

PROGRAM GUIDELINES FOR STUDENT PROGRESSION

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1. Overview

The Ph.D. Program of the Federated Department of Biological Sciences at Rutgers University-Newark (RU-N) and the New Jersey Institute of Technology (NJIT) provides students with opportunities to develop the knowledge and problem-solving skills needed to pursue a myriad of careers in biomedical, ecological, and evolutionary sciences. The program is designed to foster understanding of foundational and advanced concepts in the biological sciences, and the analytical skills necessary to examine evidence critically. The program offers training in three tracks, reflecting the research strengths of the department:

- **Cell and Molecular Biology**
- **Ecology and Evolution**
- **Neurobiology**

Because of the complexity of biological sciences, training necessarily includes interdisciplinary approaches incorporated from other physical sciences and mathematics.

Typical student progression through the program starts with coursework, first semester mentoring and lab rotations. Laboratory rotations will help to identify a Thesis Advisor and are typically completed by the beginning of the second year. Subsequently, the student will commence dissertation research while still completing course work. Course work typically is completed at the end of the second year. In the fourth semester, the student will prepare a preliminary research proposal as part of the Qualifying Exam, the oral part of which will be held in the summer. Within a year of passing the Qualifying Exam, the student will assemble a Dissertation Committee and defend the actual research proposal, the Dissertation Prospectus. When the dissertation research is completed, the student will submit a written thesis and conduct a public Dissertation Defense.

2. Academic Advising

2.1. Pre-qualifying Students

Prior to passing the Qualifying Exam, students receive advice on course work, rotations, identifying a Dissertation Advisor, and all other academic matters from the **Standards Committee**, in coordination with the Program Directors, Faculty Mentors, and prospective Dissertation Advisors. The Standards Committee meets with students minimally once a

semester. Meeting summaries and course progression plan are recorded in the “**Standards Committee Continuing Report Form**” shared with each student. All student questions about academic matters should be directed to the Standards Committee.

2.2. **Post-qualifying Students**

Post-qualifying students receive advice from their Dissertation Advisor and the Program Directors prior to forming a Dissertation Committee and passing their Thesis Prospectus. Afterwards, the Dissertation Committee is the main advising entity. All student questions beyond individual progress in their thesis work should be directed to the Program Directors.

3. **Course and Research Credit Requirements**

3.1. **Requirements**

Students must complete a total of **36 course credits** (usually 12 courses, 3 credits each), typically during the first two years. Course work may only be postponed past the first two years with permission from the Program Directors or the Standards Committee. Examples for good justification are that a specific elective course deemed very important for a student was not available, or that student had to take remedial or language courses which did not count towards the course credit requirement. Courses include 3 Program Core Courses (9 credits), 2 Laboratory Rotations (6 credits), either 2 or 3 Track Core Courses, depending on the track (6 or 9 credits), and 4 or 5 Electives, depending on the track (12 or 15 credits). Students entering with relevant graduate level course credits from a different program or institution will be considered for transfer of credits, reduction of credit requirements, or may be allowed to replace required courses. The Program Directors, in consultation with the Standards Committee and faculty members teaching specific courses, decide about reduction or changes of the course requirements on the basis of the syllabi of completed courses. It is the student’s responsibility to provide those syllabi and any other necessary documentation.

Before the Dissertation Defense, **24 research credits** must be completed, the majority of which are taken as a post-qualifying student.

3.2. **Program Core Courses**

- *Effective College Teaching* (26:120:560)
- *Critical Thinking for Life Sciences* (48:120:630; BIOL 630)
- *Approaches in Quantitative Analysis for the Life Sciences* (48:120:615; MATH 615)*

*Equivalent course may be substituted if approved

3.3. **Track Core Courses**

Program Track “Cell and Molecular Biology”:

- *Cell, Molecular, and Developmental Biology* (26:120:524)*
- *Molecular Biology of Eukaryotes* (26:120:515)
- *Biochemistry* (26:160:581)

*Depending on background, students may first have to complete *Cell Biology Methods* (26:120:512) as a prerequisite.

Program Track “Neurobiology”:

- *Cellular Neurophysiology* (BIOL 640)
- *Systems Neuroscience* (BIOL 641)
- *Analytical and Computational Neuroscience* (MATH 635 or BIOL 635)*

*Appropriate course may be substituted for students with stronger interests in *Cellular and Molecular Neuroscience*, or *Neuroethology and Behavior*.

Program Track “Ecology and Evolution”

- *Ecology* (26:120:523)
- *Evolution* (48:120:622; BIOL 622)

3.4. **Electives**

All students have the opportunity to add to their knowledge base by properly selecting Elective Courses (12 credits for students in the Cell and Molecular Biology or Neurobiology tracks, 15 for students in the Ecology and Evolution track).

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Elective Courses may be taken from offerings within the program (including Core Courses of other tracks), and in other graduate programs at NJIT and Rutgers (including RU Biomedical and Health Science and RU New Brunswick), for example in Environmental Sciences, Behavioral and Neural Sciences, Biomedical Engineering, Mathematical Sciences, and Computer Sciences. Prior to enrolling in courses offered outside of the Graduate Program in Biological Sciences, students must receive permission from the Standards Committee if they are pre-qualifiers, or from the Program Directors if they are post-qualifiers. It is the student's responsibility to obtain the necessary paperwork to be signed by the Standards Committee or Program Directors (e.g., the Graduate Transfer Credit Form).

3.5. Grade Requirements

Students are expected to successfully complete all of the Core and Elective credits taken within the Graduate Program. Course work provides the formal foundation upon which a successful research project and Dissertation Defense is built. To remain in good standing, students must maintain a GPA of 3.0 or better for all courses taken as part of the graduate course of study. Courses cannot be repeated in order to improve on poor performance. Furthermore, a student can receive grades of **C** or **C+** in a maximum of two courses, only one of which may be in the Program Core or Track Core courses. Receipt of a grade of **F** in any course – Core or Elective – will under normal circumstances result in dismissal from the program.

3.6. Research Credits

Students have to complete a minimum of 24 research credits. It should be noted that the completion of this minimum requirement does not constitute the completion of the thesis work. The Dissertation Committee decides when the student's research projects have progressed sufficiently to earn the degree (see 10.1.).

4. Biology Colloquium

The Biology Colloquium is held weekly during the semester and consists of research presentations by invited speakers, students, and faculty, as well as professional development/career advice events and organizational meetings. All students, including post-qualifying students, are required to attend while being matriculated in the program. Failure to meet this obligation (missing three or more colloquia) can result in loss of financial support and suspension from the program. The Biology Colloquium is organized with significant contribution by students, elected by the student body for this purpose.

5. Mentoring Semester

Every incoming student will be assigned to a "Mentor Lab" for their first semester in the program. During this time, each student is required to actively participate in lab meetings, journal clubs, and other general lab activities. Additionally, the student must participate in some minimal form of research work as determined by agreement with the Faculty Mentor. A short description of the plan shall be submitted to the Standards Committee by the student, along with the "**Pre-qual Student Project Prospectus**" form, no later than two weeks after the beginning of the semester. After completion of the semester, the student shall write a brief report on the semester activities and submit it to both the Faculty Mentor and the Standards Committee. The Faculty Mentor shall evaluate the student's performance and complete the "**Pre-qual Student Evaluation**" form. Mentoring Semester activities do not accrue course credits. A student who has worked with the likely future Dissertation Advisor before (e.g., as a research technician or MS student) may apply to skip the Mentoring Semester and start a Laboratory Rotation in the first semester. Permission will be granted by the Standards Committee and the Graduate Directors. Under some circumstances, a student may apply to skip a rotation instead (see section 6).

6. Laboratory Rotations

Laboratory rotations (RU-N: *Advanced Problems in Biology* 120:509/510; NJIT: *Independent Study* BIOL 725/726) provide opportunities for laboratory research and independent study with Graduate Faculty members. Students are required to complete two rotations, the first one typically in the Spring of the first year, and the second one in the Summer (which will count for registration the following Fall semester). The main objective of the lab rotations is to identify a lab in which to complete dissertation work. Additional anticipated outcomes of the rotations include the development of laboratory and/or computational research skills, development of analytical and critical thinking skills, and appreciation of a specific research field. It is expected that the Rotation Advisor is potentially willing to become the Dissertation Advisor and can provide space and funding, unless this decision has been made prior to the rotation. It is strongly recommended that the first rotation will be done in the laboratory the student favors for dissertation work. For students who have identified a

“home” after the first rotation, the second one can be used to broaden their conceptual perspective and/or technical skills.

Rotation laboratories are selected in consultation with the Standards Committee, but it is up to the student to come to an agreement with a Rotation Advisor. The student and the Rotation Advisor have to agree on the scope of the project, and the student shall submit a short description of the planned rotation project to the Standards Committee, along with the **“Pre-qual Student Project Prospectus”** form, no later than two weeks before the beginning of the semester/summer. After completion of the rotation, the student shall write a project report and submit it to both the Rotation Advisor and the Standards Committee. The Rotation Advisor decides upon the format, content, and anticipated outcome. The Rotation Advisor shall evaluate the student’s performance and complete the **“Pre-qual Student Evaluation”** form.

Under extraordinary circumstances, the Standards Committee and Program Directors may approve a student request to conduct a third rotation that must be completed in the Fall semester of the second year in the program (see 7.1).

A student who has completed previous graduate research and presented it in writing (for example as part of an MS degree) may apply to skip one Laboratory Rotation. Permission will be granted by the Standards Committee and the Graduate Directors. A student may not skip both the Mentoring Semester and a Laboratory Rotation.

7. Selection of Dissertation Lab

7.1. Advisor Declaration

Following completion of the laboratory rotations, students must select a Graduate Faculty member who will serve as their Dissertation Advisor during the research phase of the doctoral program. This process is expected to be completed by the beginning of the second year in the program, at which time the student will commence developing a project and accumulating preliminary data for the dissertation. The program accommodates joint or interdisciplinary projects supervised by two or more faculty members. One faculty member serves as the Primary Advisor and provides the work space for the student, others can serve as Co-Advisors.

Primary Advisors, Co-Advisors, and students are expected to discuss the commitments laid out in the **“Graduate Student and Mentor Compact”** (See 7.2), and submit the Advisor Declaration forms (**“Dissertation Advisor Declaration-Student”** / **“Dissertation Advisor Declaration-Faculty”**). For the purpose of internal funding tracking, the responsibility and credit for a student can be split by any percentages that the Primary Advisor and Co-Advisor(s) agree on. Collaborating Graduate Faculty members who are involved in a student’s project (for example as potential co-authors on future publications), but do not take responsibility in training and supervising the student, do not have to report anything. However, the student and Primary Advisor should identify them to the Program Directors, along with other cases of potential conflicts of interest. NJIT students must also submit the **“Ph.D. Dissertation Advisor(s) Designation Form”** to the Office of Graduate Studies (available on the Graduate Studies website). The form requires signatures from the Advisor(s), the NJIT Department Chair, and the NJIT Program Director.

Finding a lab for dissertation work is a required milestone for a student in the program and a prerequisite for remaining in good standing. If a student cannot come to an agreement with either faculty member supervising the first two rotations, the Standards Committee and Program Directors will review the case and determine if the student can do a third rotation. Otherwise, failure to find a Dissertation Advisor results in the dismissal from the program.

7.2. Graduate Student and Mentor Compact

The program encourages a cooperative approach to graduate training. To this end, faculty and students have developed the **“Graduate Student and Mentor Compact”**, approved by the student Body (11/01/2016) and the Graduate Faculty (01/24/2017). The Compact lists practices intended to establish a productive relationship between student and advisor(s), as well as expectations that each partner may have for the conduct of that relationship. It is required that a student, Primary Dissertation Advisor, and (if applicable) Co-Advisor(s) discuss the various issues set forth in the Compact prior to completing the **“Dissertation Advisor Declaration”** forms.

8. Qualifying Exam

8.1. Purpose

Following the successful completion of all course requirements, rotations, and identification of the Dissertation Advisor, each student must pass a Qualifying Exam to remain in the program. After successful completion of the Qualifying Exam, the student becomes a Ph.D. candidate. The exam is typically held in June/July of the second year, unless the coursework was completed earlier. Under some circumstances, students may not have completed all course work by the end of the second year. As long as all core course requirements are fulfilled, they should usually still take the exam. Postponing the exam requires permission by the Program Directors. The exam will be administered by a Qualifying Exam Committee of three Graduate Faculty members appointed by the Program Directors. The Dissertation Advisor, Co-Advisor, and collaborators cannot serve on the committee.

The overall purpose of the Qualifying Exam is to assess the student's preparation and ability to embark on the highly challenging task of successfully completing an original, scholarly scientific investigation. With proper course preparation, lab mentoring, and completion of rotation projects, it is expected that the majority of students should pass the Qualifying Exam.

The Qualifying Exam consists of a written research proposal and an oral exam, both of which should allow the Qualifying Exam Committee to determine if the student has acquired the following qualifications:

- A proper understanding of modern concepts and principles in the broadly defined areas of study and research
- A substantial understanding of the biological, mathematical, and physical principles applicable to the submitted proposal
- The ability to define an original and testable hypothesis and the ability to address it with a reasonable experimental or theoretical approach
- The ability to critically evaluate and review published, peer-reviewed literature pertinent to the question being posed
- The ability to interpret outcomes of the proposed experiments and an understanding of the limitations of the proposed approach
- The ability to effectively communicate scientific content both orally and in writing

8.2. Written Proposal

While the student may write the proposal as an early version of the tentative dissertation project, there is no specific restriction on the subject of the Qualifying Exam proposal other than it must be the original work of the student. Preliminary data are not required. The proposal is the detailed description of a feasible research project, including an introduction describing background and significance, present state of knowledge ("state-of-the-art"), and research design and methods ("proposed work"). A template is available on the department website or from the Standards Committee ("Graduate Proposal Template"). A short proposal prospectus (1-2 pages) must be submitted to the Program Directors two months prior to the exam, typically by April 15. On the basis of this prospectus, the Program Directors assemble the Qualifying Exam Committee, and the committee members may offer general feedback on the scope of the project and suitability of the aims within two weeks, typically by May 1. The full proposal must be submitted to the Qualifying Exam Committee at least two weeks prior to the oral exam. The Qualifying Exam Committee will review the written proposal for clarity of presentation, scientific soundness, and understanding of the hypotheses being tested.

8.3. Oral Exam

For the oral exam, the student should prepare a 30-minute presentation that serves as a defense of the proposed project. The examiners will interrupt and invite the student to discuss details of the proposal. In addition, the student will be examined on broader concepts and detailed topics not directly related to the proposal, but covered during the course work the student has completed. How long the exam will take, and what portion of the time is spent on which topics is at the discretion of the committee.

8.4. Pass/Fail

If a student does not pass the written and/or oral component of the qualifying examination, the chance for a second attempt may be offered if the Qualifying Exam Committee identifies a clear path to remedying the prior shortcomings. This second attempt will typically take place four to six weeks after the initial exam date. Ultimate failure to pass either the written or the oral part of the Qualifying Exam will result in dismissal from the program. Students can appeal a dismissal from the program using the established procedures of the university that they are enrolled at. Documentation about these procedures is available at the RU-N Graduate School and the NJIT Graduate Office.

8.5. Reporting

The committee members will provide a detailed assessment of the student's performance, entered by the committee chair into the **"Qualifying Exam Report"** form that will be shared with the student and Dissertation Advisor for feedback purposes.

The student should bring a copy of the official university reporting form to the exam, depending on where they are matriculated. After successful completion, NJIT students must submit the **"Ph.D. Qualifying Examination Report Form"** to the Office of Graduate Studies (available on the Graduate Studies website). The form requires signatures from all Qualifying Exam Committee members, the NJIT Department Chair, and the NJIT Program Director. Students should collect the signature of the Program Director last, so a copy with all signatures present can be kept for the program records. After successful completion, RU-N Students must submit the **"Application for Admission to Candidacy for the Doctoral Degree"** to the RU-N Graduate School (available on the Graduate School website). The form requires signatures from all Qualifying Exam Committee members, and the RU-N Program Director. Students should collect the signature of the Program Director last, so a copy with all signatures present can be kept for the program records.

9. Dissertation Committee and Thesis Prospectus

Within 9 months of the completion of the Qualifying Exam, the student shall assemble a Dissertation Committee, under the guidance of the Dissertation Advisor. The Dissertation Committee is the primary advisory group responsible for supervision and guidance of the student during the research phase of the dissertation. The Dissertation Committee also serves as the examination committee for the Dissertation Defense. Within a year of the Qualifying Exam, the student shall present and defend the Thesis Prospectus (the dissertation research proposal) to the Dissertation Committee.

9.1. Committee Appointment

The Dissertation Committee will be composed of the student's Dissertation Advisor, additional members of the Biology Graduate Faculty (RU-N: minimally 2; NJIT: minimally 3), and at least one external member from outside the Rutgers-NJIT scholarly community. External members should have demonstrated research expertise in the general area of the prospective dissertation project.

Each committee should have at least two members who are not vested in the student's research, defined as having no expectation of being a co-author on the work completed for the degree. One of these committee members should be external, as defined above; the others can be internal.

The chair of the committee cannot be the Dissertation Advisor and is selected at the time of the initial meeting leading up to the Thesis Prospectus exam. External members are only required to partake in the Dissertation Defense, but are encouraged to attend regular committee meetings, if necessary via videoconferencing. To establish a Dissertation Committee, the student must submit the **"Dissertation Committee Appointment Report"** form for approval from the Graduate Program Directors. Students matriculated at NJIT are responsible for also completing the NJIT **"Ph.D. Dissertation Committee Appointment Report"** and submitting this form to the NJIT Office of Graduate Studies (available on the Graduate Studies website).

9.2. Committee Meetings

Beginning with the Thesis Prospectus and ending with the Dissertation Defense, the Dissertation Committee shall regularly meet with the student in about 6 month intervals to discuss research progress, experimental challenges, and potential changes to the original Thesis Prospectus. Meeting dates, recommendations, and outcomes shall be recorded by the committee chair on the **"Dissertation Committee Report"** form. The ultimate charge of the Dissertation Committee before the Dissertation Defense is to ensure that the student is making appropriate progress towards a timely and successful

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defense. Any major issues that indicate insufficient progress or the necessity to change approaches should be identified to the Program Directors via the reporting forms.

Typically, each committee meeting should include the following:

- A discussion of what the student has done since the last meeting (according to the plan recorded on the previous report form).
- A discussion of the plan of action for the time until the next meeting (to be specifically recorded on the report form).
- A discussion of the overall plans and timeline until completion. Special emphasis should be given to significant changes from the original Thesis Prospectus.
- A brief discussion among the committee about the student's performance, in the absence of the student.
- A brief discussion with the student about the interactions with the advisor(s), in the absence of the advisor(s), to ensure that there are no problems regarding mentorship. If there are, the committee chair shall not record those on the report form, but contact the Program Directors.

9.3. *Thesis Prospectus*

The written Thesis Prospectus should follow the same format as the Qualifying Exam (Graduate Proposal Template is available from the department website or the Program Directors). The Thesis Prospectus meeting will determine the student's ability to conceive, design, and conduct the proposed research project. It is a required milestone in the program, and approval by the Dissertation Committee should be viewed as a statement that the scope and originality of the proposal is sufficient to earn a Ph.D. degree upon successful completion. In the event a student does not successfully complete the Thesis Prospectus in a timely manner, the Program Directors will convene a meeting with the student and Dissertation Advisor to review the student's progress and to prepare a plan of action for completion of the prospectus requirement. Failure to comply with the above timelines and procedures can result in loss of departmental financial support and dismissal from the program.

After the Thesis Prospectus meeting, the Committee Chair shall record the outcome of the meeting in a "**Dissertation Committee Report**" form. NJIT students must also complete the "**Ph.D. Proposal Defense Report**" and submit it to the Office of Graduate Studies (available on the Graduate Studies website). RU-N student may not register for "Matriculation Continued" before completion of the Thesis Prospectus.

9.4. *Pass/Fail*

If a student does not pass the Thesis Prospectus defense, the chance for a second attempt may be offered if the Dissertation Committee identifies a clear path to remedying the prior shortcomings, laid out in detail in the reporting form to the Program Directors. Ultimate failure to pass will result in dismissal from the program. Students can appeal a dismissal from the program using the established procedures at the university that they are enrolled at. Documentation about these procedures is available at the RU-N Graduate School and the NJIT Graduate Office.

10. Dissertation Defense

10.1. *Minimum Requirements for Thesis Completion*

Following the completion of all course and research credits, it is the prerogative of the Dissertation Committee to determine when the student has made sufficient progress to write up the thesis and defend it. There is no requirement for the student to have published any of the work prior to the defense. However, the committee should be confident that the thesis work will yield at least one first author publication in a respected scientific journal, or the equivalent of such a publication. It should be noted that this is a minimum requirement, and satisfying it does not automatically mean that the committee deems the thesis work sufficient for the degree.

The thesis work should be completed within a reasonable time frame. If there are extenuating circumstances, they have to be clearly communicated to the Program Directors, in a timely manner. Unless well-justified exceptions are granted, the Rutgers Graduate School has a seven-year limit for full-time students for attaining a doctoral degree, and the NJIT Office of Graduate Studies allows no more than six years of registration for doctoral dissertation.

10.2. Final Progress Report

Approximately six months prior to the Dissertation Defense, the Dissertation Committee will convene a meeting with the Ph.D. candidate for a final progress report to the committee. The meeting should be attended by all members of the Dissertation Committee (internal and external), at which time the Committee will evaluate if sufficient progress has been made to warrant final preparation of a thesis and to establish an approximate timetable for the thesis public presentation and private defense. The committee chair shall report the outcome of this meeting on the **“Dissertation Committee Report”** form.

10.3. Thesis Submission and Formatting

It is the student’s responsibility to consult with the appropriate university offices (RU-N: Graduate School; NJIT: Office of Graduate Studies) well in advance of the anticipated completion date regarding submission deadlines for the Diploma Application, submission and formatting requirements for the Dissertation, payment of the microfilming fee, and other matters.

The completed dissertation must be submitted to all members of the Dissertation Committee at least one month prior to the scheduled Dissertation Defense. If this deadline is not met, any of the Dissertation Committee members can demand that the Dissertation Defense be postponed.

10.4. Presentation and Oral Exam

The Dissertation presentation must be advertised in advance, with a minimum of 10 days’ notice, and open to anyone wishing to attend. Announcements should be distributed by email to the whole Federated Department (via the department administrators). RU-N students must also send an invitation to the Dean of the RU-N Graduate School. NJIT students must use the NJIT **“MS Thesis and PhD Dissertation Defense Announcements”** webportal (available through the Graduate Office website) for approval and to announce their defense, and also send an invitation to the Associate Dean for Graduate Education and Research at the College of Science and Liberal Arts. The format should follow a typical research presentation, i.e. a 45 min to 1 h talk followed by discussion and questions from the audience. The talk does not have to cover all chapters of the written thesis. The Dissertation Committee can opt not to take part in the discussion and reserve questions for the oral examination.

The public presentation is followed by a non-public oral examination conducted by the Dissertation Committee. There is no fixed format or time limit for this examination. The Committee will discuss the work and interpretations with the student. The aim is to determine if the student’s work withstands a detailed critical review and if the student has the appropriate expertise to defend the thesis and the conclusions therein.

10.5. Reporting, Pass/Fail

Upon successful Dissertation Defense, RU-N matriculated students must present the **“Dissertation Defense Report”** form (available on the Graduate School website) to the chair of the Dissertation Committee to collect all necessary signatures. Students matriculated at NJIT are required to file the **“Ph.D. Final Dissertation Defense Report”** form (available on the Graduate Studies website), which must be signed by all Dissertation Committee members, the Graduate Program Director and the Department Chairperson before returning the original to the NJIT Office of Graduate Studies. In the event that the student fails to successfully defend the dissertation, one additional Dissertation Defense may be attempted. Reasons for the failure will be provided on the **“Ph.D. Final Dissertation Defense Report”** (NJIT) or **“Dissertation Defense Report”** (RU-N). Failure on the second attempt will result in dismissal from the program. Appeals by the student should be directed through the Office of Graduate Studies (NJIT) or the Graduate School (RU-N).

11. Teaching

The program considers teaching experience an integral part of the academic training provided to the students. Therefore, all students are expected to assist in undergraduate teaching at some point during their progression through the program, independent of their funding source. Students awarded explicit teaching assistantships generally are given teaching assignments each Fall and Spring semester. Students who wish to supplement their stipends can also apply for Summer semester teaching assignments. Failure to perform adequately as a teaching assistant will result in revocation of the assistantship. Students awarded other departmental, University, or external assistantships or fellowships are expected to complete a minimum of two semesters of teaching, for a total of six to nine contact hours before they graduate. Exempt are only students whose funding award explicitly prohibits them from teaching. The program shall make every effort to

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give priority to the students' own course curriculum over their specific teaching assignments. Therefore, scheduling conflicts between course work and teaching should be resolved in favor of the course work.

12. Effort Expectations

Full-time students awarded assistantships or fellowships are expected to dedicate 100% of their professional efforts to their course work, research, and teaching activities. Additional professional activities have to be well-justified and require approval by the academic advisors (Thesis Advisor and Dissertation or Standards Committee) and the Program Directors. Examples for such activities are limited part-time outside employment to cover legitimate financial needs, or the pursuit of professional development opportunities that are outside of the scope of the program but complementary to the student's career plans.

13. Exceptions to Regulations

Exceptions to the regulations described in this document may be granted by the Program Directors, after consultation with the appropriate faculty members and/or committees. Applications for performing research off-campus must include a detailed proposal for the research and the special facilities required for the project.

Although the Program has three tracks and most students are likely to choose one track in which to concentrate, the program recognizes that some students may wish to establish an individualized course of study intermediate between the tracks. The individualized course of study must be developed in consultation with the student's major advisor and the Standards Committee with approval from the Program Directors.

14. Academic Integrity and Scholarly Ethics

All students, faculty and staff associated with the Ph.D. Program in Biology are expected to adhere to the highest standards of academic integrity and scholarly ethics. As a guide to academic integrity and scholarly ethics please refer to the following sites:

[Rutgers Academic Integrity](#)

[Rutgers Ethics and Compliance](#)

[NJIT Student Conduct](#)

[NJIT Academic Integrity](#)

15. Typical Student Progression through the Program

Pre-qualifying students

Year 1, Fall Semester:

- Mentoring Semester, 3 courses

Year 1, Spring Semester:

- 2 classroom courses, first lab rotation.

Year 1, Summer:

- Second lab rotation

Year 2, Fall Semester:

- Advisor declaration
- Begin dissertation research
- 2 classroom courses, credit for summer rotation.

Year 2, Spring Semester:

- 3 courses. Preparation of Qualifying Exam Proposal.

Year 2, Summer:

- Qualifying Exam

Post-qualifying students

Year 3:

- Dissertation Research
- Assemble Dissertation Committee
- Thesis Prospectus

Year 4, 5, ... :

- Dissertation Research
- Dissertation Committee meetings every semester
- Dissertation Defense

16. Amendment History

Listed are only substantive changes and additions, and no minor language edits.

16.1. *Original approval – 05/11/2018*

16.2. *Amendments 10/03/2018*

- Correction of Program Name to “Biology” instead of “Biological Sciences”.
- 3.3.: Added BIOL 635 to Program Track Neurobiology. It is the same course as MATH 635, but has acquired a section run out of the Bio Department.
- 3.6.: Added entire new section, clarifying that completing 24 Research Credits is a minimum requirement and does not constitute completion of thesis work.
- 6.: Changed the deadline for submission of prospectus docs for rotations to 2 weeks before start of the rotation.
- 8.4. and 9.4: Added language to refer to the university procedures to appeal program dismissal due to failing Qualifying Exam or Thesis Prospectus.
- 9. And 9.2.: Moved section on Dissertation Committee meeting from 9. To 9.2, added suggestion for typical general agenda points for each meeting.
- 10.1.: Added entire new section on minimum requirements for thesis completion.
- 10.4.: Added updated Thesis Defense announcement procedures for NJIT students. Added clarification for the format of the Thesis Defense. Deleted the requirement for the Committee Chair to complete an internal Thesis Defense Report form.
- 10.5.: Moved the statement about time limits to complete the program from 10.5. to 10.1.
- 11.: Added a statement to clarify that the students’ own course curriculum has priority over teaching assignments in the case of scheduling conflicts.

16.3. *Amendments 5/1/2019*

- Added that fulfilling course requirements can be postponed past the end of the second year if well justified.
- Added “reduction of credit requirements” as an option for students who enter the program with relevant course work completed.
- Added new requirement for Advisor designation form for NJIT students.
- Added clarification that the Qualifying Exam should usually be completed after the end of the second year, even if the elective requirements are not fulfilled.
- Removed language to suggest written Qualifying Exam and Thesis Prospectus documents should follow NSF proposal format, and replaced it with reference to internally generated template.

16.4. *Amendment 5/31/2019*

- Changed the language pertaining to full-time student effort expectations, to underline that 100% effort is expected, but well-justified exceptions are allowed.