BIOLOGICAL SCIENCES MAJOR (B.A.)

https://manchester.unh.edu/program/ba/biological-sciences-major

Description

Biology is the study of living organisms in both laboratory and field conditions. It concerns itself with questions of understanding the living world, its complex interrelationships, and the role of human beings within it.

The B.A. in biological sciences at UNH Manchester is designed to:

1. allow students to earn a baccalaureate degree in biology at UNH Manchester;
2. allow students to combine study in biology with other programs and disciplines by completing a second major, a minor, or a self-designed set of elective courses along with their biology degree;
3. provide an opportunity for students to complete a baccalaureate degree in biology while preparing to pursue a Master’s degree in biology, biotechnology, or other fields. These degree programs could be undertaken after completion of the B.A. Alternatively, UNH offers several accelerated Master’s programs where excellent senior students in the Biological Sciences major can complete coursework towards their undergraduate and graduate degrees at the same time;
4. allow students to complete a major in biology while taking required courses in education in preparation for the five-year M.A.T. or M.Ed. programs and state certification in secondary science education; or alternative state certification pathway;
5. provide an opportunity for students to complete a baccalaureate degree in biology while completing the required courses for admission to medical, dental, veterinary, physician assistant, pharmacy, physical therapy, optometry, and other professional or graduate programs.

Employment opportunities in the public and private sectors include education; industrial, clinical, and research laboratories; biotechnology; and environmental field research.

Requirements

Students must complete a minimum of 128 credits and satisfy the University’s Discovery Program and foreign language requirements. Each course required in the major must be completed with a minimum grade of C-. Students must attain a minimum GPA in the major of 2.0. Transfer students must complete at least 24 credits in the major at UNH. BIOL 413 Principles of Biology I, BIOL 414 Principles of Biology II may be used to satisfy the biological sciences Discovery requirement and CHEM 403 General Chemistry I, CHEM 404 General Chemistry II may be used to satisfy the Physical Sciences Discovery requirement. PSYC 402 Statistics in Psychology may be used to satisfy the Quantitative Reasoning Discovery requirement; however, students interested in graduate or professional programs are encouraged to take MATH 425 Calculus I, or MATH 424B Calculus for Life Sciences, to satisfy the Quantitative Reasoning requirement.

The UNH Manchester B.A. in biological sciences program is structured with three levels of coursework.

Biology Core Curriculum

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSCI 701</td>
<td>Senior Seminar I (during either semester of senior year)</td>
<td>1</td>
</tr>
<tr>
<td>BSCI 702</td>
<td>Research</td>
<td>4</td>
</tr>
<tr>
<td>BSCI 703</td>
<td>Internship</td>
<td>4</td>
</tr>
<tr>
<td>BSCI #794</td>
<td>Clinical Microbiology Internship</td>
<td>4</td>
</tr>
</tbody>
</table>

These courses are often required for admission to medical, professional, and other graduate programs. Medical and dental graduate schools also require PSYC 401 Introduction to Psychology and SOC 400 Introductory Sociology.

Self-Designed Concentration in Biology

Students will select, in consultation with their advisor, four biology courses at the 600-700 level to be taken at UNH Manchester or UNH Durham.

Capstone Experience

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSCI 701</td>
<td>Senior Seminar I (during either semester of senior year)</td>
<td>1</td>
</tr>
<tr>
<td>BSCI 702</td>
<td>Research</td>
<td>4</td>
</tr>
<tr>
<td>BSCI 703</td>
<td>Internship</td>
<td>4</td>
</tr>
<tr>
<td>BSCI #794</td>
<td>Clinical Microbiology Internship</td>
<td>4</td>
</tr>
</tbody>
</table>
BSCI 701 Senior Seminar I will meet weekly during either semester of the senior year in a seminar format. Students will share information about capstone experiences, listen to presentations on timely issues in biology, develop career preparation skills, and receive training in poster production. Other methods of oral presentation and scientific writing are explored as students prepare to present the results of their capstone activities at the Undergraduate Research Conference or other venues.

In addition, all students will take elective courses to fulfill the 128-credit requirement for a B.A. degree. These elective courses could fulfill the requirements for a major or minor in another program or they could fulfill a self-designed interdisciplinary concentration. Where appropriate, they could include some of the biology-related supporting science courses listed above. These courses would be selected in consultation with the advisor and the appropriate faculty advisor in another program.

For more information, contact Kyle MacLea (Kyle.MacLea@unh.edu), Program Coordinator, or contact the Office of Admissions (unhm.admissions@unh.edu), (603) 641-4150.

### Student Learning Outcomes

A student successfully completing the Biological Sciences program will be able to:

- Understand the fundamentals of basic biological principles, concepts, and theories.
- Demonstrate the ability to evaluate, apply, and synthesize biological information and ideas.
- Be competent in basic biology and chemistry laboratory skills and with the use of common laboratory equipment and instrumentation.
- Demonstrate the ability to communicate technical information related to biological sciences related topics in scientific writing and oral presentations.
- Understand, analyze, and evaluate primary research literature involving biological sciences related topics.
- Understand and apply the process of the scientific method, including being able to formulate hypotheses, design and conduct experiments with adequate controls to test hypotheses, interpret and evaluate data, and draw conclusions.
- Gather, analyze, organize, evaluate, and present scientific data, including the use of technology to solve problems and communicate information.
- Demonstrate the ability to function as a member of a team.
• Compete effectively for entry-level employment and for admission to graduate or professional schools in their chosen area and be successful in these endeavors.