

Biological Science M.S. 2016-2017

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>

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 5111](#) 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

- [BIOL 5234](#) Population and Community Dynamics
- [BIOL 5332](#) Toxicology
- [BIOL 5333](#) Industrial Microbiology
- [BIOL 5334](#) Microbial Ecology
- [BIOL 5531](#) Aquatic Toxicity Testing
- [BIOL 5532](#) Coastal and Estuarine Ecology
and
- [BIOL 5512](#) Laboratory for Coastal and Estuarine Ecology
- [BIOL 5533](#) Ecological Methods
- [BIOL 5534](#) Conservation Biology
- [BIOL 5535](#) Neotropical Rainforest Ecology
- [BIOL 5537](#) Limnology and Aquatic Biology
and
- [BIOL 5517](#) Limnology and Aquatic Biology
- [BIOL 5931](#) Research Topics in Biology
- [BIOL 5939](#) Independent Study in Biological Science
- [BIOL 5x3x](#) Approved Elective Course
- [ENSC 5331](#) Wetlands

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