

M.S. in Biology

Curriculum-Course and Credit Requirements

The program requires successful completion of a minimum of 30 credits of graduate-level work. These must include at least one 3-credit course in each of four of the following five core areas:

1. cell biology/biochemistry,
2. molecular biology,
3. computational biology,
4. ecology/evolution,
5. plant biology.

A partial list of courses offerings in each of these areas is appended. When nearing completion of, the minimum 30 required credits for the MS, Rutgers students must submit and Application for Admission to Candidacy for the Degree of Master of Science to the Graduate Program Director listing courses complete (totaling 30 credits) and offered toward the degree. NJIT students must complete an application for graduation and submit it to the Graduate Program Director for signature.

Curriculum-Thesis Requirements

Students can fulfill the written thesis requirement either by conducting laboratory or library research. Important to successful completion of the thesis requirement is early identification of a thesis advisor such that proper planning is in place to complete research requirements in a timely and effective manner. The basic requirement and process for these two thesis pathways is laboratory or field research thesis option; or bibliographic thesis option.

Laboratory or Field Research Thesis Option

Students selecting the experimentally-based **research thesis option** must successfully complete a minimum of 24 credits of course work and 6 credits in research (R120 701 Research In Biology, R120 702 Research In Biology for RU-N students, BIOL 700 Master's Project, BIOL 701 Master's Thesis for NJIT students) with a graduate faculty of the department. Under the guidance of this faculty member the student will perform original research. The thesis resulting from this research is expected to be presented as an hypothesis-driven scholarly work, with conclusions clearly derived from the experimental research and published background information. Students will write a scholarly thesis demonstrating the ability to write clearly and scientifically and based on experimental laboratory and/or field project research.

Upon completion of the written thesis, the student will defend the thesis publicly on the topic of their research, followed by a Q&A session with the examination committee. The thesis committee must be approved by the Graduate Program Director and will consist of the primary advisor and at least one other faculty reader who are full members of the Graduate Faculty. If a research plan requires the expertise of a non-graduate faculty advisor the committee will consist of three members-two from the graduate faculty and the advisor. Format and style of the final document must be in accordance with the guidelines set by an available at the office of graduate studies of the respective institutions.

Bibliographic Thesis Option

Students selecting the bibliographic-based **research thesis option** must successfully complete a minimum of 27 credits of coursework and 3 credits of Independent Study (BIOL 725 Independent Study for NJIT students, R120 844 Research Internship for Rutgers students) with a graduate faculty member of the department. Under the guidance of this faculty member, the student will write a scholarly review of the literature on a scientific topic of interest. The thesis resulting from this research is expected to be a scholarly work, with conclusions clearly derived from the published information referred to by the author. This thesis should demonstrate the ability of the student to write scientifically, bringing together facts interpretations relevant to that topic, in a clear, scholarly manner. Upon completion of the written thesis, the student will defend it publicly, followed by a Q&A session with the examination committee. The thesis committee must be approved by the Graduate Program Director and will consist of the primary advisor and at least one other faculty reader who are full members of the Graduate Faculty. If a research plan requires the expertise of a non-graduate faculty advisor the committee will consist of three members-two from the graduate faculty and the advisor. Format and style of the final document must be in accordance with the guidelines set by and available at the office of the graduate studies of the respective institutions.

Additional Curriculum Options

RU-N students

- After completing 12 graduate credits in the program, a student may solicit the Graduate Program Director to transfer up to 9 relevant graduate credits from another institution toward the 30 credits need for MS.
- No undergraduate credits are allowed for credit towards the MS degree.

NJIT students

- *Credits already taken:* Up to nine (9) credits may be transferred for credit toward the 30 credits need for the MS provided that they were taken at an accredited college or university in the United States or Canada, were not used in fulfillment of a previous degree awarded, earned a final grade of 3.0 or above on a scale whose maximum is 4.0, were earned in graduate level course(s) for which full academic credit was awarded, were in units of

at least three (3) credits and were not earned more than seven years ago. Credits earned in quarter system will be converted to equivalent semester credits.

- *Credits Not Yet Taken:* Up to nine (9) credits may be transferred for credit provided that they are taken at an accredited college or university in the United States or Canada, earn a final grade of 3.0 or above on a scale whose maximum is 4.0, are in graduate level course(s) for which full academic credit is awarded, and are in units of at least three (3) credits. Credits earned in quarter systems will be converted to equivalent semester credits. Prior approval required.

Part-Time Students

Part-time students are expected to fulfill exactly the same requirements as full-time students