). Additional participant faculty are located at area clinical facilities and hospitals. This multi-departmental and inter-institutional structure gives doctoral candidates access to the talents of a broadly diverse research faculty, as well as significant research facilities and resources.

The Biomedical Sciences–Cellular and Molecular Biology major comprises the following concentrations:

- Cellular Biology and Structure
- Molecular Biology and Genetics

FULLY OFFERED AT:

- Kent Campus

Admission Requirements

- Bachelor's degree from an accredited college or university for unconditional admission
- Minimum 3.000 undergraduate GPA on a 4.000 point scale for unconditional admission
- Academic preparation adequate to perform graduate work in the desired field (typically two years of chemistry, one year of mathematics, one year of physics and courses in anthropology, biology and psychology)
- Official transcript(s)
- GRE scores
- 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 600 TOEFL PBT score (paper-based version)
 - Minimum 100 TOEFL IBT score (Internet-based version)
 - Minimum 85 MELAB score
 - Minimum 7.0 IELTS score
 - Minimum 68 PTE score

Admission with deficiencies may be accorded, but these must be made up during the first two years of graduate study. 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.

Program Learning Outcomes

Graduates of this program will be able to:

1. Publish their research in peer-reviewed journals.
2. Demonstrate the ability to teach undergraduate students.
3. Seek employment after graduation in fields that reflect their area of training.

Program Requirements

Major requirements

Code	Title	Credit Hours
Major Requirements		
Methodology and Elective Courses (Chemistry, Biological Sciences, Biomedical Sciences)		15
BMS 60199	THESIS I	6
Concentrations		
Choose from the following:		11
Cellular Biology and Structure		
Molecular Biology and Genetics		
Minimum Total Credit Hours:		32

Cellular Biology and Structure Concentration Requirements

Code	Title	Credit Hours
Concentration Requirements		
BMS 60220	HUMAN MICROSCOPIC ANATOMY	5
BSCI 50142	BIOENERGETICS	3
BSCI 50143	EUKARYOTIC CELL BIOLOGY	3
Minimum Total Credit Hours:		11

Molecular Biology and Genetics Concentration Requirements

Code	Title	Credit Hours
Concentration Requirements		
BSCI 50143	EUKARYOTIC CELL BIOLOGY	3
or BSCI 50158	MOLECULAR BIOLOGY	
or CHEM 60254	BIOMEMBRANES	

Methodology and Elective Courses (Chemistry, Biological Sciences, Biomedical Sciences)	8-9
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Minimum Total Credit Hours:	11