

# MASTER OF SCIENCE IN BIOLOGY

**Web Site:** <https://twu.edu/biology/graduate-programs/master-of-science-in-biology/>

## Degree Requirements

### Total Semester Credit Hours Required

For the M.S. in Biology Research Option, 30 semester credit hours (SCH), including 6 SCH for thesis is required. For the M.S. in Biology Professional Paper Option, 30 SCH, including 3 SCH for professional paper is required. Coursework includes 27 SCH of courses chosen with an advisory committee to fit the needs of the student. All M.S. students must enroll in BIOL 5611 (Journal Club), and BIOL 5681 a minimum of two times.

### Research Option (30 semester credit hours)

A minimum of 30 semester credit hours is required. This degree plan is suggested for those who wish to pursue a Ph.D. in Molecular Biology or seek a position in the biotechnology or pharmaceutical industry. All students in the research track must complete either BIOL 6513 or BIOL 6334. Additional courses may be taken upon the advice of their research mentors. In the first year of studies, research track students must choose a research mentor and defend a research prospectus, which is a plan for the research project. Additional credits are earned by enrolling in elective courses or Biological Research (BIOL 5801, BIOL 5803, BIOL 5881, or BIOL 5883). The student should register for Thesis twice, BIOL 5983 while writing the prospectus and BIOL 5993 in the final semester of study. Students will write an M.S. thesis detailing their research project and defend it to their committee. The committee is composed of the research mentor and two other faculty members, typically in the department.

| Code                                           | Title                                                   | SCHs      |
|------------------------------------------------|---------------------------------------------------------|-----------|
| BIOL 6513                                      | Molecular Biology                                       | 3-4       |
| or BIOL 6334                                   | Advanced Cell Biology                                   |           |
| BIOL 5611                                      | Readings in Biology (Journal Club, must be taken twice) | 2         |
| BIOL 5681                                      | Seminar (must be taken twice)                           | 2         |
| Electives or research as approved by committee |                                                         | 17-16     |
| BIOL 5983                                      | Thesis (Prospectus)                                     | 3         |
| BIOL 5993                                      | Thesis (Written Master's Thesis and Oral Defense)       | 3         |
| <b>Total SCHs</b>                              |                                                         | <b>30</b> |

### Professional Paper (30 semester credit hours)

A minimum of 30 semester credit hours is required. This degree plan is suggested for those who wish to pursue a career in teaching, health sciences, business, or other non-research scientific fields. In the first year of studies, the student must choose a faculty advisor and develop a degree plan. All students must complete 27 SCH of coursework determined in consultation with the advisor (may include up to 6 SCH of Research in Biology). Electives may include chemistry, math, or education courses. Students write a professional paper and defend it to their committee. The committee is composed of the research mentor and two other faculty members, typically in the department.

| Code                                   | Title                                                   | SCHs      |
|----------------------------------------|---------------------------------------------------------|-----------|
| BIOL 6513                              | Molecular Biology                                       | 3-4       |
| or BIOL 6334                           | Advanced Cell Biology                                   |           |
| BIOL 5611                              | Readings in Biology (Journal Club, must be taken twice) | 2         |
| BIOL 5681                              | Seminar (must be taken twice)                           | 2         |
| Electives as approved by the committee |                                                         | 20-19     |
| BIOL 5973                              | Professional Paper (Written Paper and Oral Defense)     | 3         |
| <b>Total SCHs</b>                      |                                                         | <b>30</b> |

### Final Examination

Oral defense of the thesis or professional paper; may be retaken once upon approval of the committee.