# Molecular Biology (M.S.)

## Program Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 547</td>
<td>Molecular Biology I</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 548</td>
<td>Molecular Biology II</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 556</td>
<td>Molecular Biology of Proteins</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 592</td>
<td>Graduate Colloquium</td>
<td>1</td>
</tr>
</tbody>
</table>

### Research in Biological Literature

- BIOL 597 | Research in Biological Literature | 1 |

### Electives and Culminating Activity

#### Concentration/Specialization Courses

Select 14 credits (if completing a thesis) - 17 credits (if completing 14-17 BIOL 599 or a Lab course) from the following:

- **Biology Electives**
  - BIOL 505 | Experimental Cell Culture                |
  - BIOL 512 | Topics in Modern Genetics                |
  - BIOL 513 | Instrumentation and Techniques for Biological Science |
  - BIOL 515 | Population Genetics                      |
  - BIOL 520 | Plant Physiology                         |
  - BIOL 533 | Advanced Cell Biology                    |
  - BIOL 540 | Mammalian Physiology                     |
  - BIOL 549 | Topics in Developmental Biology          |
  - BIOL 550 | Topics in Microbiology                   |
  - BIOL 551 | Intermediary Metabolism I                |
  - BIOL 552 | Biology of Lipids                        |
  - BIOL 555 | Medical Genetics                         |
  - BIOL 557 | Virology                                 |
  - BIOL 558 | Microbial Genetics                       |
  - BIOL 560 | Molecular Genetics                       |
  - BIOL 561 | Genomics                                 |
  - BIOL 562 | Short Topics in Molecular Biology        |
  - BIOL 563 | Statistical Genomics                     |
  - BIOL 564 | Proteomics                               |
  - BIOL 565 | Advanced Plant Molecular Genetics         |
  - BIOL 566 | Bioinformatics                           |
  - BIOL 568 | Advanced Neuroscience                    |
  - BIOL 587 | Selected Advanced Topics in Molecular Biology |
  - BIOL 593 | Molecular Ecology                        |
  - BIOL 594 | Signal Transduction                      |
  - BIOL 598 | Selected Techniques in Molecular Biology |

- **Non-Departmental Approved Electives**
  - 0-9 credits may be completed from the following:
    - CHEM 570 | Advanced Biochemistry                    |
    - CHEM 575 | Enzyme Kinetics and Mechanisms           |
    - CHEM 577 | Nucleic Acid Biochemistry                |
    - CHEM 578 | Biochemistry Laboratory Techniques       |
    - CHEM 579 | Biomolecular Assay Development           |
    - CHEM 582 | Biochemical Pharmacology                 |

### Culminating Activity

- **Thesis**
  - BIOL 698 | Master’s Thesis                          |
  - Complete BIOL 698 for 6 credits. Submit the completed Thesis original and one copy to the Graduate Office. See Thesis Guidelines for details.

- **Non-Thesis Research Option**
  - BIOL 599 | Introduction to Biological Research      |
  - Complete BIOL 599 for 4 credits. Present a research summary to a committee of 3 faculty members. Results are reported to the Graduate School.

- **Non-Thesis Lab Option**
  - Complete a Laboratory Course for 3-4 credits with approval from graduate advisor.
  - Present a research summary to a committee of 3 faculty members. Results are reported to the Graduate School.

**Total Credits**: 32