



SYRACUSE UNIVERSITY

# The College of Arts and Sciences

Department of Biology

## GRADUATE PROGRAM HANDBOOK

**SYRACUSE UNIVERSITY**

**Syracuse, New York**

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## GRADUATE PROGRAMS OF THE DEPARTMENT OF BIOLOGY

### I. INTRODUCTION

The Department of Biology offers two graduate degree programs: Master of Science (M.S.) and Doctor of Philosophy (Ph.D.). These programs are sufficiently flexible to permit training in diverse research areas and to allow for the natural evolution of new specializations or unusual combinations of current areas of research. Primary emphasis is placed on full-time, research-oriented graduate training.

### II. SUMMARY OF DEGREE REQUIREMENTS

**M.S.:** The M.S. degree requires 24 credits of formal coursework, to be selected in consultation with the Graduate Committee (GC) and the student's Research Committee, and six *additional* credits of thesis credits. At least one-half of all non-thesis credits included in the formal degree program must be at the 600-level or above. A thesis based on original research must be developed and successfully defended in accordance with the regulations of the Graduate School.

**Ph.D.:** Forty-eight credits are required for the doctoral degree in Biology. These are divided between formal courses and dissertation credits. A student entering the department with a B.A. or B.S. will complete a minimum of 24 credits of formal coursework. Students entering with a Master's degree will complete at least 18 credits of formal coursework. The remaining credits may be dissertation credits. At least 3/4 of the credits applied to a Ph.D. program, excluding dissertation credits, must be at or above the 600 level. The final distribution of formal coursework and dissertation credits will vary among students' programs and will be based on evaluations by their Research Committees and the Graduate Committee.

Courses numbered below 500 may not be included in graduate degree programs. Once students have completed the credits required for their program and fulfilled all requirements of the department and their research committee, they should register for zero credits of GRD 998, Degree in Progress, and file a "Certification of Full-Time Status" with the Graduate School each semester.

The Ph.D. program requires that students pass a qualifying examination supervised by their Research Committee (see Sect. IV), and successfully defend a dissertation based on a program of original research.

Doctoral candidates are required to submit at least one manuscript for publication to a peer-reviewed journal before their dissertation is submitted to the Graduate School for publication. No such requirement will be levied on Master's theses.

Doctoral candidates are required to have attended and presented (first author and presenter) their research findings at a regional, national or international scientific conference to qualify for successful completion of their degree. These presentations may be in either poster or oral presentation format. No such requirement will be levied on Master's students. Presentation at departmental functions, retreats, etc., does not qualify as meeting this requirement.

#### Financial Support

The maximum time in residence normally will not exceed five years for the Ph.D. or three years for the M.S. Student progress is reviewed annually and financial support is guaranteed for five years (Ph.D.) and three years (M.S.), contingent on satisfactory progress. To obtain the last year of funding (year 5 for the Ph.D., year 3 for the M.S.), an outline of the dissertation/thesis and a plan for completing the remaining work should be submitted by the student to the GC by April 15 of the preceding spring semester, along with the annual report. The outline of the dissertation/thesis and plan for completion should first be approved and signed by the research committee. Financial support beyond five or three years respectively is only granted in **exceptional** circumstances. This requires a petition from the student and her/his research committee and approval by the Graduate Committee. To be considered, petitions for continued support must be received by April 15 of the preceding spring semester, along with an updated outline of the dissertation/thesis and plan for completion. These must first be approved by the student's research committee.

### III. OUTLINE OF GRADUATE PROGRAMS

Course work requirements and the deadlines described below are summarized in *Appendix A*.

#### A. First Year:

Students should usually register for at least 9 credits per semester including dissertation credits (see appendix A). Students will be required to enroll for BIO 705 (1 credit) and other courses as advised by their Research Advisor or First-Year Advisor. Ph.D. students conducting rotations should also register for BIO 610 (2 credits) for each semester (Fall, Spring and, if applicable, Summer) in which they are rotating (see below). Remaining credits should be used for BIO 999 (Ph.D.) or BIO 997 (M.S.). The student's Research Advisor will review the background and educational objectives of the student with them and assist the student in choosing an appropriate selection of courses designed to meet their initial objectives. Students who are undertaking rotations during their first year will be appointed an interim First-Year Advisor by the GC.

#### **Laboratory Rotations Policy (Ph.D. students, revised 2015)**

Rotations are an invaluable opportunity for graduate students to gain a diversity of training in concepts and techniques, and to ensure an appropriate match between a student and dissertation lab.

- **Cell Biology, Developmental Biology, Genetics and Neuroscience Students:**

Ph.D. students who are interested in cell biology, developmental biology, genetics and neuroscience labs are **advised to do three rotations, with two required**. A student may forego a third rotation if the student has identified a home lab, and if both the student and the home lab Research Advisor agree that it is in the student's best interest to do so. Rotations will be chosen by the student in consultation with possible rotation Advisors, and the student will notify the GC of her/his choice of lab for each rotation by (at the latest) two weeks before the rotation starts.

Students are strongly encouraged to talk to faculty in whose labs they are interested in rotating as soon as they arrive on campus and to provisionally plan all three rotations and let their First-Year Advisor and the GC know their plan, before the first rotation starts. However, students are free to change their minds about where they do their second rotation (and third, if applicable) at any point in time up to two weeks before the rotation starts.

The first rotation should start no later than the last full week of September, and should be at least 13 weeks long. The second rotation starts on January 2nd and ends on March 31st. The third rotation (if applicable) starts on April 1st and finishes on June 30th. In exceptional circumstances, students may petition the GC to ask for permission to do a fourth rotation.

Students undertaking lab rotations should register for BIO 610 (*Graduate Research Laboratory*) for 2 credits for each semester in which they rotate. For the first rotation, BIO 610 will cover the Fall semester; the second rotation will be covered by the Spring semester; and the third rotation will be covered by Summer enrollment. If the GC gives permission for a student to undertake a fourth rotation, the student should register for BIO 610 for 0 credits in the Fall of their second year.

Students are expected to be conducting rotation research during Spring Break (in March). Thanksgiving Break consists of Thanksgiving Day and the following Friday.

- **Ecology and Evolution Students:**

Ph.D. students who wish to join ecology and evolution labs do not need to rotate but are welcome to do so. These rotations may be of a different duration and timing than those described above. In cases where a student's interests spans both cell and molecular biology and ecology or evolution, rotations are optional upon approval of the GC, but are highly encouraged, since success in an integrative Ph.D. program depends on diverse training. In such cases, the GC decision will be made following consultation with both the student and her/his interim Advisor.

#### B. Intermediate Years:

**Graduate Seminar Courses:** All graduate students are required to participate in Graduate Seminar courses, and to enroll each semester in BIO 705. At least two (2) Graduate Seminar courses are required for students in the M.S. program, and at least three (3) Graduate Seminar courses are required for students in the Ph.D. program. Students in the Ph.D. program must complete at least two (2) Graduate

Seminar courses for credit prior to passing their qualifying examination. Any Graduate Seminar courses taken after the qualifying exam would be taken for 0 credits. Ph.D. candidates not in residence (i.e., executing field research required for their dissertation) can be excused from participation in up to one (1) Graduate Seminar course upon certification to the Graduate Committee by the supervising professor. The Graduate Committee considers Graduate Seminar courses to be those that involve substantial student discussion of primary literature, and student presentations and/or grant writing.

Research Committee: M.S. and Ph.D. students who are not undertaking rotations must select a Research Advisor no later than the end of their first semester. Ph.D. students who are undertaking rotations must select a Research Advisor no later than one week after the end of their last rotation. For all students, a Research Committee, consisting of two (M.S.) or three (Ph.D.) additional faculty members, one of whom may be from another department or institution, must be constituted by October 1st of the second year (or by March 1st for Spring admits).

It is the responsibility of this committee to aid students in the development of a high quality program of graduate education and research and to assist them in the identification of opportunities that could enrich their training. The Research Committee shall:

- Develop an appropriate program of formal coursework and independent study with the student
- Advise the student on his or her research activities
- Administer the qualifying examination (Ph.D. students)
- Evaluate annually, on the basis of at least one formal meeting with the student, the student's progress toward completion of his or her degree
- Participate in the student's final defense

Students are strongly encouraged to work directly with their advisor and/or dissertation committee to resolve any difficulties they may experience. Students may change advisors or the composition of their dissertation committee during the course of their graduate studies after obtaining approval from their dissertation committee. To avoid conflicts with other Graduate Program or Department policies, the Graduate Committee is to be informed of all decisions to change advisors or dissertation committee composition.

Committee Meetings: Students will arrange to meet with the Research Committee within 30 days after its formation. At that time, the Research Committee will review the student's objectives and progress toward a graduate degree. A "Preliminary Program Outline" (Appendix B) is to be developed and filed by the student with the Graduate Program Administrator after the committee meeting. This program outline should reflect the student's interests and the committee's recommendations. It will serve as one basis for annual evaluation of the student's progress.

*Doctoral candidates and Qualifying Exam Preparation:* During the first committee meeting, the student and the committee will also identify *specific* areas of biology and topics that are especially relevant to the student's research interests. Students will be expected to gain proficiency in these areas through reading the literature, taking courses, participating in seminars, etc. These areas will be potential topics of in-depth questioning during the Qualifying Exam (see IV. Qualifying Exam, Format, Timing)

Students are urged to meet informally with their Research Committee on a regular basis. However, students **MUST** hold a formal meeting by the end of each Spring semester. One week prior to the meeting, the student will 1) notify the Graduate Program Administrator of meeting date and obtain Graduate Student Progress Report forms (Appendix F & G) and 2) provide committee members with these forms and a *concise summary* (three to five pages) of her/his accomplishments since the previous formal meeting. This "Summary of Progress" should include: courses taken and grades obtained, specific success and/or difficulty in research, awards and publications, a description of and the rationale for any changes in the direction of the student's research, and a brief projection of future research objectives. During the meeting, students should be prepared to elaborate on any aspect of the summary and to present data documenting the results of their research activities.

Following the meeting, the student's Research Advisor and each committee member shall complete the Graduate Student Progress Reports (Appendix F or G as appropriate) and return the completed and signed forms to the Graduate Program Administrator no later than one week after committee meeting.

The student shall also file a copy of the Summary of Progress with the Graduate Program Administrator for inclusion in his or her file by the same date. The Graduate Program Administrator shall distribute copies of each report to all committee members and the student.

Students in the Ph.D. program **must** take the qualifying examination (see Section IV) by the end of the fourth semester. If the student does not PASS in the first attempt, the examination **must** be passed no later than the end of the student's fifth semester in residence. Failure to do this is grounds for dismissal from the program. Preparation for the qualifying examination should include formal coursework, independent study, participation in journal clubs and seminars, and development of an active research program.

Annual Graduate Student Progress Report: In addition to holding a yearly committee meeting, which may occur at any time during the year that is agreeable to committee members, each graduate student must file an "Annual Graduate Student Progress Report" by April 15th of each academic year (see Appendix H). This report must be signed by student and the graduate advisor. The Graduate Committee uses this report to evaluate student progress during the academic year and to evaluate suitability for continued support in the upcoming academic year.

### **C. Final Year:**

Students in their final year are required to enroll in BIO 705 each semester.

**M.S.:** Students will prepare a thesis in the form specified by the Graduate School. The thesis must be read and approved by the Research Advisor and an additional member of the Research Committee. These individuals must *certify in writing* to the Graduate Program Administrator that the thesis is suitable for defense. Prior to authorization of a request to the Graduate School for a formal defense by the student, the Graduate Program Administrator will ascertain that this requirement has been fulfilled. The Defense Committee shall consist of four (4) members: the Research Committee and one additional individual, chosen by the members of the Research Committee. One person may be from another department or university.

The defense may be scheduled *no sooner* than three weeks after submission of the required forms to the Graduate School and two weeks after providing each member of the Defense Committee with a copy of the thesis. Final acceptance of the thesis requires an affirmative vote of three members of the Defense Committee. Prior to the defense, M.S. candidates will present a formal departmental seminar covering their research.

**Ph.D.:** Students anticipating completion of their degree requirements should obtain preliminary approval of their research efforts from their Research Committee. After a draft of the dissertation is completed, students must obtain certification from their advisor and two other members of their Research Committee that the dissertation is suitable for defense. Such certification is required *before* a request for defense can be filed with the Graduate School. Therefore, the readers should receive the draft no later than *one month* prior to the anticipated date of the defense and the Graduate Program Administrator must be notified, *in writing*, by the readers of their approval. The Graduate Program Administrator will then authorize a request for a formal defense.

Ph.D. candidates shall present a 50-minute departmental seminar on their research prior to the dissertation defense.

The Dissertation Defense Committee consists of six (6) members: all members of the student's Research Committee, one additional faculty member chosen by the Research Committee, and a chairperson (from another department). One individual in addition to the chairperson may be from another department or institution. Final acceptance of the dissertation requires an affirmative vote of four members of the Defense Committee.

#### IV. QUALIFYING EXAMINATION

**A. PURPOSE:** The goals of the Ph.D. qualifying exam are two-fold. (1) The first is to determine students' depth and breadth of knowledge in their specific fields of study and in related disciplines. (2) The second is to determine whether students will be capable of conducting independent research. This means that they must be able to demonstrate the ability to identify relevant questions, and to develop approaches, either empirical or theoretical, to address those questions. Moreover, students should be able to articulate their ideas clearly in both written and oral formats.

**B. NATURE:** The qualifying examination consists of two parts. These include an oral defense of a written research proposal, and an oral examination testing the student's depth of knowledge in relevant subdisciplines of biology that had previously been designated by the student's research committee. The order in which the two exam parts are taken is to be determined by the student's Research Committee.

#### **C. FORMAT:**

**(a) Timing:** During their third semester, students must meet with their research committee to identify *specific* areas of biology and topics that are especially relevant to their research interests. Students will be expected to demonstrate proficiency in these areas that will be potential topics of in-depth questioning during the qualifying exam.

At the end of the third semester, or early in the fourth semester, students should meet with their research committee to discuss their progress toward defining a research project and set up a date for the qualifying examination. At that time, the additional member of the examining committee will be designated (see below, IV.C.c.). Students must attempt the Ph.D. Qualifying Examination no later than the end of the fourth semester. Students failing to attempt the qualifying examination prior to this deadline will be terminated from the Ph.D. program; exemptions from this rule will only be granted under exceptional circumstances or conditions, and only with the *prior* approval of both the student's research committee and the GC. Students aiming to undertake fieldwork after they take the qualifying exam must make sure that they leave enough time to potentially retake the qualifying exam, if necessary.

**(b) Objectives:** The department views each of the following to be an important criterion for Ph.D. candidacy. Students qualified for candidacy should:

- be able to identify valid scientific problems within their general field, and to understand how the solution of such problems would impinge on a larger scientific endeavor.
- be able to design individual experiments and to organize a series of experiments into a feasible research program that could contribute to the solution of a selected problem.
- have a reasonable understanding of the theory, capabilities, and limitations of those techniques they propose to use.
- be able to express and defend their ideas clearly and concisely, in both written and oral formats.

**(c) Examining Committee:** One member of the research committee should be designated as the chairperson of the examining committee, which will be composed of the student's research committee and an additional individual chosen by the committee. One member of the committee, or exceptionally two, may be a qualified academician from outside the department. The student's advisor participates in both parts of the exam, although the advisor does not vote on the outcome.

**(d) The Proposal:** The topic of the written proposal will be the student's own dissertation research project. Because this proposal is based on the student's research project, it is natural that many aspects of the proposed plan might be discussed with the advisor (and others); however, the written proposal *must be prepared independently and represent the student's own work*. For example, complete or partial drafts of the written proposal should not be given to others for comments or suggestions. Students have the option of writing the proposal in the style of either: 1) an NSF Doctoral Dissertation Improvement Grant (DDIG); or 2) an NIH F31 (National Research Service Award for Individual Predoctoral Fellows). **For those choosing the NSF style**, the main proposal should be no longer than 8 single-spaced pages,

including all text, figures and tables. The reference list is not included in this page limit. The proposal should include a concise statement of the specific aims of the study, a brief survey of the pertinent literature, and a detailed experimental section. **For those choosing the NIH style**, the first page is only to include specific aims (goals of the proposed research and a summary of expected outcomes), and pages 2-7 (max length of entire proposal is 7 pages) describe the research strategy, including project significance and experimental approach. The reference list is not included in this page limit. A copy of the proposal must be presented to each committee member no later than one week before the scheduled time of the oral examination.

**(e) Oral Defense of Proposal:** It is to be understood by both the student and the examining committee that the proposal *as submitted is the document which the student will defend*. If the proposal is deemed to be indefensible by a majority of the committee, this will constitute failure of this part of the examination.

The student should prepare a fifteen to twenty minute presentation summarizing the proposal. This presentation should be followed by questions that permit the student to demonstrate those qualities that are expected of a Ph.D. candidate, emphasizing the criteria listed in Sect. IV.C.b., above. Such questions may be directed toward conceptual or experimental details, the potential significance of the problem under consideration, or areas tangential to the proposal relating to current concepts and knowledge in the student's general field of interest (e.g., see Sect. IV.C.a., above).

**(f) Oral Examination:** The questioning will be focused on the areas of biology and topics that were identified during the previous committee meeting, described above, Section IV.C.a. This portion of the exam should not exceed two hours.

**(g) Evaluation:** When the exam is completed, the student will be excused from the room and the committee shall render a verdict on the student's suitability for candidacy.

Although the student's advisor participates in both parts of the examination and the subsequent discussions, he or she does not vote on the outcome. The remaining four members of the committee make the final decision, with a minimum of three affirmative votes required to pass. The examining committee shall vote on three possible outcomes: 1) PASS, the student passes and advances to Ph.D. candidacy; 2) FAIL, the student is terminated from the Ph.D. program and, if recommended by the research committee and approved by the GC, may switch to the M.S. degree program; 3) CONDITIONAL PASS. In case 2), transfer to the Master's is one way and may not be switched back to the Ph.D. In case 3), *the committee will mandate requirements designed to remedy deficiencies observed during the qualifying examination*. These requirements could include retaking the exam and/or be in the form of a re-written proposal, additional formal coursework, active participation in journal clubs, written reports, etc. The chairperson of the examining committee will complete and submit Appendix C to the Graduate Program Administrator. Upon receipt, the Graduate Program Administrator will forward the appropriate information to the GC and to the Graduate School certifying that the student has achieved the status of a formal candidate for the Ph.D. degree in Biology. This process **must** be complete by the end of the fifth semester or the student will be terminated from the program.



## V. DEPARTMENTAL POLICIES GOVERNING GRADUATE PROGRAMS

**A. Administration:** The GC is responsible for the overall administration of the Graduate Programs of the Department of Biology. This committee and its chairperson(s) are appointed by, and serve at the pleasure of, the Department Chairperson, who may also be a member. The committee is composed of 5-6 faculty members and 1-2 senior graduate students. The latter are chosen by the Biology Graduate Student Organization from among the students who have passed their qualifying examination. The committee's responsibilities include:

- reviewing applications and admitting students to the program
- providing the faculty with information on new graduate students
- awarding financial aid under the control of the department
- making recommendations for fellowship awards
- monitoring students' progress toward degree completion
- periodically reviewing the graduate program and, in coordination with the curriculum committee, the graduate curriculum

**B. Admission Requirements:** All applications are reviewed by the GC, which formally admits students to a M.S. or Ph.D. program, and distributes financial aid. Preference will be given to highly qualified students applying to the Ph.D. program. Applications must include complete transcripts, at least three letters of recommendation, and usually will include Graduate Record Examination scores. Foreign applicants whose native language is not English must provide evidence of competency in English in the form of TOEFL or ILETS scores.

Students applying to the Department should have at least a minimal background in both physical and biological sciences, including the following: 2 years of biology, 1 year of introductory chemistry, 1 year of organic chemistry with a laboratory, 1 year of physics, and 1 year of college level calculus. Admission will not necessarily be denied to applicants lacking some of these requirements, but any student entering with deficiencies will be required to make up equivalent courses. Students interested in specific fields may be required to take other undergraduate courses deemed essential by their Research Committee. Credits in courses numbered below 500 may not be included in the student's formal graduate program.

Full time study is usually required for research degrees. No exceptions are permitted for either Ph.D. candidates or M.S. students unless approved by the GC. In the case of an employee of the department, a letter from the employee's present supervisor supporting the request for matriculated status must accompany the application.

Students admitted to one degree program must obtain approval of the GC to transfer to the other program. The GC requires letters from the student, student's advisor and two other faculty members that can evaluate the student's performance. The letter from the student should be a concise yet informative description that includes the following information:

- (1) justification for desiring to change degree programs,
- (2) description of your accomplishments thus far in our program,
- (3) description of your research goals should you be admitted into the Master's or Doctoral Program, and
- (4) estimated date for completing the requirements for a Master's degree.

The student should inform his or her advisor and the other two letter writers that their letters should address (1) the student's research accomplishments and (2) their evaluation of the student's potential to successfully complete and defend a Master's Thesis or Doctoral Dissertation. Doctoral students who petition to complete a terminal Master's in Biology and are approved for this change may not petition to transfer back to the doctoral program.

These letters, along with the student's course transcripts, will be used by the GC to evaluate the student's petitions for degree change. The letters should be given to the Graduate Program Administrator. The letters from the faculty should be given to the Graduate Program Administrator directly by the faculty and will be treated as confidential. Candidates for the M.S. degree who are admitted to the Ph.D. program will be required to pass the qualifying examination within a specified number of semesters.

Up to 12 hours of graduate-level coursework taken by a non-matriculated graduate student at Syracuse University may be applied to a degree program after matriculation. This requires acceptance of an appropriate petition by the Graduate School.

**C. Financial Awards:** It is anticipated that all graduate students who are awarded support and remain in good standing will receive some form of financial aid throughout their graduate studies. Such support is not guaranteed after the end of the third year for M.S. candidates, or fifth year for Ph.D. candidates. Non-matriculated students are not eligible for financial aid.

a) TEACHING ASSISTANTSHIPS: Teaching assistants generally aid in the instruction of undergraduate students, with duties ranging from conducting recitation sections in an introductory course to activities associated with a laboratory course. Requests for assistantships for the following academic year will be solicited from presently enrolled students approximately one semester prior to the availability of support. Each year the GC will remove from the general pool at least 1/6 of the total TA positions budgeted for the next academic year and reserve them for incoming graduate students. All remaining support will be used to honor the requests of continuing students in good standing. Good standing is monitored annually by the GC and is defined as meeting departmental requirements of formal progress reports, committee meetings, and qualifying exams (where applicable), including timeliness of meeting these requirements and all associated paperwork. In addition, good standing encompasses satisfactory performance as a TA (where applicable), obtaining at least a B in each formal course taken, weekly attendance in BIO 705 (*Graduate Research Seminars*), and satisfactory progress toward completion of a M.S. or Ph.D. degree (see Sect. V. D.). Good standing also includes compliance with department and university regulations including those of the Environmental Health and Safety Office, the Graduate School, the Syracuse University Student Code of Conduct, and SU Academic Rules and Regulations. Failure to fulfill any one of these requirements may result in immediate dismissal from the graduate program at the discretion of the Graduate Committee.

Students who have accepted a TA may not accept alternative support during the period of their award without permission of the GC. Approval is dependent upon finding a qualified replacement for the TA position. TAs or RAs holding a full-time appointment are expected not to accept any other employment.

b) SUMMER FELLOWSHIPS: Available support will be awarded as equitably as possible to eligible students on a competitive basis.

c) RESEARCH ASSISTANTSHIPS: RAs are awarded by individual faculty members who have external funding. The duties and responsibilities of an RA are established by the faculty member within the general policies of the Graduate School. Students who are awarded an RA must maintain good standing within the department.

d) SPECIAL AWARDS: Applications for special awards, including Syracuse University Fellowships, which are awarded on a competitive basis to exceptionally qualified students by the Graduate School, will be reviewed by the GC.

**D. Satisfactory Progress:** All students must make sustained progress toward completion of a graduate degree and comply with the following conditions:

- Students are to select a **Research Advisor** by the end of their first semester (or if rotating, by one week after the end of their last rotation) and a **Research Committee** by October 1st of their third semester in residence (or by March 1st for Spring admits; see Section III B).
- A "**Preliminary Program Outline**" (Appendix B) is to be prepared in consultation with the Research Committee within 30 days after selection of the committee.
- Students must meet annually with their Research Committee. During this meeting, the student's academic and research progress will be reviewed. A "**Summary of Progress**," prepared by the student, and a "**Graduate Student Progress Report**," prepared by the Research Advisor and each committee member must be placed in the student's file no later than one week after an annual committee meeting (see Appendix F and G

respectively). These documents will be used in assigning available financial awards to students. Continuation of support and/or the opportunity to obtain special awards will be jeopardized if the student's files are not up to date.

- Each student must file the **Annual Graduate Student Progress Report** by April 15th of each academic year. This report is distinct from the committee meeting report, and it is assessed by the G.C. to evaluate student progress.
- Continuation in an M.S. program on a part-time basis requires satisfactory completion of 12 hours of formal coursework per year and/or sustained research progress, as judged by the student's Research Committee.
- Students in the Ph.D. program must attempt the **Qualifying Examination** no later than the end of their fourth semester in residence.
- Students failing to achieve a B or better in any graduate course may be placed on Departmental Academic Probation. Failing to achieve B or better in an additional course, after being placed on probation, is grounds for dismissal from the graduate program.
- Students failing to make satisfactory progress in their research may be placed on probation by their Research Committee. Specific conditions and a timetable for removal of probation must be established and filed with the GC. Failure to satisfy these conditions will result in dismissal from the program.
- Students failing to perform satisfactorily as TAs, based on information obtained from their teaching supervisors, will be subject to non-renewal of their contract. Subsequent reappointment requires approval by the GC and assistant chair of the department.

In certain cases, the GC or the Research Committee, may, after carefully reviewing the records and performance of a student, require that the student's financial support not be renewed or that the student terminate his/her enrollment in the Department. Such decisions would not be made lightly, and the student has the right to appeal. Actions taken by a Research Committee may be appealed to the GC, and actions taken by the GC may be appealed to the Department Chairperson. Should the student feel that he or she has been unfairly judged after completion of the internal appeal process, the case may be taken to the Committee on Students of the Board of Graduate Studies for further consideration.

**E. Completion of Graduate Degrees after leaving campus:** Any matriculated student desiring to complete a graduate degree after leaving the campus (excluding periods of off-campus research) must, in conjunction with his or her Research Committee, develop a specific timetable for completion of the degree for approval by the GC. The timetable must establish deadlines for the periodic submission of requisite material, i.e., data analyses, drafts of theses or dissertations, etc. Failure to meet established deadlines or to obtain approval for a modified timetable will result in dismissal from the program. Students must register for GRD 998 Degree in Progress for Zero credits each semester until graduation to maintain their student status.

## Appendix A

# Course Work Requirements for Graduate Degrees in Biology

**M.S.:** 30 credits total; at least 24 credits formal\* coursework, including at least two (2) Graduate Seminar courses, plus 6 credits BIO 997 (*Master's Thesis*). Participation in a Graduate Seminar course during the first semester is required.

**Ph.D.:** 48 credits total; at least 18 to 24 credits formal\* coursework, including at least two (2) Graduate Seminar courses taken *for credit*, plus BIO 999 (*Dissertation*), to total 48 credits. Participation in a Graduate Seminar course during the first semester is required. During their first year, all rotation students must register for BIO 610 (*Graduate Research Laboratory*) for the Fall and Spring (and Summer, if applicable) semesters (2 credits per rotation).

\* Formal coursework includes variable credit courses, but there are limits on the number and level of courses that can be applied to each degree (see p. 4 and Appendix E).

**FULL-TIME STATUS:** Students holding a TA should register for 9 credits per semester. Those holding a fellowship should register for 12 credits per semester. However, once students have completed the requisite coursework requirements for their degree (30 credits for MS/ 48 credits for PhD), they should register for GRD 998 (*Degree in Progress*) for 0 credits each semester (and also submit a "Certification of Full-Time Status for Matriculated Graduate Students" form if they are not a TA, an RA, or a Fellow).

### REQUIREMENTS AND DEADLINES

	<u><b>M.S.</b></u>	<u><b>Ph.D.</b></u>
Select Research Advisor (p. 4)	End of first semester	End of first semester (or if rotating, by one week after end of last rotation)
Select Research Committee (in consultation with Advisor, p. 4)	October 1st of the third semester (or March 1st for Spring admits)	
First meeting with Research Committee (TBA by student, p. 4)	Within 30 days of Research Committee selection	
File "Preliminary Program Outline" (p. 5, Appendix B)	Immediately following first Research Committee meeting	
Subsequent meetings with Committee (TBA by student, p. 5)	Annually, between September 1st and May 15th	
Submit annual "Summary of Progress" and "Graduate Student Progress Reports" (p. 5)	Following each Committee meeting, but at least annually and no later than May 15th	
Take Qualifying Exam (Ph.D. only) (p. 7)	N/A	No later than the end of the fourth semester
Completion of Graduate Seminar Courses requirement (p. 4-5, Appendix E)	At least 2 courses	At least 3 courses (At least 2 for credit before Qualls)
Submit Official "Program of Study" (Graduate School)	Final semester or before (prior approval by Associate Chair required)	
Present formal Departmental Seminar (TBD by student, p. 6)	Prior to thesis defense	Prior to dissertation defense
Approval, in writing, of thesis or dissertation by readers (p. 6)	<u>Prior</u> to submission of a formal "Request for Examination" by the Graduate School	
Thesis or Dissertation Defense (p. 5)	At least three weeks after submission of requisite forms to the Graduate School	

Appendix B

## Preliminary Program Outline: First Committee Meeting

NAME: \_\_\_\_\_

MEETING DATE: \_\_\_\_\_

**Formal Course Work:**

a) Required courses, including Graduate Seminar courses:

<u>Course Number</u>	<u>Title</u>	<u>Credits</u>
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b) Other recommended Courses:

**PhD Students Only: Components and Mechanisms for Completion of the Qualifying Examination Oral Proposal Defense:**

Subject Areas	Mechanisms: Course(s) or Examination(s)
_____	_____
_____	_____
_____	_____
_____	_____

**Recommended Informal Training and/or Comments by Committee:**

Please **PRINT** Research Advisor and Research Committee Member names:

Research Advisor: \_\_\_\_\_

Committee Members: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

File this form with the Biology Graduate Program Administrator after your first Research Committee meeting by *no later than* the end of your 3rd semester.

DATE FILED: \_\_\_\_\_

Appendix C

# Certification of Candidacy for the Ph.D. Degree in Biology

**I. To be completed by the Student:**

Student: \_\_\_\_\_ SUID: \_\_\_\_\_

Advisor: \_\_\_\_\_

Qualifying Exam Committee Chair: \_\_\_\_\_

Research Committee Members: \_\_\_\_\_

Additional Committee Member: \_\_\_\_\_

**II. To be completed by the Qualifying Exam Committee Chair:**

Complete this form only after the student has taken both parts of the qualifying exam, and all requirements mandated by the Qualifying Exam Committee have been met:

Title of Proposal: \_\_\_\_\_

Date of Oral Defense of Proposal: \_\_\_\_\_

Committee Action(s): \_\_\_\_\_

Committee Decision (circle one)    Oral Defense of Proposal:    PASS    FAIL

Date of Oral Examination: \_\_\_\_\_

Committee Action(s): \_\_\_\_\_

Committee Decision (circle one)    Oral Examination:    PASS    FAIL

Mandated requirements and date(s) of satisfactory completion: \_\_\_\_\_

**III. Certification:**

The Qualifying Examination and all related requirements have / have not been satisfactorily completed as indicated above: (circle one)

Qualifying Exam Committee Chair: \_\_\_\_\_ Date: \_\_\_\_\_

Graduate Program Director: \_\_\_\_\_ Date: \_\_\_\_\_

Return completed and signed form to the Biology Graduate Program Administrator

**OFFICE USE ONLY: Date filed with GEMC:** \_\_\_\_\_

Appendix D

# Graduate Student Checklist

Initial Objectives Reviewed (p. 5): \_\_\_\_\_

Preliminary Program Outline Filed (p. 5): \_\_\_\_\_

Required Course Work Completed: \_\_\_\_\_

Qualifying Examination Passed: \_\_\_\_\_

**Courses and Grades:**

Semester:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_

**Summary of Progress (p. 5)**

- Year: 1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_  
4. \_\_\_\_\_  
5. \_\_\_\_\_

Participation in Graduate Seminar Courses:  
(Date / Course # / Grade) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Research Committee Meeting**

- Year: (Date) 1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_  
4. \_\_\_\_\_  
5. \_\_\_\_\_

Certification of Ph.D. Candidacy (Appendix C)  
Submitted: \_\_\_\_\_

**Committee Progress Reports (p. 5)**

- Year: 1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_  
4. \_\_\_\_\_  
5. \_\_\_\_\_

Official Program of Study Filed with Graduate School: \_\_\_\_\_

Diploma Request filed: \_\_\_\_\_

Graduate School Records Checked: \_\_\_\_\_

Written Approval of Readers Obtained: \_\_\_\_\_

Request for Examination filed: \_\_\_\_\_

Departmental Seminar Presented: \_\_\_\_\_

Dissertation/Thesis Defense: \_\_\_\_\_

Dissertation/Thesis Filed with Graduate School: \_\_\_\_\_

## Appendix E

# Variable Content Courses

**BIO 610** (*Graduate Research Laboratory, "lab rotations"*) [maximum total 6 credits]

To be taken a maximum of three times. (Fourth rotations, if taken, are taken for 0 credits.) These courses are 13-week periods of independent study in a laboratory. During their first year, all rotating students should register for BIO 610 for 2 credits for the Fall and Spring (and Summer, if applicable) semesters.

**BIO 688** (*Biological Literature*) [maximum total 6 credits]

These courses are essentially tutorials in which a student reviews a specific area in conjunction with a faculty member. The content and procedures for evaluation are outlined in a petition to be filed with the department prior to registration.

**BIO 690** (*Independent Study*) [maximum total 6 credits]

These courses are reserved for special projects during which students conduct laboratory or field research that is not related to their thesis or dissertation research. In general, a student should not register for BIO 690 supervised by his or her advisor. A petition is required, in which the project and procedures for evaluation are described.

**BIO 705** (*Graduate Research Seminars, Biocomplexity or Cell Signaling*) [0 credits or 1 credit]

Students present their thesis or dissertation research and critically evaluate the research presentations of other students. All students are expected to attend each semester whether they register for credit or not. (This course may NOT be used to satisfy the post-qualifying exam Graduate Seminar requirement.)

**Graduate Seminar Courses** [no credit limit]

Graduate Seminar courses are designed to provide students with training and experience in organizing, evaluating and communicating scientific data and information relating to specific areas in Biology. These courses may include graduate courses offered by SUNY ESF or SUNY Upstate Medical University. To count as a Graduate Seminar course, the course must be a 600-level or 700-level course. In addition, a course at the 600-level should usually involve a substantial amount of discussion and critical evaluation of primary literature, and either student oral presentations and/or grant writing.

Master's students are required to complete two (2) Graduate Seminar courses.

Doctoral students are required to complete three (3) Graduate Seminar courses: *at least* two (2) Graduate Seminar courses for credit before their qualifying exam, and at least one (1) additional Graduate Seminar course which must be taken after the qualifying examination (to assure that they are aware of the latest developments in specific areas related to their research interests). Any Graduate Seminar courses taken after the qualifying exam would be taken for 0 credits.



APPENDIX F

**Graduate Student Research Committee  
Progress Report – Advisor Version**

**Instructions: To be completed by Advisor. Advisor signature required.**

**Student:** Retain copy for yourself; distribute copies to committee; submit original to Graduate Program Administrator.

PRINT CLEARLY

**TO BE COMPLETED BY STUDENT**

STUDENT: \_\_\_\_\_

MEETING DATE: \_\_\_\_\_

Program & Year entered: \_\_\_\_\_

Return this form **no later than 1 week**  
after meeting is held.

**RESEARCH ADVISOR:**

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**RESEARCH COMMITTEE MEMBERS:**

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**DATE OF LAST COMMITTEE MEETING:** \_\_\_\_\_

(The Committee is required to meet at least once a year.)

**TO BE COMPLETED BY ADVISOR**

1. a. State the long term overall objective of the student's research efforts:

b. Has this changed since the last meeting? If so, how?

2. What has the student accomplished in research (in total or since the last meeting/advisory session)? How does this compare with the goals set (i.e. more, less, or change of direction makes quantitation difficulty)?

3. What are the goals for the coming semester (or year)?

4. List any specific recommendations regarding direction of research and/or formal coursework:

5. List recommendations for improvement in: (a) the student's performance and/or (b) faculty guidance.

6. Should a committee meeting session be scheduled sooner than a year from now?

YES \_\_\_\_\_ How soon? \_\_\_\_\_ (# months) No \_\_\_\_\_

7. Doctoral Candidates Only:

a) Qualifying Examinations:

Oral Proposal Defense, date passed or scheduled: \_\_\_\_\_

Oral Exam, date passed or scheduled: \_\_\_\_\_

b) Has student met conference presentation requirement?

Conference attended, type of presentation, and date: \_\_\_\_\_

c) Has student met manuscript submission requirement? \_\_\_\_\_

Submitted to: \_\_\_\_\_

8. Give an estimated date of when the student will defend dissertation/thesis: \_\_\_\_\_

9. COMMENTS:

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\* \* \* \* \*

In fulfilling the role of advisor/member of the research committee, progress toward the completion of the dissertation/thesis and other degree requirements has been discussed with the student. The student has also been reminded that another meeting must be scheduled within \_\_\_\_\_ months of this date.

\_\_\_\_\_  
Advisor's Signature Date

\_\_\_\_\_  
Student's Signature Date

**RETURN SIGNED ORIGINAL TO:** Biology Graduate Program Administrator

APPENDIX G

**Graduate Student Research Committee  
Progress Report – Committee Member Version**

**Instructions: To be completed by Committee members other than the Advisor.**

**Committee Member signature required**

**Student:** Retain copy for yourself; distribute copies to committee; submit original to Graduate Program Administrator.

PRINT CLEARLY

**TO BE COMPLETED BY STUDENT**

STUDENT: \_\_\_\_\_

MEETING DATE: \_\_\_\_\_

Program & Year entered: \_\_\_\_\_

**Return this form no later than 1 week  
after meeting is held**

**RESEARCH ADVISOR:**

\_\_\_\_\_

**RESEARCH COMMITTEE MEMBERS:**

\_\_\_\_\_

**TO BE COMPLETED BY COMMITTEE MEMBER**

1. Please assess student's progress since the last committee meeting (circle below)

**Very concerning      Concerning      Adequate      Good      Very Good      Excellent**

2. Strengths / areas of excellent progress since last meeting (please comment if appropriate)

3. Areas of concern (please comment if appropriate)

4. List any specific recommendations for the student:

5. Should a committee meeting session be scheduled sooner than a year from now?

YES \_\_\_\_\_ How soon? \_\_\_\_\_ (# of months) No \_\_\_\_\_

6. Any other comments:

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\* \* \* \* \*

In fulfilling the role of member of the research committee, progress toward the completion of the dissertation/thesis and other degree requirements has been discussed with the student. The student has also been reminded that another meeting must be scheduled within \_\_\_\_\_ months of this date.

\_\_\_\_\_  
Committee Member's Name ( PLEASE PRINT )

\_\_\_\_\_  
Committee Member's Signature Date

\_\_\_\_\_  
Student's Signature Date

**RETURN SIGNED ORIGINAL TO:** Biology Graduate Program Administrator

**APPENDIX H**  
**Annual Graduate Student Progress Report**  
**Deadline: Submit by April 15th**

**Student:** This report serves several important purposes: 1) to provide an opportunity for graduate students and their Research Advisor(s) to reflect on the student's accomplishments over the past year, 2) to strategize and prioritize the student's goals for the forthcoming year, and 3) to ensure that students are making adequate progress in their scholarly development and research progress. Complete all requested information and review the information with your Research Advisor. Submit a printed, signed copy of this form to the Biology Graduate Program Administrator by the above deadline.

**PART 1:**

Student: \_\_\_\_\_ Today's Date: \_\_\_\_\_

Degree Program (PhD/MS): \_\_\_\_\_ Entered Program in (Semester and Year): \_\_\_\_\_

Research Advisor: \_\_\_\_\_

Research Committee Members: \_\_\_\_\_

Date of Last Annual Research Committee Meeting: \_\_\_\_\_

Financial Support for Current Academic Year:

TA  RA  Fellowship  Other: \_\_\_\_\_

Anticipated Financial Support for Next Academic Year:

TA  RA  Fellowship  Other: \_\_\_\_\_

If none, state reason (e.g., graduating): \_\_\_\_\_

**GRADUATE STUDENT PROGRAM REQUIREMENTS:**

Current Overall GPA: \_\_\_\_\_

**Total Credits:**

Refer to a copy of your current transcript when completing this table. Also, be sure to calculate and enter the totals.

NOTE: "Formal Coursework" refers to all 600-level and above graduate coursework which can be counted toward your Biology graduate degree, but does not include BIO 997 (*Master's Thesis*) or BIO 999 (*Dissertation*) credits.

	Completed Credits (as of end of previous Fall semester)	In-Progress Credits (current Spring semester)	Total Credits
Formal Coursework			
BIO 997 ( <i>Master's Thesis</i> )			
BIO 999 ( <i>Dissertation</i> )			
Other Credits (will not count toward Biology MS or PhD degree)			
Totals Credits			

Graduate Seminar Courses (completed to date or currently in progress):

<u>Semester</u>	<u>Credits</u>	<u>Course #</u>	<u>Title</u>
1)			
2)			
3)			

Estimated Date of Defense (Dissertation / Thesis): \_\_\_\_\_

Additional Requirements for PhD Candidates:

Qualifying Exam Date(s): \_\_\_\_\_ Date Completed (i.e., Passed): \_\_\_\_\_

Research Presentation: \_\_\_\_\_

Manuscript Submission: \_\_\_\_\_

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## Part 2:

### RESEARCH PROGRESS AND GOALS:

**Suggested format:** Please write a few paragraphs (or create a bulleted list) highlighting your accomplishments and activities during the past year, and summarizing your goals for the forthcoming year. You should include sufficient detail to permit assessment by your Research Advisor and the Graduate Committee. (To answer one or both questions below, you may attach one or two additional sheets, if necessary, but no more than 2 pages total. Any additional pages should also include a line for your Research Advisor's signature.)

- 1) Describe progress made toward the completion of your degree (and other scientific accomplishments or activities) since the beginning of last summer:

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- 2) Describe your research goals for the forthcoming year:

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Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

### To Research Advisors:

Your signature below indicates that you have read and approved this completed document. Completed and signed forms are a requirement for continued financial support of a student (e.g., Teaching or Research Assistantships).

Research Advisor Signature: \_\_\_\_\_ Date: \_\_\_\_\_