Biology M.S.

Degree: Master of Science
https://www.towson.edu/fcsm/departments/biology/gradbiology/

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Greater Baltimore is a center of biotechnology and biomedical research. In addition, the region’s rapid growth and development have stimulated environmental concerns and placed strains on the education system. As a consequence, graduates with master’s-level training are sought by research facilities and private laboratories, environmental consulting firms, zoos, aquaria, and public and private secondary schools. The Master of Science degree in Biology is intended to provide students with advanced training in sub-disciplines of biology. Students may earn a degree through a thesis or non-thesis option.

The thesis option provides the necessary background and experience for those who plan further study for their Ph.D., for those whose employment requires research training, and for those who wish to teach in community colleges. This option includes a combination of course work and the completion of a major research project. The results of this project will be prepared for publication in the form of a thesis. Students will select their course work and research efforts in one of two areas: Molecular, Cellular and Microbiology, or Organismal Biology and Ecology. Graduate teaching and research assistantships are awarded on a competitive basis to full-time thesis students.

The non-thesis option is designed for those who want a broader background in biology, including secondary school teachers or students planning to apply to professional schools. This option allows students to obtain a degree entirely through course work. Research opportunities are available but not required for the degree. A diverse course offering is available in the evenings to accommodate working students.

Admission Requirements

- A minimum of 24 undergraduate units in biology
- Course work in general chemistry, organic chemistry, and physics.
- A GPA of 3.00 in previous biology course work. An overall GPA (i.e., in biology and all other courses) of 3.00 is required for full admission. Students lacking key prerequisites and/or having a GPA of 2.75-2.99 may rarely be given conditional admission. Any student admitted conditionally will be required to make up deficiencies in prerequisites and/or achieve a GPA of 3.00 in their first three graduate courses taken at Towson University.

Non-immigrant International Students

Program Enrollment: F-1 and J-1 students are required to be enrolled full-time. The majority of their classes must be in-person and on campus. See the list of programs that satisfy these requirements, and contact the International Student and Scholars Office with questions.

Admission Procedures: See additional information regarding Graduate Admission policies and International Graduate Application online.

**See Exceptions to Policy in Graduate Admissions.

Application to the Program

Please complete the online application, including the following:

- General application form, application fee, official transcripts, and three letters of recommendation from instructors or supervisors familiar with the student’s record, aptitude and potential for graduate work. Email addresses of references to be included on application form.
- A one-page personal statement explaining why you plan to pursue a graduate degree in biology, your curricular and/or research interests and your future career and/or educational plans.
- Whereas non-thesis degree applications are reviewed for both spring and fall admissions, thesis-degree applicants are only considered for fall admissions. Students who are applying to the thesis option must have the written support of a faculty member who is willing to serve as their thesis adviser prior to the application deadline. Therefore, thesis-option applicants should contact potential research faculty by January 10th. A successful interview with the potential research mentor and the Graduate Committee is required before an applicant can ultimately be accepted into the thesis-degree program, and priority will be given to thesis-option applicants who apply by Jan 10th.

Application Deadlines

- April 1st for the fall term (*Thesis-option applicants should contact potential research faculty by January 10th).
- November 1 for the spring term.

Degree Requirements

Thesis and non-thesis option students are required to complete 30 units of course work. Students may take a maximum of three courses at the 500 level for graduate credit at Towson University. No more than two courses in disciplines outside of Biology (with the exception of ENVS 604), and only with the prior approval of the student’s advisory committee or assigned adviser. A course taken for undergraduate credit at Towson University may not be repeated at the 500 level for graduate credit at Towson University.

Thesis Option

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
</tr>
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<tbody>
<tr>
<td>BIOL 796</td>
<td>PROFESSIONAL ASPECTS OF BIOLOGY</td>
<td>2</td>
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<tr>
<td>BIOL 797</td>
<td>GRADUATE SEMINAR</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 896</td>
<td>BIOLOGY THESIS</td>
<td>6</td>
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</table>

Research Area:

- 9

Molecular, Cellular and Microbiology
OR Organismal Biology and Ecology

Additional Biology Courses (includes ENVS 604) 3-12
Non-Biology Courses 0-6
Non-Thesis Research (Optional): 0-3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>BIOL 701</td>
<td>NON-THESIS RESEARCH</td>
</tr>
<tr>
<td>BIOL 703</td>
<td>INDEPENDENT STUDY</td>
</tr>
</tbody>
</table>

Total Units 30

- All course work must be approved by the student’s thesis advisory committee. Appropriate course work will be based on the student’s undergraduate background, area of research and career objectives. Students must select courses and focus their research efforts in one
of two areas: Molecular, Cellular and Microbiology, or Organismal Biology and Ecology.

- All students must complete and successfully defend a thesis before the degree is awarded.

### Non-thesis Option

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses:</td>
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<tr>
<td>BIOL 797</td>
<td>GRADUATE SEMINAR</td>
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<tr>
<td>Biology Courses (includes ENVS 604)</td>
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<tr>
<td>Non-Biology Courses</td>
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<tr>
<td>Non-Thesis Research (Optional):</td>
<td>0-6</td>
<td></td>
</tr>
<tr>
<td>BIOL 701</td>
<td>NON-THESIS RESEARCH</td>
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<tr>
<td>BIOL 703</td>
<td>INDEPENDENT STUDY</td>
<td></td>
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<tr>
<td>Total Units</td>
<td>30</td>
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</table>

- Non-thesis option students will select course work with assistance and approval of an adviser from the Biology graduate faculty. Course selections will be based on the student's undergraduate background, purpose for pursuing the M.S. degree, and current or planned career.

  a. Students will demonstrate an understanding of biological principles and communicate those principles in oral and written form.
  b. Students will be able to read, understand and critically review scientific literature within a selected area of biology, including evaluation of experimental design.
  c. Students will be able to design, conduct and defend original research projects (for Thesis students).
  d. Students will be able to conduct advanced instruction in undergraduate laboratories and classroom lecture settings (for Teaching Assistants).