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## Degree Requirements in the Graduate Program

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In the Master of Science program students are expected to complete thirty credits of course work. Up to 8 credits may be obtained in advanced undergraduate courses (300-400 level) taken at Rutgers. Graduate courses completed at other institutions may be accepted for credit at the university. Students are allowed to transfer one-third of the credits required for their degree into the Graduate School-Camden. A maximum of 10 graduate credits (with grades of B or better) may be transferred into the Masters Program in Biology from other institutions.

Six credits (as Research in Biology; 120: 701, 702) are awarded under **Plan A** for a thesis based on investigation of a research problem. Of the remaining twenty-four credits, a minimum of sixteen are required in graduate-level (500-600) courses, only 3 of which may be in Individual Studies in Biology (120:619, 620). Students enrolled under Plan A are encouraged, though not required, to report on their research at meetings of professional biologists and to publish their results in research journals.

**Plan B** does not include a thesis but requires the completion of a minimum of thirty credits in graduate-level courses and an essay on some problem in biology of current research interest. No more than 6 credits of Individual Studies in Biology (120:619,620) may be counted toward the degree. Guided by his/her departmental advisor, the student will have the opportunity to develop a concentration of twelve or more credits in either cell biology, ecology, or neuroscience, plant and cell physiology.

In both degree programs there is a final comprehensive examination, normally taken during the term that will complete the student's course of study, which will cover the general field of biology but, when appropriate, will emphasize the student's area of concentration, and will involve a thesis defense for students in Plan A.

Students are normally expected to maintain a grade point average of 3.0, or better, in their course work. No more than 6 credits bearing the grade of C or C+ may be applied towards the Master's degree. Students earning 9 credits (or three courses) or more with the grade of C+ or below will be dismissed.

Any exceptions to Program requirements, e.g., waiver of preconditions for admission, must be approved by the graduate faculty in biology.

Students pursuing the MS degree are expected to satisfy the requirements for the degree as specified by the Office of Graduate Studies in Camden.

The following regulations apply to students awarded **Teaching Assistantships** by the Department of Biology:

1. Students awarded a Teaching Assistantship are expected to complete a thesis (**Plan A**).
2. No reappointment to a second year as Teaching Assistant will be made unless the student's thesis committee ascertains that satisfactory progress toward completion of the thesis has been achieved.
3. Any student holding a Teaching Assistantship who desires to change from Plan A to Plan B must, upon the recommendation of the student's thesis committee, receive the permission of the Graduate Faculty in Biology.

### **Final Comprehensive Examination and Degree Candidacy**

1. A final comprehensive examination will be taken by all students enrolled in the MS program.
2. The examination will be conducted by the student's committee. This committee will be composed of at least three members who are employees of Rutgers University and shall include the student's advisor who normally will act as chair. Additional members may be added to the committee as appropriate. Responsibility for the appointment of the committee members and committee chair lies with the Program Director in consultation with the student and the student's advisor.
3. An application for admission to candidacy must be filed within 30 days of the start of the term in which the final examination is to be taken. Application forms are available from the Program Director.
4. The nature of examination:
  - o **Plan A (a student's program includes a thesis)**: The student must defend the thesis and by written or oral examination also demonstrate an adequate knowledge of general biology.
  - o **Plan B (a student's program does not include a thesis)**: The examination may be written and/or oral. The student, in consultation with the committee, will choose the appropriate option. This decision is to be made early in the term in which the examination is to be taken.
  - o **Written examination**:
    1. to be administered by the chair of the student's committee;
    2. will be two to four hours in length; and,
    3. will consist of questions from the student's committee covering general biology and the essay topic.
  - o **Oral examination**:
    1. to be conducted by the student's committee;
    2. will be two to three hours in length; and,
    3. will consist of questions from the student's committee covering general biology and the essay topic.
5. The examination must be completed in accordance with the schedule established by the Office of Graduate Studies in Camden. In the event of an unfavorable decision, the examination may be repeated twice.

### **Plan B: The Essay Requirement**

1. In partial fulfillment of the requirements for the degree, all Plan B students are required to submit a critical analysis of a topic in biology of current research interest.
2. The analysis may be written either as part of a regular course or seminar or as a special paper for this purpose. The final draft of the paper must be submitted no later than two weeks prior to the final comprehensive examination and must be approved by the entire committee before the examination can be conducted. The student should consult the chair of the committee for details early in the term in which the final comprehensive examination is to be taken.

### **Plan A: The Thesis Requirement**

1. **Decision to Become Involved**:
  1. After consultation with the program director, the graduate student shall contact the Rutgers-Camden faculty member under whose direction he/she would like to work and request that faculty member to serve as the thesis advisor. This faculty member must be a Member or an Associate Member of the Graduate Program in Biology. Furthermore, for students receiving financial support from Rutgers University, the faculty member must be an employee of Rutgers University.
  2. If a student wishes to pursue a research project at an off-campus location, he/she shall propose this arrangement to the executive committee for approval who shall inform the program director of its decision.
2. **Thesis Committee**:
  1. The student's advisor, in consultation with the student and the program director, shall then assemble a committee with at least three members.
  2. Members ordinarily will be chosen from the graduate faculty of Rutgers University, three of which must be Rutgers University employees.
  3. In certain instances an individual who is not on the graduate faculty of the University may also be appointed with the approval of the program director to serve on the thesis committee.
  4. Arrangements involving a non-Rutgers University employee directing a student's research must be approved by the executive committee and program director.
  5. In all cases, the chair of the thesis committee shall be a member of the Graduate Program in Biology at Camden and a Rutgers University employee.
3. **General Committee Responsibilities**:
  1. To assist in the planning of the student's academic program.
  2. To serve as advisors for the thesis project.
  3. To judge the final acceptability of the thesis.
  4. To conduct the student's final examination.
4. **Initiation and Conduct of the Thesis Project**:
  - o **Outline**

The chair of the thesis committee shall arrange for the student to present to the thesis committee an outline of the proposed work.

1. The outline shall be in written form with one copy available to each committee member.
  2. A meeting shall be arranged between the student and his/her committee wherein the contents of the outline will be discussed.
  3. The purpose of such an outline and meeting is to demonstrate that the student has appropriate knowledge of the research literature, that the project is feasible, and that the student has an appropriate, clearly defined research objective.
  4. Normally, the research project as outlined must receive full committee approval before the student may register for research credits (up to a total of 6 credits) towards the degree.
  5. As the research work progresses, deviation from the original proposal is possible with committee approval.
- **Progress Reports**
    1. By the end of each semester after the approval of the research proposal, the student shall prepare a short (1 or 2 page) written progress report for the research director. The report shall then be circulated to the other committee members for review.
    2. The report shall become a part of the student's file in the Department of Biology.
  - **Completed Thesis**
    1. The thesis must be approved by the director of the student's research and then accepted by the other committee members.
    2. It shall be the student's responsibility to assure that the thesis fulfills all of the requirements of the Office of Graduate Studies in Camden.



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