M.S. in Biological Science with a Pre-Health Specialization
The master's degree in Biological Science with a pre-health focus consists of coursework that is intended to prepare the student for medical/dental/physician assistant/allied health school curricula. The pre-health specialization coursework includes 27 hours of core courses, three hours of capstone course (BIOL 6838), and six hours of graduate electives. A thesis option is also available.

Core coursework (27 hours):
- BIOL 4342 Biochemistry II
- BIOL 5132 Cell Signaling
- BIOL 5332 Toxicology
- BIOL 5432 Principles of Pharmacology
- BIOL 5435 Advanced Immunology
- BIOL 5635 Neuroscience
- BIOL 5734 Oncogenes
- BIOL 5736 Bioethics
- BIOL 5436 Physiological Basis of Disease

Designated electives (6 hours):
- BIOL 4332 Histology
- BIOL 4347 Cellular Physiology
- BIOL 4348 Developmental Biology
- BIOL 4351 Molecular Biology
- BIOL 5131 Membrane Biology
- BIOL 5433 Enzymology
- BIOL 5437 Human Gross Anatomy
- BIOL 5417 Lab for Human Gross Anatomy
- BIOL 5731 Advanced Cancer Biology
- BIOL 5939 Independent Study in Biological Science

UHCL Pre-Health Advisory Committee Web page: [http://www.uhcl.edu/sce/HPAC](http://www.uhcl.edu/sce/HPAC)

M.S in Biological Science with a Cell/Molecular Specialization
The master’s degree in Biology with a cell/molecular biology focus consists of coursework that is intended to prepare the student for a career in biomedical research. The cell/molecular
specialization includes coursework selected from the list below, in consultation with the faculty adviser, and a three hour capstone course (BIOL 6838). A thesis option is also available.

**Core coursework (select 33 hours)**
- **BIOL 5333** Industrial Microbiology
- **BIOL 5433** Enzymology
- **BIOL 5435** Advanced Immunology
- **BIOL 5632** Bioenergetics
- **BIOL 5634** Apoptosis
- **BIOL 5731** Advanced Cancer Biology
- **BIOL 5732** Advanced Molecular Biology
- **BIOL 5734** Oncogenes
- **BIOL 5737** Molecular Vectors
- **BIOL 5738** Gene Therapy
- **BIOL 5931** Research Topics in Biology
- **BIOL 5939** Independent Study in Biological Science
- **BIOL 5x3x** Approved Elective Course
- **BIOT 5031** Applied Biotechnology
- **BIOT 5021** Methods of Biotechnology
- **BIOT 5011** Methods of Biotechnology Discussions
- **BIOT 5121** Advanced Methods of Biotechnology I
- **BIOT 5121** Advanced Methods of Biotechnology I Discussions
- **BIOT 5122** Advanced Methods of Biotechnology II
- **BIOT 5112** Advanced Methods of Biotechnology II Discussions

**MS in Biological Science with an Ecology/Microbiology/Aquatic and Marine Biology Specialization**
The master’s degree in Biological Science with an ecology/microbiology/aquatic and marine biology focus consists of coursework that is intended to prepare the student for a career in environmental biology research, consulting, or in the government/regulatory sector. The ecology/microbiology/aquatic and marine biology specialization includes coursework selected from the list below, in consultation with the faculty adviser and a three hour capstone course (BIOL 6838). A thesis option is also available.

**Core coursework (select 33 hours)**
- **BIOL 5235** Ichthyology
  And
- **BIOL 5215** Laboratory for Ichthyology
- **BIOL 5233** Ecotoxicology
M.S. in Biological Science with a Plant Biology Specialization
The master’s degree in Biological Science with a plant biology focus consists of coursework that is intended to prepare the student for a career in plant biochemistry and genetics, nutritional biochemistry and biomedical research. The plant biology specialization includes coursework selected from the list below in consultation with the faculty adviser and a three hour capstone course (BIOL 6838). A thesis option is also available.

Core coursework (select 33 hours)
BIOL 5131 Membrane Biology
BIOL 5132 Cell Signaling
BIOL 5433 Enzymology
BIOT 5x3x Plant Genomic Analysis
BIOL 5533 Ecological Methods
BIOL 5534 Conservation Biology
BIOL 5632 Bioenergetics
BIOL 5732 Advanced Molecular Biology
BIOL 5931 Research Topics in Biology
BIOL 5x3x Approved Elective Course
BIOL 5939 Independent Study in Biological Science
BIOT 5031 Applied Biotechnology
BIOT 5x3x Approved Elective