

**GRADUATE STUDENT HANDBOOK  
2014-2015**

**Department of Biological Sciences  
University of Alabama  
Tuscaloosa, Alabama**

# Biological Sciences Graduate Student Handbook

## Message from the Chair

Welcome! We are pleased that you are a part of our Department. We hope that your years here will be both productive and exciting. Our goal is to help you gain the skills and knowledge that you will need to be competitive for the next step in your chosen career path. And, if you are uncertain what that career path should be, we will introduce you to the many exciting career opportunities in our rapidly advancing discipline.

The Biological Sciences faculty here at the University of Alabama have a wide range of research interests and expertise, including cell and molecular biology, computational biology, conservation biology, ecology, evolution, genetics, marine science, neurobiology, physiology, systematics, and more! While we want you to have a strong research focus, I cannot emphasize enough the importance of acquiring breadth as well as depth in your education here. Advances in technology and in biological knowledge are breaking down the barriers between the many biology disciplines. To be successful, you (and we) will necessarily become increasingly interdisciplinary in our research expertise. Just as research and career options 10-15 years in the past are quite different in many ways from Biology today, I suspect that Biology 10-15 years in the future will have technological capabilities that allow biologists to answer questions we cannot even imagine today. So we encourage you to get to know the faculty and graduate students throughout the Department. We also encourage you to be engaged and active in your Graduate Student Association. Ultimately, your education and research training are in your own hands, and you will learn, if you do not know already, that the scientific enterprise is a communal affair. Your interactions with other scientists, as much as your hard work and intelligence, are essential for your success now, and in the future.

So whether your future lies in teaching, applied or basic research, or any of the many other career options, you officially set out on that path with your entry into our graduate program, and we are excited to have the privilege of helping you navigate!



Janis O'Donnell  
Professor and Chair  
August 2014

**THE CAPSTONE CREED OF THE UNIVERSITY OF ALABAMA**

*"AS A MEMBER OF THE UNIVERSITY OF ALABAMA COMMUNITY, I WILL PURSUE KNOWLEDGE; ACT WITH FAIRNESS, HONESTY, AND RESPECT; FOSTER INDIVIDUAL AND CIVIC RESPONSIBILITY; AND STRIVE FOR EXCELLENCE."*

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## The Graduate Program

The primary aim of our graduate program in the Department of Biological Sciences is to foster your development as a scientist by providing you with a strong technical background, a sound grasp of current scientific problems and the analytical skills needed to address such problems. We also want to instill in you a motivation to continued learning, which we hope will permit you to define and solve new kinds of research problems during your professional career. Upon graduating, you will move on to positions in academia, industry, and government. We welcome your input on our graduate program. Your suggestions will assist us in further developing our program to remain at the cutting edge of science.

### Department of Biological Sciences Graduate Committee

The Department of Biological Sciences (BSC) Graduate Committee consists of five faculty members representing diverse research areas in the department. In 2010-2011, the committee includes Dr. Stevan Marcus (Chair), Dr. Jon Benstead, Dr. Carol Duffy, Dr. Janis O'Donnell and Dr. Leslie Rissler. The Chair of the BSC Department also takes part in Graduate Committee affairs *ex officio*. The Graduate Committee has specific responsibility for establishing and administering graduate degree requirements, to facilitate and implement new policies in conjunction with the Chair of the Department, coordinate graduate recruiting efforts and recommend admission of students into the program as well as serve as a resource and liaison for graduate students in the department.

### Graduate School

The purpose of this handbook is to outline the Department of Biological Science's requirements for earning a graduate degree. The general rules and regulations governing all UA graduate students are found at the Graduate School web page, <http://graduate.ua.edu/catalog/index.html>. This handbook should be used in conjunction with the Graduate School Catalog, which provides additional information regarding general policies of the Graduate School.

### Residency

The University of Alabama residency guidelines are established by Alabama Code 16-64. Students are governed by the Board of Trustee Non-Resident tuition policy otherwise known as Board Rule 202 which was approved December 5, 1997. The term "Alabama resident" for tuition purposes may differ from other definitions of Alabama residency. To be classified as a resident for tuition purposes, a student must meet the guidelines for residency as defined by the Alabama Code and University of Alabama Board of Trustees rule. Information on qualifying for Alabama residency for tuition purposes may be found online at: <http://registrar.ua.edu/policies/residency>.

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### Courses Offered

Catalog descriptions of all courses offered may be found online at: <http://graduate.ua.edu/catalog/15400.html>. In general, courses numbered 400-499 are primarily for advanced undergraduate students, while courses numbered 5xx or 6xx are intended for graduate students. Coursework below the 400 level will not be accepted for graduate credit. A maximum of 6 semester hours of 400-level course credit may be accepted for a master's degree program, and only if a form for approval of 400-level coursework for graduate credit is completed and approved by the department and Graduate School prior to the semester in which the 400-level coursework will be taken. As all 400-level courses in the Department of Biological Sciences are also offered at the 500 level, 400-level courses can only be taken outside of the department. Such courses must be in departments that offer a graduate degree and they must carry appropriate extra work to be counted for graduate credit; in addition, the student must have the consent of his/her major advisor to take such courses for graduate credit and complete the necessary Graduate School form prior to enrolling in 400-level courses (see <http://bsc.ua.edu/forms-for-graduate-students>). No 400-level credit (except the 6 hours accepted toward the master's degree) may be accepted for doctoral degree programs. Refer to Section 4.9 of the UA Graduate Catalog for more details.

### General Policies and Requirements

The BSC Department has grown significantly over the last few years and our graduate program is undergoing change and evolving as we grow. Some of the requirements in this handbook may change during your graduate studies, but you will always have the option of graduating under the requirements in effect when you entered the program.

### Thesis Advisor

As a graduate student in the BSC Department, **you** are responsible for your overall program of study and your progress toward the degree. You will be advised throughout your graduate career by your thesis advisor and thesis committee, as well as by any other faculty you wish to consult.

Upon admission, if you have not already identified an advisor, you will be assigned an advisor who will work with you in selecting courses and planning your initial curriculum. This advisor may or may not become your primary thesis advisor. You may use your first year to explore research opportunities in the department, but you *must* select a thesis advisor no later than the end of your second semester in residence. Your advisor must agree to act in that capacity and will be responsible for providing lab space to support your research. You may change advisors at any time and for any reason, but you *must* have a primary advisor at all times after the end of your first year in the program in order to remain in good standing and to be considered for assistantships.

### Thesis Committee

Your thesis advisor will work with you to plan a research project and form an appropriate thesis committee. The thesis committee acts to advise you in your research and

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will have primary responsibility for evaluating your work and your thesis. The membership of the committee varies among degree programs.

### **Departmental Seminar (Graduate Research Seminar)**

Regular departmental seminars are an important part of your graduate education and all graduate students are **required** to register for the weekly departmental seminar, enrolling in BSC 602 (Advanced Molecular Research Seminar), BSC 605 (Ecology and Systematics Seminar), or BSC 606 (Advanced Ecology and Systematics Seminar) **each semester**. The purpose of the weekly graduate student seminar is to ensure that all graduate students are familiar with the breadth of current biological research being carried out in the department. In the weekly seminar format, graduate students present their current research. Students receive pass/fail for each semester and are expected to participate by presenting their research in consultation with the faculty instructor overseeing the seminar course and providing written critiques of weekly seminar speakers.

### **Grades and Credit Hours**

As a graduate student, you must maintain a minimum grade point average to remain in good academic standing. The minimum satisfactory GPA is 3.0. A graduate student must register for at least 9 credit hours, excluding credit hours awarded for service as a Graduate Teaching Assistant (GTA), to maintain full time status, and may register for a maximum of 15 semester hours, inclusive of credit hours awarded for service as a (GTA), in the fall or spring semester.

### **Transfer of Credit from Other Institutions**

M.S. students can request the transfer of up to 12 credit hours of graduate courses taken at other institutions. Ph.D. students can request the transfer of up to 24 credit hours of graduate courses taken at other institutions (see **Course Requirements** under Degree Requirements, e.g., page 11 for more details).

### **Overview of the Handbook**

The goal of our graduate program is to foster your development as a scientist by providing you with a rigorous technical background, strong analytical and writing skills, as well as in-depth knowledge of current research areas and questions within the broad discipline of biological sciences. Another goal of our graduate program is to prepare you for a professional career in academia, industry, and government.

The handbook is divided into multiple sections. The first 4 sections provide an overview of the available degrees, the requirements that must be met to maintain good standing, and the general expectations of the Department for all graduate students. Please read these sections, and then proceed to the section that describes the degree you seek (Masters, Ph.D.). The specific sections contain step-by-step descriptions of the milestones that must be completed to obtain the degree. A timeline is included showing when each milestone should be completed. Links to the various forms that must be filed to indicate completion of each task and milestone are provided – hardcopy examples are included in the

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Appendix (note that all graduate school forms are fillable PDF files and available at <http://bsc.ua.edu/forms-for-graduate-students>). The final 3 sections provide general information on financial aid and guidance for students on choosing a research mentor or seeking to change between research laboratories or degrees. The Biological Sciences Department continues to grow with the addition of new faculty and graduate students. Some departmental requirements may change during the course of your studies, but you will have the option of graduating under the requirements in effect the year during which you entered the program.

This Graduate Student Handbook is an essential supplement to the University of Alabama Graduate Catalog and intended primarily to detail requirements specific to the Biological Sciences Graduate Program. As such, students should also refer to the Graduate Catalog for information regarding all general requirements of the Graduate School (see <http://graduate.ua.edu/catalog/index.html>). Consistent with Graduate School policy (<http://graduate.ua.edu/catalog/14800.html>), the Biological Sciences Graduate Program reserves the right to change any provision or requirement at any time in order to fulfill its educational mission and exercise its educational responsibility.



## Expectations for Graduate Student Training

The following expectations are given to ensure that students understand the importance of various activities that span research, teaching, and service - the hallmarks of academia.

- All students are encouraged to become active members of the Department of Biological Sciences by participating in its various academic and social activities. Students should attend regular departmental seminars and student and faculty research talks. These seminars and research talks will provide in-depth knowledge of the biological sciences and provide opportunities to network with invited seminar speakers (i.e., potential employers), fellow graduate students, and departmental faculty.
- Students should attend and present their research at national meetings in their chosen field of expertise. These activities provide additional and important opportunities to network with prospective employers as well as gain experience in showcasing research projects to experts in the field. These meetings are also an opportunity to establish collaborations with colleagues. Graduate Students are encouraged to complete applications to the Graduate School's Research and Travel Support Fund for Graduate Students (<http://www.graduate.ua.edu/financial/researchtravelfund.html>). Reminders will be sent out during the academic year for application requests.
- Students should endeavor to submit at least one peer-reviewed paper from their graduate studies at UA to a research journal. Many advisors make this a mandatory requirement, as it is critical to your future career success. Prior to the dissertation defense, students in the Ph.D. program are expected to submit for publication to a peer-reviewed journal at least one first-author manuscript containing data produced by the student during enrollment in the Ph.D. program. Publications are a critical measurement of productivity during graduate training. First-authored publication(s) demonstrate your technical writing skills to others as well as establish your ability to design and execute research projects.
- Students are encouraged to actively seek funding (external to the Department of Biological Sciences) for their research by submitting grant and fellowship applications.
- Students are expected to carry out their assigned teaching and research duties by completing all required activities including, but not limited to, attending laboratory preparation meetings, completing grading assignments in an accurate and timely manner, completing proctoring assignments, attending research laboratory meetings and completing research assignments in an accurate and timely manner.
- Students should engage in service activities (meeting prospective graduate students, faculty interviews, guest speaker lunches, etc.) whenever possible, but not to the extent that it interferes with completing their primary research and/or teaching duties.

## Maintaining Good Standing

### ***Scholastic requirements***

Graduate students are required to meet high standards of scholastic performance. A minimum of 75% of all graduate course work must be passed with a grade of "B" or better. A student whose graduate GPA falls below 3.0 shall be placed on Academic Warning. While on probation, the student is not eligible to apply for candidacy for a degree or hold a Graduate Assistantship. Any student on academic warning must restore a 3.0 GPA upon completion of the next 12 hours of graduate courses following the semester in which the GPA drops below 3.0. This is a Graduate School requirement, as specified in Section 4.8 of the Graduate Catalog (<http://graduate.ua.edu/catalog/14500.html>). In addition, it is a requirement of the Biological Sciences Graduate Program that a student on academic warning must restore at least a 3.0 GPA upon completion of the next 12 hours of course work, regardless of the level of the courses. Failure to meet either of these conditions shall result in dismissal from the graduate program.

### ***"I" (incomplete) or "N" (no grade submitted) grades***

"I" and "N" grades are calculated in the student's overall grade point average as an "F." They must be removed within four weeks *during the next term of enrollment* if the student's overall grade point average drops below a 3.0 as a result of the "I" or "N" grade(s). Conditionally admitted students who fail to bring their overall GPA back up to a 3.0 or better by removing the "I" or "N" within the four weeks will earn Academic Suspension (dismissal) from the Graduate School. Graduate students with good academic standing who fail to bring their overall GPA back up to 3.0 or better by removing the "I" or "N" grade(s) within the four weeks will earn Academic Warning. Academic warning must be removed by raising the overall grade point average to 3.0 or better during the 12 hours of graduate work *immediately following the period in which the warning was earned*. Failure to do so will result in Academic Suspension (dismissal) from the Graduate School (<http://graduate.ua.edu/catalog/14500.html>).

### ***Research progress***

Students are required to make consistent progress toward research goals as defined by their research proposal and their graduate advisory committee.

### ***Teaching requirement***

All graduate students supported by departmental or university fellowships are required to teach at least one semester.

### ***Teaching expectations/Teaching Advancement Program (TAP)***

The first activity for all new GTAs is the Graduate School's Workshop for New Graduate Teaching Assistants ([http://graduate.ua.edu/events/workshop\\_gta.html](http://graduate.ua.edu/events/workshop_gta.html)). All students supported by Graduate Teaching Assistantships (GTAs) are expected to perform all professional duties. Examples include but are not limited to attending all prep meetings, meeting all proctoring assignments, and grading exams in a timely manner. To ensure that all graduate students supported on GTAs are effective instructors, they are required to enroll in BSC 695 – TAP for their first 2 semesters as a GTA.

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### ***Seminar courses***

Students are required to attend and participate in a literature-based seminar course (examples are BSC 603 [Current Topics in Molecular Biology], BSC 584 [Aquatic Biology Seminar], and BSC 632 [Higher Eukaryotic Genetic Model Systems], but not BCS 602, BSC 605, or BSC 606, each academic year unless they have unavoidable conflicts. However, formal registration for the course is not mandatory. With the approval of his/her graduate committee, a student may register for credit in these courses for up to four semesters. All credit in these courses will count toward the minimum number of hours required for graduation. These seminar courses ensure an in-depth exposure to discipline-specific research.

### ***Medical withdrawal***

The University's withdrawal policies can be found on the Student Receivables website (<http://studentreceivables.ua.edu/withdrawal.html>). For a medical withdrawal, the student must contact University Health Service (<http://shc.ua.edu>). A medical withdrawal cannot be granted if the graduate student has taken any finals or their equivalent (final papers, final projects, or similar assignments) for the semester for which a withdrawal is being requested. The procedures for a medical withdrawal are available by contacting University Health Service (348-6262).

### ***Time limits***

Students face two sets of time limits. The first is the time that the Department endeavors to maintain financial assistance (pg. 36). Failure to complete the desired degree within this expected time limit decreases a student's priority score for awarding of GTAs. The second is the time limit set by the Graduate School by which a desired degree must be completed (see Graduate Catalog, <http://graduate.ua.edu/catalog/14800.html>). Failure to complete the desired degree within this time limit results in suspension or dismissal from the program.

International Students must be cognizant of any time limits relative to their current I-20 and/or VISA status. Contact the Capstone International Center for more information.

## DESCRIPTION OF GRADUATE PROGRAMS

There are three graduate degree programs in the Department of Biological Sciences:

- Master's degree in Biological Sciences (M.S.)
- Master's degree in Marine Science (M.S.)
- Doctor of Philosophy degree in Biological Sciences (Ph.D.)

Each of the M.S. degrees can be accomplished either by enrolling in Plan I (with thesis) or in Plan II (without thesis).

Master's degrees can also be accomplished by either Plan I or Plan II through the University Scholars Program. The University Scholars is a closely integrated undergraduate and graduate program in which qualified undergraduate students begin graduate study in their senior year; such a program may lead to simultaneous or sequential completion of requirements for both Master's and Bachelor's degrees. The University Scholars Program is for highly motivated candidates for the B.S. Degree in Biology, Microbiology, or Marine Science. More information regarding the University Scholars Program can be found in section 4.4 of the Graduate Catalog (<http://catalogs.ua.edu/catalog10/501304.html>).

## Degree Requirements

### A. Master's Degree, Plan I (with thesis)

#### 1. Course Requirements:

A minimum of 30 credit hours of graduate coursework is required including:

Coursework and Requirements	Credit Hours
BSC 599 (Thesis Research)	6
24 credit hours <u>other than BSC 599</u> , including: <ul style="list-style-type: none"> <li>• At least 19 credit hours with a letter grade (i.e., not Pass/Fail)</li> <li>• A maximum of 6 credit hours with a letter grade may be taken from BSC 507 (Research Techniques in Biology) and/or BSC 607 (Advanced Research Techniques in Biology) <u>combined</u></li> </ul> <p><b>NOTE:</b> Up to 5 hours of Pass/Fail credit can be applied toward fulfillment of degree requirements. Pass/Fail hours can include up to a total of 4 credit hours of BSC 602, BSC 605, or BSC 606, individually or combined.</p> <p>Of the 30 required credit hours, 18 must carry the BSC or MS designation.</p>	24

All courses taken for graduate credit hours must be numbered 400 and above, and no more than six credit hours can be at the 400 level. As all 400 level courses in the Department of Biological Sciences are also offered at the 500 level, 400 level courses can only be taken outside of the department. Such courses must be in departments that offer a graduate degree and they must carry appropriate extra work to be counted for graduate credit; in addition, the student must have the consent of his/her major advisor to take such courses for graduate credit and complete the necessary Graduate School form prior to enrollment in 400 level courses (see <http://bsc.ua.edu/forms-for-graduate-students>).

There are no preconditions to enrolling in BSC 599, and there are no limits to the number of hours of BSC 599 taken.

BSC 598 (Non-Thesis Research) may not be applied toward this degree.

Transfer credits: Up to 12 credit hours of graduate courses taken at other institutions and meeting Graduate School requirements may be transferred. Transfer credits are considered Pass/Fail for calculation of grade point average, but are included in the 19 required credit hours with a letter grade, provided they are from graded courses.

A Plan I M.S. coursework fill-in sheet to assist in tracking progress toward meeting course requirements is available on the Department of Biological Sciences website (<http://bsc.ua.edu/forms-for-graduate-students>) and in the Appendix of this manual.

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**Marine Science:** The guidelines cited above regarding credit-hour requirements are applicable.

**2. Residency Requirements:** A student's program at the M.S. level must provide sufficient association with the resident faculty to permit individual evaluation of the student's capabilities and achievements. Residency requirements will be determined by the student's Advisory Committee, with the approval of the Department Chair.

**3. M.S. Plan I Advisory Committee:** A student must form a M.S. Advisory Committee prior to their first annual review meeting. The first committee meeting is to be held after completion of the first semester of studies (by January 31<sup>st</sup> for students entering in the fall semester and by June 30<sup>th</sup> for students entering in the spring semester) to evaluate progress toward a degree. In subsequent years of study, the committee will meet prior to December 15<sup>th</sup> to review progress during the previous academic year (see Section **A.5** below). It will also meet as needed to administer all qualifying and final examinations, and to examine and approve the thesis.

The M.S. Advisory Committee must consist of at least three members. All members of a M.S. Advisory Committee must be members of the Graduate Faculty and one member must be from outside the student's major department and may be from another institution. The Department Chair is a non-voting, *ex officio* member of all graduate student committees.

The student's major professor will nominate M.S. Advisory Committee members to the Department Chair using the form "APPOINTMENT OR CHANGE OF MASTER'S THESIS COMMITTEE" (see <http://bsc.ua.edu/forms-for-graduate-students>). This nomination will be forwarded to the Dean of the Graduate School who will make formal appointments. Nominations of outside members from other institutions require the nominee's CV, a letter of support explaining the need for temporary graduate faculty status submitted by the student's major professor and a formal request for the temporary graduate faculty appointment from the Department Chair. Nominations should be submitted directly to the Department Chair, who will relay the formal request to the Graduate School.

**Marine Science:** The guidelines cited above for M.S. Advisory Committees are applicable. In addition, at least one member of the student's M.S. Advisory Committee must be a qualified member of the Biological Sciences faculty resident on the UA Tuscaloosa campus. If a student admitted as either a Masters in Biology or PhD in Biology wishes to change to a Masters in Marine Science program during their graduate career, the student will need to re-apply specifically to the Masters in Marine Science program. The Masters of Marine Science is considered to be an interdisciplinary degree and therefore is not housed solely within the Department of Biological Sciences which is why a separate application is required. Only an application and a statement outlining the rationale for changing the degree being sought are necessary; all supporting documents (e.g., test scores, transcripts) should be in place from the original application.

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### 4. Degree Time Line:

Students must complete the following tasks by the times indicated in order to maintain the highest priority for financial assistance and achieve an acceptable evaluation score at annual performance reviews (Superscript numbers indicate a hotlink to the appropriate form to be filed upon successful completion of a task).

- |  |  |
|--|--|
| 1. Rotation (if necessary)   | Complete prior to first annual review  |
| 2. Choose M.S. advisor   | Complete prior to first annual review  |
| 3. Choose M.S. Advisory Committee  | Complete prior to first annual review <sup>1</sup>   |
| 4. First semester review   | After completing the first semester of studies (by January 31 <sup>st</sup> for students entering in the fall semester and June 30 <sup>th</sup> for students entering in the spring semester)   |
| 5. M.S. research proposal  | Complete by end of second semester   |
| 6. First annual review   | Prior to December 15 <sup>th</sup> of 2nd academic year, as well as any subsequent year[s] of study  |
| 7. Coursework  | Complete by end of fourth semester   |
| 8. Apply for graduation  | No later than the first week of classes of the intended semester of graduation <sup>1</sup>  |
| 9. Submit Thesis to M.S. Advisory Committee  | At least 2 weeks prior to Oral Defense   |
| 10. Formal Departmental Seminar And Oral Defense   | Complete by end of the second year <sup>1</sup>  |
| 11. Submit Thesis (final form) to Graduate School  | At least 6 weeks prior to graduation – deadlines are listed on the Graduate School website:<br><a href="http://graduate.ua.edu/calendar/index.htm">http://graduate.ua.edu/calendar/index.htm</a> |
| 12. Submit the Committee Acceptance Form for Electronic Thesis or Dissertation and the Publication form for Electronic Thesis or Dissertation <sup>1</sup> | At least 7 days prior to commencement date   |

<sup>1</sup> <http://bsc.ua.edu/forms-for-graduate-students>

According to Graduate School policy, all requirements for the M.S. degree must be completed during the six calendar years immediately preceding the date on which the degree is to be awarded. The Department expectation is that M.S. students complete their degree in accordance with the Plan I M.S. timeline as outlined in this section. A Plan I M.S. timeline checklist is available on the Department of Biological Sciences website (<http://bsc.ua.edu/forms-for-graduate-students>) and at the end of this handbook. Each student's checklist will be updated at each annual progress review and appended to the report submitted by the advisor to the Department Chair.

**5. Annual Progress Review:** Each graduate student will meet annually prior to December 15<sup>th</sup> with her/his M.S. Advisory Committee for the purpose of reviewing the student's progress toward a degree during the previous academic year. First year students must meet with their

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committee after completing the first semester of studies (by January 31<sup>st</sup> for students entering in the fall semester and by June 30<sup>th</sup> for students entering in the spring semester). These evaluations are a part of the data used to establish priorities for assistantships. The student is expected to make a formal presentation to the committee during the annual meeting. This presentation shall include a description of progress made with respect to research and completion of other degree requirements. When the presentation has been completed, the student will be asked to leave the room and the committee shall then evaluate the student's progress. This evaluation will be in the form of a ranking from 1 to 5. Guidelines for these rankings are given below:

1. A score of 1 indicates the student's progress is unacceptable for reasons such as a GPA of less than 3.0 for the year in all (both graduate and undergraduate) courses attempted, insufficient research progress, or not completing the degree within time limits without an acceptable/approved reason.

2. A score of 2 must be given to students who have fallen behind schedule with respect to such requirements as formation of a committee, literature search and submission of a research proposal, writing of the thesis or dissertation, etc (see timeline under Section A.4). Little or no research progress during the year may also result in a score of 2. It may apply to a student receiving less than a B in a course during the previous year even though the (overall) GPA is 3.0 or higher. Committees awarding a score higher than 2 for students who have fallen behind schedule must provide a written rationale to the Graduate Committee and the Department Chair.

3. A score of 3 indicates that the student has made satisfactory research progress commensurate with his/her time in the program, has maintained at least a 3.0 GPA, and has met other requirements of the program (e.g., formed a committee, presented a research proposal, etc.) in a timely manner.

4. A score of 4 is assigned only when there is clear evidence of above average or unusual accomplishments. Accomplishments deserving of a score of 4 would include one of the following:

- a. Presentation of research at a national or international meeting.
- b. Submission of a research proposal for funding external to the University.
- c. Fellowship award external to the department.
- d. Any honor or award reflecting outstanding achievement.
- e. Having a junior authorship on a paper published or accepted/in press for publication.

5. A score of 5 is reserved for truly exceptional achievements made during the previous year. Accomplishments would include two or more of those listed under 4 or one of the following:

- a. Having a research proposal funded.
- b. Having a first-authored paper published or accepted/in press for publication.
- c. Receiving an invitation to speak at a symposium or conference.



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GRADUATE STUDENTS RECEIVING A RANKING OF 1 FOR ANY YEAR, OR TWO RANKINGS OF 2 FOR ANY TWO YEARS, WILL BE DISMISSED FROM THE BIOLOGICAL SCIENCES GRADUATE PROGRAM.

The major professor shall inform the student in writing of the committee's evaluation within 2 weeks of the meeting. A copy of this report shall be sent to the Department Chair and the student's committee members. If the student is progressing satisfactorily toward a degree, no further action is necessary. If the committee feels that the student is not making satisfactory progress, the student shall be informed in writing of specific reasons and of the committee's recommendation(s) for correcting the deficiencies.

Since the committee evaluations are taken into consideration when assigning teaching assistantships, it is imperative that they be completed and submitted to the Department Chair by January 10th of each year. It is the responsibility of the student and committee to see that this is done. Failure to complete evaluations by this date will result in the student not being considered for graduate teaching assistantships.

**6. M.S. Research Proposal:** A formal research proposal is required and should be completed by the end of the student's second semester in the program. This proposal should include:

1. A full but concise statement of the specific goals of the research.
2. A review of the relevant literature to place the proposed work in a solid theoretical context.
3. A discussion of the significance of the proposed research and how it addresses a novel question.
4. A description of the experimental design, including experimental methods, procedures, and methods used in analysis and interpretation of results.
5. Literature citations.
6. Budget

A new proposal will be required if the thesis research changes significantly. The proposal should be submitted to and approved by the student's M.S. Advisory Committee not later than the end of the second semester.

**7. Research Expectations:** A formal thesis, prepared in accordance with university regulations, is required. The thesis shall be based upon research approved by the student's M.S. Advisory Committee and conducted under the supervision of the major professor. See <http://www.graduate.ua.edu/etd/manual/index.html> for formatting and submission guidelines.

**8. Formal Departmental Seminar and Oral Defense:** A publicly announced formal departmental seminar concerning the student's research is required. The seminar is scheduled immediately preceding the final oral examination. All students are required to notify departmental office personnel of the date, time and room location of their formal seminar a minimum of **14 days prior to the seminar**. A title and an abstract must be submitted to the departmental office at the time of seminar notification so that a public

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announcement can be made. In addition, a copy of the final draft of your thesis must be made available in the departmental office for those wishing to review it. The thesis copy will be kept at the front desk during the 2-week period. When you deliver your draft to the office, you will be required to enter it into a log book which will be kept in the office. Failure to meet any of these requirements will result in a delay of the thesis defense.

All students must pass a final oral examination related to their thesis. Final oral examination questions may also include other subjects beyond the student's research that the M.S. Advisory Committee or other faculty consider relevant. Final oral examinations for the M.S. Plan I must be taken not less than six weeks prior to the proposed graduation date (Note: This deadline does not include time required for revision of the thesis after the defense). The outside member of the student's committee must attend and participate in the final defense; this may be a virtual presence if the member can see and hear the presentation and actively participate in questioning of the candidate.

All departmental faculty have the right to attend the oral defense, and have the right to ask questions of the student that are relevant to the goals of the examination. Only faculty on the student's committee may vote on whether the student has passed or failed the examination.

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### **B. M.S. Degree, Plan II (without thesis)**

#### **1. Course Requirements:**

A minimum of 30 credit hours of graduate coursework is required including:

<b>Coursework and Requirements</b>	<b>Credit Hours</b>
<ul style="list-style-type: none"><li>• At least 25 credit hours with a letter grade (i.e., not Pass/Fail)</li><li>• A maximum of 6 credit hours with a letter grade may be taken from BSC 507 (Research Techniques in Biology) and/or BSC 607 (Advanced Research Techniques in Biology) <u>combined</u> by students selecting options A or B as their culminating “capstone” experience (see section 6).</li><li>• <b>NOTE:</b> Up to 5 hours of Pass/Fail credit can be applied toward fulfillment of degree requirements. Pass/Fail credit hours can include up to a total of 5 credit hours of BSC 598 and/or 4 credit hours of BSC 602, BSC 605, or BSC 606, individually or combined.</li></ul> <p>Of the 30 required credit hours, 18 must carry the BSC or MS designation.</p>	<b>30</b>

All courses taken for graduate credit hours must be numbered 400 and above, and no more than six hours can be at the 400-level. As all 400-level courses in the Department of Biological Sciences are also offered at the 500 level, 400-level courses can only be taken outside of the department. Such courses must be in departments that offer a graduate degree and they must carry appropriate extra work to be counted for graduate credit; in addition, the student must have the consent of his/her major advisor to take such courses for graduate credit and complete the necessary Graduate School form prior to enrolling in 400-level courses.

Candidates for the M.S. degree under Plan II must complete a culminating or “capstone” experience (see section **6.A**).

BSC 599 may not be applied toward this degree.

Transfer credits: Up to 12 credit hours of graduate courses taken at other institutions and meeting Graduate School requirements may be transferred. Transfer credits are considered Pass/Fail for calculation of grade point average, but are included in the 25 required graded course hours, provided they are from graded courses.

A Plan II Masters Course Checklist to assist in tracking progress toward meeting course requirements is available on the Department of Biological Sciences website (<http://bsc.ua.edu/forms-for-graduate-students>) and in the appendix of this document.

**Marine Science:** The guidelines cited above regarding credit-hour requirements are applicable.

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**2. Residency Requirements:** A student's program at the M.S. level must provide sufficient association with the resident faculty to permit individual evaluation of the student's capabilities and achievements. Residency requirements will be determined by the student's Advisory Committee, with the approval of the Department Chair.

**3. M.S. Plan II Advisory Committee:** A student must form a M.S. Advisory Committee prior to their first annual review meeting. The first committee meeting is to be held after completion of the first semester of studies (by January 31<sup>st</sup> for students entering in the fall semester and by June 30<sup>th</sup> for students entering in the spring semester) to evaluate progress toward a degree. In subsequent years of study, the committee will meet prior to December 15<sup>th</sup> to review progress during the previous academic year (see Section **B.5** below). It will also meet as needed to administer all qualifying and final examinations, and to examine and approve the culmination Capstone Experience.

The M.S. Plan II Advisory Committee must consist of at least three members. All members of a graduate advisory committee must be members of the Graduate Faculty. Nominations of outside members from other institutions require the nominee's CV, a letter of support explaining the need for temporary graduate faculty status submitted by the student's major professor and a formal request for the temporary graduate faculty appointment from the Department Chair. Nominations should be submitted directly to the Department Chair, who will relay the formal request to the Graduate School. The Department Chair is a non-voting, *ex officio* member of all graduate student committees.<sup>7</sup>

The student's major professor will nominate M.S. Advisory Committee members to the Department Chair using the form "APPOINTMENT OR CHANGE OF MASTER'S THESIS COMMITTEE" (see <http://bsc.ua.edu/forms-for-graduate-students>). This nomination will be forwarded to the Dean of the Graduate School who will make formal appointments.

**Marine Science:** The guidelines cited above for a M.S. Advisory Committee are applicable. In addition, at least one member of the student's M.S. Advisory Committee must be a qualified member of the Biological Sciences faculty at the Tuscaloosa campus.

### 4. Degree Time Line:

Students must complete the following tasks by the times indicated in order to maintain the highest priority for financial assistance and achieve an acceptable evaluation score at annual performance reviews (Superscript numbers indicate a hotlink to the appropriate form to be filed upon successful completion of a task).

- |                                   |  |
|-----------------------------------|--|
| 1. Rotation (if necessary)        | Complete prior to first annual review  |
| 2. Choose M.S. Advisor            | Complete prior to first annual review  |
| 3. Choose M.S. Advisory Committee | Complete prior to first annual review <sup>1</sup>   |
| 4. First semester review          | After completing the first semester of studies (by January 31 <sup>st</sup> for students entering in the fall semester and June 30 <sup>th</sup> for students entering in the spring semester) |

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- |   |   |
|---|---|
| 5. Capstone Experience proposal   | Complete by end of second semester  |
| 6. First annual review  | Prior to December 15 <sup>th</sup> of 2 <sup>nd</sup> academic year, as well as any subsequent year[s] of study |
| 7. Coursework   | Complete by end of fourth semester  |
| 8. Apply for graduation   | No later than the first week of classes of the intended semester of graduation <sup>1</sup>                     |
| 9. Submit Capstone Experience report  | At least 2 weeks prior to final Oral Exam   |
| 10. Formal Departmental Seminar and Oral Exam   | Complete by end of the second year  |
| 11. Submit Completion of Requirements for the Plan II M.S. Degree Documentation Form <sup>1</sup> | After successful completion of final Oral Exam (at least 7 days prior to Commencement)                          |

<sup>1</sup> <http://bsc.ua.edu/forms-for-graduate-students>.

According to Graduate School policy, all requirements for the M.S. degree must be completed during the six calendar years immediately preceding the date on which the degree is to be awarded. The Department expectation is that M.S. students complete their degree in accordance with the Plan II M.S. timeline as outlined in this section. A Plan II Master's timeline checklist is available on the Department of Biological Sciences website (<http://bsc.ua.edu/forms-for-graduate-students>) and at the end of this handbook. Each student's checklist will be updated at each annual progress review and appended to the report submitted by the advisor to the Department Chair.

**5. Annual Progress Reviews:** Each graduate student will meet annually prior to December 15<sup>th</sup> with his/her M.S. Advisory Committee for the purpose of reviewing the student's progress toward a degree during the past year. First year students must meet with their committee after completing the first semester of studies (by January 31<sup>st</sup> for students entering in the fall semester and by June 30<sup>th</sup> for students entering in the spring semester). These evaluations are a part of the data used to establish priorities for assistantships. The student is expected to make a formal presentation to the committee during the annual meeting. This presentation shall include a description of progress made with respect to research and completion of other degree requirements. When the presentation has been completed, the student will be asked to leave the room and the committee shall then evaluate the student's progress. This evaluation will be in the form of a ranking from 1 to 5. Guidelines for these rankings are given below:

1. A score of 1 indicates the student's progress is unacceptable for reasons such as a GPA of less than 3.0 for the year in all (both graduate and undergraduate) courses attempted, insufficient research progress, or not completing the degree within time limits without an acceptable/approved reason.

2. A score of 2 must be given to students who have fallen behind schedule with respect to such requirements as formation of a committee, literature search and submission of a research proposal, writing of the thesis or dissertation, etc (see

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timeline under Section B.4). Little or no research progress during the year may also result in a score of 2. It may apply to a student receiving less than a B in a course during the previous year even though the (overall) GPA is 3.0 or higher. Committees awarding a score higher than 2 for students who have fallen behind schedule must provide a written rationale to the Graduate Committee and the Department Chair.

3. A score of 3 indicates that the student has made satisfactory research progress commensurate with his/her time in the program, has maintained at least a 3.0 GPA, and has met other requirements of the program (e.g., formed a committee, presented a research proposal, etc.) in a timely manner.

4. A score of 4 is assigned only when there is clear evidence of above average or unusual accomplishments. Accomplishments deserving of a score of 4 would include one of the following:

- a. Presentation of research at a national or international meeting.
- b. Submission of a research proposal for funding external to the University.
- c. Fellowship award external to the department.
- d. Any honor or award reflecting outstanding achievement.
- e. Having a junior authorship on a paper published or accepted/in press for publication.

5. A score of 5 is reserved for truly exceptional achievements made during the previous year. Accomplishments would include two or more of those listed under 4 or one of the following:

- a. Having a research proposal funded.
- b. Having a first-authored paper published or accepted/in press for publication.
- c. Receiving an invitation to speak at a symposium or conference.

**GRADUATE STUDENTS RECEIVING A RANKING OF 1 FOR ANY YEAR, OR TWO RANKINGS OF 2 FOR ANY TWO YEARS, WILL BE DISMISSED FROM THE BIOLOGICAL SCIENCES GRADUATE PROGRAM.**

The major professor shall inform the student in writing of the committee's evaluation within 2 weeks of the meeting. A copy of this report shall be sent to the Department Chair and the student's committee members. If the student is progressing satisfactorily toward a degree, no further action is necessary. If the committee feels that the student is not making satisfactory progress, the student shall be informed in writing of specific reasons for this opinion and of the committee's recommendation for rectification. A copy will be sent to the Graduate School.

Since the committee evaluations are used in the establishment of priorities for assistantships, it is imperative that they be completed and given to the Department Chair by January 10th of each year. It is the responsibility of the student and committee to see that this is done. Failure to complete evaluations by this date may result in a value of "0" being used in calculations for assistantship priorities.

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**6. Culminating “Capstone” Experience:** In addition to earning a minimum of 30 semester hours of credit, candidates for the M.S. Plan II degree will be required to complete one or more of the following:

- A. Non-thesis research project.** This requirement is met by completing a research project under the supervision and to the satisfaction of the student's M.S. Advisory Committee. The M.S. Advisory Committee determines the nature and extent of the research project. The student must prepare a report, present a public seminar, and pass an oral exam on this research. The oral exam will take place immediately following the public seminar. The research report must be submitted to the M.S. Advisory Committee for review at least 14 days prior to the public defense and oral exam. In addition, a copy of the research report must be submitted to the department office and the public defense announced at least 14 days prior to the defense date. Students selecting this option may apply up to 6 hours of BSC 507/607 and up to 5 hours of BSC 598 toward fulfillment of requirements for the degree.
- B. Research practicum.** This requirement is met by earning 6 credit hours of BSC 507 (Research Techniques in Biology) under the supervision and to the satisfaction of the student's M.S. Advisory Committee. The M.S. Advisory Committee determines the nature and extent of the BSC 507 research project. Examples of research practicum experiences include, but are not limited to, conducting research in the M.S. Advisor's laboratory, at a regional research center (e.g., HudsonAlpha Institute for Biotechnology, Joseph W. Jones Ecological Research Center), or at a national lab (e.g., National Institutes of Health). The student must prepare a report, present a formal public seminar, and pass an oral exam on the research experience. The oral exam will take place immediately following the public seminar. The research report must be submitted to the M.S. Advisory Committee for review at least 14 days prior to the oral exam. In addition, a copy of the research report must be submitted to the Department office and the public defense announced at least 14 days prior to the defense date. Students selecting this option may apply up to 6 hours of BSC 507/607 toward fulfillment of requirements for the M.S. degree. BSC 598 may not be applied toward fulfillment of requirements for the degree under this option.
- C. In-depth topical literature survey.** Students selecting this option must prepare a formal paper and pass an oral exam on a research topic approved by the M.S. Advisory Committee. Students selecting this option may not apply BSC 507, BSC 598, BSC 607, or BSC 698 toward fulfillment of requirements for the degree.

**7. Culminating “Capstone” Experience Proposal:** A formal Capstone Experience proposal is required and should be completed by the end of the student's second semester in the program. This proposal should include a full but concise statement of the specific goals of the Capstone Experience. M.S. Plan II option A candidates must also include in their proposals the following:

1. A review of the relevant literature to place the proposed work in a solid theoretical context.

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2. A discussion of the significance of the proposed research and how it addresses a novel question.
3. A description of the experimental design, including experimental methods, procedures, and methods used in analysis and interpretation of results.
4. Literature citations.
5. Budget

The proposal should be submitted to and approved by the student's M.S. Advisory Committee no later than the end of the second semester. A new proposal will be required if the non-thesis research changes significantly.

**8. Formal Departmental Seminar (M.S. Plan II Options A and B only):** A publicly announced formal departmental seminar of the student's research is required for students selecting M.S. Plan II Options A and B. The seminar is scheduled immediately preceding the final oral examination. All students are required to notify departmental office personnel of the date, time and room location of their formal seminar a minimum of **14 days prior to the seminar**. A title and an abstract must be submitted to the departmental office at the time of seminar notification so that a public announcement can be made. In addition, a copy of the final draft of your written report must be made available in the departmental office for those wishing to review it. The report copy will be kept at the front desk during the 2-week period. When you deliver your draft to the office, you will be required to enter it into a logbook that will be kept in the office. Failure to meet any of these requirements will result in a delay of the Plan II M.S. defense.

**9. Final Oral Examination:** All M.S. Plan II students must pass a final oral examination related to their research or literature survey topic. Final oral examination questions may also include other subjects beyond the student's research that the M.S. Advisory Committee or other faculty consider to be relevant. Final oral examinations must be taken not less than two weeks prior to the proposed graduation date. All committee members must attend and participate in the oral examination, either in-person or by electronic means (e.g., Skype). All students are required to notify the departmental office of their final oral examination 14 days prior to the exam.

All departmental faculty have the right to attend the oral examination, and have the right to ask questions of the student that are relevant to the goals of the examination. Only faculty on the student's committee may vote on whether the student has passed or failed the examination.

***For M.S. Plan II as a transitional degree (pre-Ph.D.):*** In order to qualify for the M.S. degree, Ph.D. students must fulfill all requirements of the M.S. Plan II culminating "capstone" experience option A, namely (i) submit a written report detailing the research experience, (ii) present a formal departmental seminar and (iii) pass a final oral examination). Research applied toward fulfillment of the M.S. Plan II degree requirements may not be applied toward fulfillment of requirements for the Ph.D. degree.



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### C. Ph.D. Degree

#### 1. Course requirements:

At least 72 credit hours of graduate coursework are required including:

Coursework and Requirements	Credit Hours
BSC 699 (Dissertation Research)*	24
At least 39 <u>graded</u> semester hours (i.e., not Pass/Fail), which may include: <ul style="list-style-type: none"><li>• Up to 6 graded hours of BSC 507 (Research Techniques in Biology)</li><li>• Up to 6 graded hours of BSC 607 (Advanced Research Techniques in Biology)</li><li>• Letter graded courses including BSC 695 (Special Topics)</li></ul> Up to 9 hours of Pass/Fail credit can be applied toward fulfillment of degree requirements. Pass/Fail hours can include BSC 698 (Non-Dissertation Research) and up to a total of 4 semester hours of BSC 602, BSC 605, or BSC 606, individually or combined (continuous enrollment in BSC 602, BSC 605 or BSC 606 is required; see III.D). <b>NOTE:</b> Of the 48 semester hours <u>other than BSC 699</u> , 24 must carry the BSC designation.	48

**\* All students must pass the Preliminary Examination and gain degree candidacy before enrolling in BSC 699. Once a student has enrolled in BSC 699, they must continue to enroll in at least 3 semester hours of BSC 699 every semester until they graduate.**

As per Section 4.11 of the Graduate School Catalog, all doctoral students must have a completed Plan of Study approved by the Graduate School no later than the semester during which the student will complete 30 semester hours of UA and/or transfer credit toward the doctoral degree. Otherwise a “hold” may be placed on future course registrations (see <http://bsc.ua.edu/forms-for-graduate-students>).

All graduate credits taken in the doctoral program must be in courses numbered 500 or above.

BSC 599 may not be applied toward this degree.

A Ph.D. coursework fill-in sheet to assist in tracking progress toward meeting course requirements is available on the Department of Biological Sciences website (<http://bsc.ua.edu/forms-for-graduate-students>) and at the end of this document.

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Transfer credits: With the approval of the student's Ph.D. Advisory Committee and the Dean of the Graduate School, up to 24 of the required course hours may be transferred from another institution. Submit the form, "REQUEST FOR TRANSFER OF GRADUATE CREDIT" (see <http://bsc.ua.edu/forms-for-graduate-students>) to the Graduate School during the first semester enrolled at the University of Alabama. If the student earned an M.S. at the University of Alabama, all applicable hours (i.e., course hours for which graduate credit has been received in the same department or in a closely affiliated department, but not including BSC 598 or BSC 599) may transfer to the Ph.D. program. The number of hours that qualify for transfer is at the discretion of the Department of Biological Sciences, as recommended by the student's Ph.D. Advisory Committee and as approved by the Dean of the Graduate School. Subject to the approval of the student's Ph.D. Advisory Committee, graduate courses in allied departments may be taken to meet the remainder of the requirements. Transfer credits are considered Pass/Fail for calculation of grade point average, but are included in the 48 required graded course hours, provided they are from graded courses.

**2. Residency:** The student must spend an academic year (two semesters) in continuous residence on the campus of The University of Alabama as a full-time student in the Graduate School. However, the student can meet the requirement with any one of the following four enrollment options:

- a full-time fall semester plus full-time enrollment the next spring;

- a full-time summer (consisting of 2 full-time summer terms) plus the following full-time fall semester;

- a full-time spring semester plus the next full-time summer semester (consisting of 2 full-time summer terms); or

- a full-time spring semester plus the following full-time fall semester.

To meet this requirement, only non-dissertation coursework can be applied. Dissertation or thesis research (BSC 599 or BSC 699) cannot be used. Distance-learning courses delivered online or by any other distance-learning format may not be used to satisfy the doctoral residency requirement.

The minimum period in which the doctoral degree can be earned is three full academic years of graduate study after completion of a baccalaureate degree, although in most disciplines the period is longer. Graduate teaching assistants (GTA) or graduate research assistants (GRA) whose work assignments are 3 semester hours (i.e. 10-12 work hours or 0.25 FTE) per week or more should expect to spend more than the minimum period of three academic years to earn a doctoral degree.

**3. Ph.D. Advisory Committee (Doctoral Dissertation Committee):** A student must form a Ph.D. Advisory Committee prior to their first semester review meeting. The first committee meeting is to be held after completion of the first semester of studies (by January 31<sup>st</sup> for students entering in the fall semester and by June 30<sup>th</sup> for students entering in the spring semester) to evaluate progress toward a degree. In subsequent years of study, the committee will meet prior to December 15<sup>th</sup> to review progress during the previous academic year (see Section **A.5** below). It will also meet as needed to administer all qualifying and final examinations, and to examine and approve the dissertation.

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The Ph.D. Advisory Committee must consist of at least five members. All members of a Ph.D. Advisory Committee must be members of the Graduate Faculty and one member must be from outside the student's major department and may be from another research institution. The Department Chair is a non-voting, *ex officio* member of all graduate student committees.

The student's major professor will nominate Ph.D. Advisory Committee members to the Department Chair using the form "APPOINTMENT OR CHANGE OF DOCTORAL DISSERTATION COMMITTEE" (see <http://bsc.ua.edu/forms-for-graduate-students>). This nomination will be forwarded to the Dean of the Graduate School who will make formal appointments. Nominations of outside members from other institutions require the nominee's CV, a letter of support explaining the need for temporary graduate faculty status submitted by the student's major professor and a formal request for the temporary graduate faculty appointment from the department chair. Nominations should be submitted directly to the Department Chair, who will relay the formal request to the Graduate School.

### 4. Degree Time Line:

Students must complete the following tasks by the times indicated in order to maintain the highest priority for financial assistance and achieve an acceptable evaluation score at annual performance reviews (Superscript numbers indicate a hotlink to the appropriate form to be filed upon successful completion of a task).

- |   |  |
|---|--|
| 1. Rotation (if requested/recommended)              | Complete prior to first annual review  |
| 2. Choose a research mentor                         | Complete prior to first annual review  |
| 3. Choose a Ph.D. Advisory Committee                | Complete prior to first annual review <sup>1</sup>   |
| 4. Plan of Study<br>(no later than the semester     | Present to committee at 1 <sup>st</sup> annual evaluation during which the student will complete 30 semester hours of UA and/or transfer credit; submit form <sup>1</sup> )                    |
| 5. First semester review                            | After completing the first semester of studies (by January 31 <sup>st</sup> for students entering in the fall semester and June 30 <sup>th</sup> for students entering in the spring semester) |
| 6. Dissertation research proposal                   | Present to committee for approval prior to or during 2 <sup>nd</sup> annual review   |
| 7. Annual reviews                                   | Prior to December 15 <sup>th</sup> each year of study  |
| 8. Preliminary exams                                | Complete by end of fifth semester <sup>1</sup>   |
| 9. Take Dissertation credits (BSC 699)              | Beginning of sixth semester (but not before completion of preliminary exams)   |
| 10. Apply for graduation                            | No later than the first week of classes of the intended semester of graduation <sup>1</sup>  |
| 11. Submit Dissertation to Committee and Department | At least 2 weeks prior to Oral Defense   |
| 12. Formal Departmental Seminar and Oral Defense    | Complete by end of the fourth or fifth year <sup>1</sup> (depending on highest degree upon entering program)   |

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13. Submit Dissertation (final form)  
to Graduate School

Submit electronically to the Graduate School along with the Committee Acceptance Form for Electronic Thesis or Dissertation and the Publication form for Electronic Thesis or Dissertation  
(<http://graduate.ua.edu/etd/index.html>)

<sup>1</sup> <http://bsc.ua.edu/forms-for-graduate-students>

Once the preliminary exam is completed, the **Continuous Dissertation Registration for Doctoral Students** requirement applies. Once a student has met the requirements for admission to candidacy, received approval for the dissertation research proposal, or initiated enrollment in 699 (dissertation research for a doctoral degree), the student must pursue completion of the dissertation without interruption by enrolling each fall and spring semester of the academic year for at least 3 hours of dissertation research. See Section 4.6 of the Graduate School Catalog for details.

According to Graduate School policy, all requirements for the doctoral degree must be completed within a period of seven years following admission to the doctoral program. Credits earned towards a M.S. degree may be applied to the doctoral degree if they were earned during the 6-year period prior to admission to the doctoral program. If a student fails to register for three consecutive years, the student must reapply for admission. The Department expectation is that Ph.D. students complete their degree in accordance with the Ph.D. timeline as outlined in this section. A Ph.D. timeline checklist is available on the Department of Biological Sciences website (<http://bsc.ua.edu/forms-for-graduate-students>) and at the end of this handbook. Each student's checklist will be updated at each annual progress review and appended to the report submitted by the advisor to the Department Chair.

**5. Annual Progress Reviews:** Each graduate student will meet annually prior to December 15<sup>th</sup> with his/her Ph.D. Advisory Committee for the purpose of reviewing the student's progress toward a degree during the past year. First year students must meet with their committee after completing the first semester of studies (by January 31<sup>st</sup> for students entering in the fall semester and by June 30<sup>th</sup> for students entering in the spring semester). These evaluations are a part of the data used to establish priorities for assistantships. The student is expected to make a formal presentation to the committee during the annual meeting. This presentation shall include a description of progress made with respect to research and completion of other degree requirements. When the presentation has been completed, the student will be asked to leave the room and the committee shall then evaluate the student's progress. This evaluation will be in the form of a ranking from 1 (lowest) to 5 (highest). Guidelines for these rankings are given below:

1. A score of 1 indicates the student's progress is unacceptable for reasons such as a GPA of less than 3.0 for the year in all (both graduate and undergraduate) courses attempted, insufficient research progress, a failing grade on the preliminary examination followed by a failure to take a second test within three months, failing of

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preliminary examination twice, or not completing the degree within time limits without an acceptable/approved reason.

2. A score of 2 must be given to students who have fallen behind schedule with respect to such requirements as formation of a committee, literature search and submission of a research proposal, writing of the thesis or dissertation, etc (see timeline under Section C.4). Little or no research progress during the year may also result in a score of 2. It may apply to a student receiving less than a B in a course during the previous year even though the (overall) GPA is 3.0 or higher. Committees awarding a score higher than 2 for students who have fallen behind schedule must provide a written rationale to the Graduate Committee and the Department Chair.

3. A score of 3 indicates that the student has made satisfactory research progress commensurate with his/her time in the program, has maintained at least a 3.0 GPA, and has met other requirements of the program (e.g., formed a committee, presented a research proposal, etc.) in a timely manner.

4. A score of 4 is assigned only when there is clear evidence of above average or unusual accomplishments. Accomplishments deserving of a score of 4 would include one of the following:

- a. Presentation of research at a national or international meeting.
- b. Submission of a research proposal for funding external to the University.
- c. Fellowship award external to the department.
- d. Any honor or award reflecting outstanding achievement.
- e. Having a junior authorship on a paper published or accepted/in press for publication.

5. A score of 5 is reserved for truly exceptional achievements made during the previous year. Accomplishments would include two or more of those listed under 4 or one of the following:

- a. Having a research proposal funded.
- b. Having a first-authored paper published or accepted/in press for publication.
- c. Receiving an invitation to speak at a symposium or conference.

**GRADUATE STUDENTS RECEIVING A RANKING OF 1 FOR ANY YEAR, OR TWO RANKINGS OF 2 FOR ANY TWO YEARS, WILL BE DISMISSED FROM THE BIOLOGICAL SCIENCES GRADUATE PROGRAM.**

The major professor shall inform the student in writing of the committee's evaluation within 2 weeks of the meeting. A copy of this report shall be sent to the Department Chair and the student's committee members. If the student is progressing satisfactorily toward a degree, no further action is necessary. If the committee feels that the student is not making satisfactory progress, the student shall be informed in writing of specific reasons for this opinion and of the committee's recommendation for rectification. A copy will be sent to the Graduate School.

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Since the committee evaluations are used in the establishment of priorities for assistantships, it is imperative that they be completed and given to the Department Chair by January 10th of each year. It is the responsibility of the student and committee to see that this is done. Failure to complete evaluations by this date may result in a value of "0" being used in calculations for assistantship priorities.

**6. Dissertation research proposal:** A formal research proposal is required. The proposal should be defended no later than the second annual progress review held in the fall semester of the student's third year in the Graduate Program. A new proposal will be required if the dissertation research changes significantly. This proposal should include:

1. A full but concise statement of the specific goals of the research.
2. A review of the relevant literature to place the proposed work in a solid theoretical context.
3. A discussion of the significance of the proposed research and how it addresses a novel question.
4. A description of the experimental design, including experimental methods, procedures, and methods used in analysis and interpretation of results.
5. Literature citations.
6. Budget.

**7. Preliminary Exams:** Ph.D. students must pass both a Written Preliminary Exam and an Oral Preliminary Exam before candidacy is granted. Both Preliminary Exams should be completed prior to finishing the student's sixth semester in the Graduate Program.

**a. Written Preliminary Exam:** The department uses two forms of the written exam. The advisor must approve which exam the student will take.

**i. Option 1 – Traditional -** The examination shall be arranged and administered by the major professor. Each member of the Ph.D. Advisory Committee shall contribute five questions. The outside member of the committee is encouraged but is not required to participate in the exam. However, if they do not, then the student's committee for the purpose of this exam must consist of at least 5 members from inside the department. The examination shall be administered over no more than 14 consecutive days with one day allowed for each set of questions. Each answer will be graded "Pass" or "Fail." Questions may involve intellectual synthesis as well as basic concepts. Each examiner will award grades without prior knowledge of the student's performance on other parts of the examination and report the results to the student's major professor within five days of the examination. The student must pass at least 19 of 25 questions, or 76% of the questions asked in cases of committees with more than five members.

**ii. Option 2 – Proposal based -** The examination shall be arranged and administered by the major professor. Each member of the Ph.D. Advisory Committee shall contribute to the review of the proposal. The outside member of the committee is encouraged but is not required to review the proposal. However, if they do not, then the student's committee for the

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purpose of this exam must consist of at least 5 members from inside the department.

Students will be expected to demonstrate the following:

1. The ability to identify a substantive proposal topic
2. The ability to formulate valid and testable hypotheses
3. The ability to identify the importance of and justification for the proposed research, by preparing a comprehensive review of related research literature and presenting the proposed project in that context
4. The ability to prepare a sound research plan that includes both appropriate techniques and approaches suitable for the testing of the hypotheses and alternative strategies and hypotheses.

The procedures for the proposal-based Written Preliminary Exam are:

1. Students should submit to their committees one or more topics, as required by their committees, with a one-paragraph justification of the topic. The committee will approve proposal topics prior to initiation of proposal preparation. If a submitted topic is not acceptable, the student will be asked to revise and resubmit topics.
2. The topics may be completely distinct from ongoing research in the student's lab, may build upon current or previous work in the lab, or may be the topic for the student's doctoral research, **as long as the proposed research demonstrates scientific independence and does not simply reproduce an experimental plan already proposed in the doctoral adviser's research grants.**
3. The term of the proposed research should be consistent with federal funding opportunities, contingent on committee approval.
4. The proposal should be written following the format of research proposals described in Appendix 7. Failure to comply with any formatting requirement will result in return of the proposal to the student. Corrected copies must be resubmitted one day later.
5. Students will have a maximum of two months to prepare the proposal after the committee's notification of topic selection.

Evaluation of the proposal will be based on the following considerations:

1. Scope of the proposal (10%). Is the research topic novel and important? Is the proposed project appropriate for the approved term (e.g. 3 years, 5 years)?
2. Background (30%). Is the literature survey comprehensive and appropriate? Does the literature survey identify a problem or series of problems that justifies the direction of the proposal?
3. Experimental plan (40%). Are there clearly stated hypotheses for each section, or at least clearly stated expectations of experimental outcomes? Are the proposed experiments appropriate tests of the hypotheses? Does the author have realistic expectations of the experimental methods? Are alternate hypotheses and experimental approaches proposed to cover the possibilities that: (i) the primary approaches prove to be inappropriate, (ii) the primary approaches disprove the hypotheses?
4. Presentation (20%). Is the proposal well organized and clearly written?

Each of the above evaluation criteria will be assigned a score of 1-5 as follows:

- 1 – Outstanding
- 2 – Excellent

## Biological Sciences Graduate Student Handbook

3 – Good/Average

4 – Fair

5 – Poor

An *average weighted cumulative score* of no greater than 3.0 must be earned in order to pass the proposal-based written exam.

For the written examination (either option), the student must demonstrate proficiency in technical writing. Note that if an answer is not formulated in a technically acceptable writing format it may be marked as a fail.

The Advisory Committee is expected to notify the student of their preliminary written exam score within 30 days after submission of the exam to the committee. *The submitted exam must be graded by the Advisory Committee. It is against program policy to permit a student to revise the submitted exam in any fashion prior to grading it.* The final graded version of the written exam and a Biological Sciences Ph.D. Candidacy Exam Evaluation Form (<http://bsc.ua.edu/forms-for-graduate-students>) should be placed in the student's official departmental file.

A student who fails the traditional written exam will be allowed to retake the entire examination (i.e., five questions from each committee member) once. Any second attempt must be made within three months of notification of failure of the first attempt. A student who fails the proposal-based written exam will be allowed to revise the proposal once. The revision must be submitted to the Ph.D. advisory committee within two months of notification of failure of the first attempt.

### **b. Oral Preliminary Exam:**

To qualify to take the Oral Preliminary Exam the student must have passed the Written Preliminary Exam. The Oral Preliminary Exam will follow the written portion by not more than two weeks from the date of notification of passing the Written Preliminary Examination. It is a comprehensive examination intended to determine the student's knowledge of basic principles of biological sciences, as well as specific knowledge of the student's research area. When a student has prepared a research proposal as their Written Preliminary Exam (Option 2), the student may be questioned on that proposal as well as on basic and specific information pertaining to their field of study. The student's entire Ph.D. Advisory Committee should attend the Oral Preliminary Exam and constitutes the voting committee regarding the passage or failure of the examination (virtual attendance is acceptable for outside members).

The graduate student, the Department Chair, and the Dean of the Graduate School shall be notified by the major professor, in writing, of the results of the preliminary exam within a week after the exam is completed via the DOCTORAL QUALIFYING EXAMINATION form (see <http://bsc.ua.edu/forms-for-graduate-students>).

Upon successful completion of written and oral preliminary exams, file form ADMISSION TO CANDIDACY FOR DOCTORAL DEGREE (see <http://bsc.ua.edu/forms-for-graduate-students>) with the department office for routing to the Graduate School. The student is now eligible to enroll in BSC 699 Research Related to Dissertation.



**8. Research Expectations:** All Ph.D. students are expected to make a meaningful contribution to their chosen research area. Prior to their dissertation defense, all students in the Ph.D. program are expected to submit for publication to a peer-reviewed journal at least one first-author manuscript containing data produced by the student during enrollment in the Ph.D. program. Requests for exceptions to this policy must be endorsed by a student's Supervisory Committee and approved by the BSC Graduate Committee and Department Chair prior to the dissertation defense.

**9. Formal Departmental Seminar and Oral Defense:** A publicly announced formal departmental seminar of the student's research is required. The seminar is scheduled immediately preceding the final oral examination. All students are required to notify departmental office personnel of the date, time and room location of their formal seminar a minimum of **14 days prior to the seminar**. A title and an abstract must be submitted to the departmental office at the time of seminar notification so that a public announcement can be made. In addition, a copy of the final draft of your dissertation must be made available in the departmental office for those wishing to review it. The dissertation copy will be kept at the front desk during the 2-week period. When you deliver your draft to the office, you will be required to enter it into a log book which will be kept in the office. Failure to meet any of these requirements will result in a delay of the dissertation defense.

All students must pass a final oral examination related to their dissertation. Final oral examination questions may also include other subjects beyond the student's research that the Ph.D. Advisory Committee or other faculty deem relevant. Final oral examinations for the Ph.D. must be taken not less than six weeks prior to the proposed graduation date. The outside member of the student's committee must attend and participate in the final defense; this may be a virtual presence if the member can see and hear the presentation and actively participate in questioning of the candidate. All departmental faculty have the right to attend the oral defense, and have the right to ask questions of the student that are relevant to the goals of the examination. Only faculty on the student's committee may vote on whether the student has passed or failed the examination.

## Changing Programs

### ***Conditional M.S. to M.S. and Conditional Ph.D. to Ph.D.***

All students admitted conditionally to the Biological Sciences Graduate Program must maintain a 3.0 GPA for the first 12 hours of courses (both undergraduate and graduate) taken as a student in the Department of Biological Sciences at The University of Alabama. All hours taken in the semester in which the student reaches 12 hours will be considered even if the total exceeds 12 hours. In addition, the student must maintain a 3.0 in the first 12 hours of graduate courses. Failure to meet either of these requirements will result in dismissal from the program. When a student satisfies both of these conditions, the student is then given the status of a regularly admitted student.

### ***M.S. to Ph.D.***

Students may apply to enter the Ph.D. program while currently enrolled in the M.S. program without completing the M.S. if: 1) they entered under a regular admission; 2) they are in good standing; and 3) their current (or an alternative) major professor supports their application. Students must complete an online expedited Master's to Doctoral Program application form via the Graduate School website ([http://graduate.ua.edu/application/instructions\\_us3.html](http://graduate.ua.edu/application/instructions_us3.html)). The application must include at least three letters of recommendation from among the faculty of the Department of Biological Sciences and a brief statement concerning the proposed doctoral research. The student's academic record will be reviewed. Additional pertinent information, such as papers presented, meetings attended, and manuscripts submitted, in press, or published, should be included in the application. The applicant is urged to retake the GRE if the initial scores were low, as higher scores will enhance the chances of acceptance of the application. However, this is not a requirement. Students in the University Scholars Program cannot enter into the Ph.D. program without completing the M.S.

### ***Conditional M.S. to Ph.D.***

All students that are conditionally admitted to the M.S. program are required to complete a M.S. Degree (either Plan I or II) prior to applying to enter the Ph.D. program. Requests for exceptions to this policy must be endorsed by a student's Supervisory Committee and approved by the BSC Graduate Committee and Department Chair.

***Plan II M.S. for Students Unable to Fulfill Requirements for the Ph.D. Degree:*** Students in good standing who do not pass the Ph.D. preliminary exam after two attempts, are dismissed from a laboratory by their advisor and cannot identify a new advisor, or decide to leave the Ph.D. Program after passing the preliminary exam but prior to completing the Ph.D. dissertation can apply for a Plan II M.S. degree after (1) submitting a written report detailing their research experience, (2) presenting a formal departmental seminar on their research, and (3) passing a final M.S.-level oral exam.

### Choosing a Research Mentor and Laboratory

#### ***Prior to admission***

Most successful applicants will contact potential mentors during the application process. The departmental website (see <http://bsc.ua.edu/forms-for-graduate-students>) lists faculty and provides a link to individual pages that describe their research interests.

#### ***After admission***

Students arriving without a specified research mentor are required to do laboratory rotation(s). The student should meet with the appropriate section coordinator for academic advising and coordination of rotations. Rotations are arranged by mutual consent between the student and the potential mentor(s). A laboratory rotation is to be regarded as a temporary arrangement by both the student and the potential mentor(s) and typically lasts 1-2 months. The decision for a student to continue in a particular lab to perform their thesis/dissertation research must be agreed upon by both the student and the faculty mentor. Rotations should be completed in the first semester so that students can complete requirements on time for a successful first annual review.

#### ***Changing research mentors***

It is recognized that, on occasion, a student may need to change research mentors. This change may be either student or faculty mentor initiated. Students are advised that a change of mentor can cause significant delay in their progress toward a degree.

**a. Student Initiated:** Students wishing to change research mentors should complete the following steps:

1. Speak to Graduate Program Director or Departmental Chair.
2. Contact other potential advisors.
3. Choose new advisor by mutual consent of student and advisor.
4. Inform the Department Chair, Graduate Program Director, and old and new research mentors.
5. Choose a new committee (within 30 days) and file APPOINTMENT OR CHANGE OF MASTER'S THESIS COMMITTEE form (see <http://bsc.ua.edu/forms-for-graduate-students>) or the APPOINTMENT OR CHANGE OF DOCTORAL DISSERTATION COMMITTEE form (see <http://bsc.ua.edu/forms-for-graduate-students>).

**b. Advisor Initiated:** Faculty mentors may dismiss a graduate student from their lab by completing the following steps:

1. Document the problem with the student and the changes requested of the student. Meet with the student to discuss the problem and present the student with the requested changes. If the student fails to perform the requested changes, repeat the documentation and meeting. If the student again fails to perform the requested changes, the faculty mentor may initiate the dismissal procedure.
2. Send the above documentation to the Graduate Program Director or the Departmental Chair.
3. Meet with the student and, if appropriate, the Graduate Program Director or Departmental Chair to inform the student of his/her dismissal.

## Biological Sciences Graduate Student Handbook

4. The student should contact other potential research mentors.
5. The student should choose a new research mentor by mutual consent of the student and the faculty mentor.
6. The student should inform the Graduate Program Director or the Departmental Chair of the new faculty advisor. The Graduate Program Director or Departmental Chair will then officially inform all involved parties (the Departmental Chair, the previous faculty mentor, and the new faculty mentor) of the change.
7. Within 30 days of the official change in mentor, the student and the new faculty mentor should choose a new graduate advisory committee and file the APPOINTMENT OR CHANGE OF MASTER'S THESIS COMMITTEE form (see <http://bsc.ua.edu/forms-for-graduate-students>) or the APPOINTMENT OR CHANGE OF DOCTORAL DISSERTATION COMMITTEE form (see <http://bsc.ua.edu/forms-for-graduate-students>).

### Financial Assistance

The Department endeavors to maintain funding for all graduate students admitted with an offer of a fellowship or assistantship, although the length of time of this commitment is limited. The total time period of this support depends on the previous degree(s) earned and the degree sought. These are: Entering M.S. student – 2 years, Entering Ph.D. student with a M.S. degree – 4 years, Entering Ph.D. student with a Bachelor's degree – 5 years. Support can be through fellowships, teaching assistantships, research assistantships or any combination thereof.

The Graduate School maintains an online FINANCIAL ASSISTANCE HANDBOOK (<http://graduate.ua.edu/financial/handbook/index.html>) that is available for all students and outlines the many forms of assistance available to current graduate students. The Graduate Committee nominates incoming students for many of the available awards (e.g. Graduate Council Fellowships, NAA License Tag Graduate Fellowship, McNair Graduate Fellowships) while the Awards Committee nominates current students for other available awards (e.g. Research and Creative Activity Graduate Council Fellowships). The Department Chair awards Graduate Teaching Assistantships (GTAs). The priorities for awarding GTAs are:

1. Staffing laboratory sections that require special skills or knowledge
2. Current students in good standing
3. Incoming students (faculty status and equity among faculty influences priority among this pool of students)
4. Current students that have exceeded their specific total period of support

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## APPENDICES:

Plan I M.S. coursework fill-in sheet .....

Plan I M.S. timeline checklist.....

Plan II M.S. coursework fill-in sheet .....

Plan II M.S. timeline checklist.....

Plan II M.S. completion of requirements for degree documentation form .....

Ph.D. coursework fill-in sheet .....

Ph.D. timeline checklist .....

Ph.D. proposal-style written qualifying examination expanded guidelines .....

Examples of all the grad school forms.....  
(fillable PDFs available <http://bsc.ua.edu/forms-for-graduate-students>.)



## Biological Sciences Graduate Student Handbook

### University of Alabama, Department of Biological Sciences Graduate Timeline Checklist, Plan I M.S.

**Student name:** \_\_\_\_\_ **Date entered program:** \_\_\_\_\_

<b>Timeline:</b>	<b>Degree Requirement:</b>	<b>Date Completed</b>	<b>Advisor Initials</b>	<b>Form to be filed:</b>	<b>Link to form:</b>
<b>Year 1-</b>					
Prior to 1 <sup>st</sup> annual review	Research rotation(s) (optional)			none	
Prior to 1 <sup>st</sup> annual review	Research mentor chosen			none	
Prior to 1 <sup>st</sup> annual review	M.S. Advisory Committee chosen			APPOINTMENT OR CHANGE OF MASTER'S THESIS COMMITTEE	<a href="http://bsc.ua.edu/forms-for-graduate-students">http://bsc.ua.edu/forms-for-graduate-students</a>
Prior to Dec. 15th	First annual evaluation			Major advisor submits written evaluation to Department Chair	
Complete by end of 2 <sup>nd</sup> semester	Submit M.S. research proposal to M.S. Advisory Committee			none	
<b>Year 2-</b>					
First week of fourth semester <sup>1,2</sup>	Submit Application for Degree to Graduate School			APPLICATION FOR DEGREE	<a href="http://bsc.ua.edu/forms-for-graduate-students">http://bsc.ua.edu/forms-for-graduate-students</a>
Prior to Dec. 15th	Second annual evaluation			Major advisor submits written evaluation to Department Chair	

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Complete by end of 4 <sup>th</sup> semester	Coursework			none	
At least 2 weeks prior to oral defense	Submit Thesis to M.S. Advisory Committee			none	
Complete by end of second year	Formal Departmental Seminar and Thesis defense			THESIS FINAL DEFENSE FORM	<a href="http://bsc.ua.edu/forms-for-graduate-students">http://bsc.ua.edu/forms-for-graduate-students</a>
At least 6 weeks prior to graduation <sup>2</sup>	Submit Thesis (final form) to Graduate School <sup>3</sup>			electronic submission <sup>3</sup>	

<sup>1</sup>Application for Degree must be submitted to the Graduate School during the first week of the semester in which the student will graduate.

<sup>2</sup>For current year Graduate School deadline dates go to: <http://graduate.ua.edu/calendar/index.html>

<sup>3</sup>For instructions on preparing a Thesis for electron submission go to: <http://graduate.ua.edu/etd/> and <http://graduate.ua.edu/etd/manual/index.html>



# Biological Sciences Graduate Student Handbook

## University of Alabama, Department of Biological Sciences Graduate Coursework Fill-in Sheet

Student name: \_\_\_\_\_

### M.S. Plan II:

30 total semester hours required (18 of which must carry the BSC or MS designation):

➤ 25 Semester hours other than BSC 598 required:

❖ At least 25 semester hours must be Graded:      Semester:      Credit hrs:      Grade:  
6 graded hours can be BSC 507:      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_

≥19 graded hours from courses:      Course:      Semester:      Credit hrs:      Grade:  
(can include BSC 695)      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_

❖ 5 semester hours can be Pass/Fail:      Course:      Semester:      Credit hrs:      Grade:  
(includes seminar)      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_

Up to 5 semester hours BSC 598:      Semester:      Credit hrs:      Grade:  
\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_

Biological Sciences Graduate Student Handbook

**THE UNIVERSITY OF ALABAMA  
DEPARTMENT OF BIOLOGICAL SCIENCES  
COMPLETION OF REQUIREMENTS FOR THE PLAN II M.S. DEGREE DOCUMENTATION  
FORM**

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STUDENT NAME: \_\_\_\_\_ CWID: \_\_\_\_\_

The undersigned confirm that the above named student has completed the following requirements for the Plan II Masters Degree:

- Successfully completed all required coursework
- Submitted a final report documenting research conducted for the degree
- Presented a formal public seminar on the Plan II M.S. research project
- Passed the final oral examination administered following the above seminar

CHAIR OF M.S. ADVISORY COMMITTEE:

Printed Name: \_\_\_\_\_ Signature: \_\_\_\_\_

COMMITTEE MEMBERS:

Printed Names: \_\_\_\_\_ Signatures: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

GRADUATE PROGRAM DIRECTOR:

Printed Name: \_\_\_\_\_ Signature: \_\_\_\_\_

DEPARTMENT CHAIR:

Printed Name: \_\_\_\_\_ Signature: \_\_\_\_\_

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

# Biological Sciences Graduate Student Handbook

## University of Alabama, Department of Biological Sciences Graduate Coursework Fill-in Sheet

Student name: \_\_\_\_\_

Ph.D.: 72 total semester hours required:

➤ 48 Semester hours other than BSC 699 required:

At least 39 semester hours must be Graded:      Semester:      Credit hrs:      Grade:  
6 graded hours can be BSC 507:      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_

6 graded hours can be BSC 607:      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_

≥27 graded hours from courses:      Course:      Semester:      Credit hrs:      Grade:  
(can include BSC 695)      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
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\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_

9 semester hours can be Pass/Fail:      Course:      Semester:      Credit hrs:      Grade:  
(includes BSC 698 and up to 4      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
semester hours of seminar)      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
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\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_

24 semester hours BSC 699 required:      Semester:      Credit hrs:      Grade:  
(after passing preliminary exam,      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
then must take 3 cr. hrs. each semester)      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_

## Biological Sciences Graduate Student Handbook

### University of Alabama, Department of Biological Sciences Graduate Timeline Checklist, Plan II Master's

Student name: \_\_\_\_\_ Date entered program: \_\_\_\_\_

Timeline:	Degree Requirement:	Date Completed	Advisor Initials	Form to be filed:	Link to form:
<b>Year 1-</b>					
Prior to 1 <sup>st</sup> annual review	Research rotation(s) (optional)			none	
Prior to 1 <sup>st</sup> annual review	Research mentor chosen			none	
Prior to 1 <sup>st</sup> annual review	Thesis advisory committee chosen			APPOINTMENT OR CHANGE OF MASTER'S THESIS COMMITTEE	<a href="http://bsc.ua.edu/forms-for-graduate-students">http://bsc.ua.edu/forms-for-graduate-students</a>
Prior to Dec. 15th	First annual evaluation			Major advisor submits written evaluation to Department Chair	
Complete by end of 2 <sup>nd</sup> semester	Master's research proposal				
<b>Year 2-</b>					
First week of fourth semester <sup>1,2</sup>	Submit Application for Degree to Graduate School			APPLICATION FOR DEGREE	<a href="http://bsc.ua.edu/forms-for-graduate-students">http://bsc.ua.edu/forms-for-graduate-students</a>
Prior to Dec. 15th	Second annual evaluation			Major advisor submits written evaluation to Department Chair	
Complete by end of 4 <sup>th</sup> semester	Coursework			none	
At least 2 weeks prior to oral defense	Submit Research Experience Report to M.S. Advisory Committee			none	
Complete by end	Formal Departmental				

## Biological Sciences Graduate Student Handbook

of second year	Seminar and Defense				
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<sup>1</sup>Application for Degree must be submitted to the Graduate School during the first week of the semester in which the student will graduate.

<sup>2</sup>For current year Graduate School deadline dates go to: <http://graduate.ua.edu/calendar/index.html>

## Biological Sciences Graduate Student Handbook

### University of Alabama, Department of Biological Sciences Graduate Timeline Checklist, Ph.D.

**Student name:** \_\_\_\_\_ **Date entered program:** \_\_\_\_\_

<b>Timeline:</b>	<b>Degree Requirement:</b>	<b>Date Completed</b>	<b>Advisor Initials</b>	<b>Form to be filed:</b>	<b>Link to form:</b>
<b>Year 1-</b>					
Prior to 1 <sup>st</sup> annual review	Research rotation(s) (optional)			none	
Prior to 1 <sup>st</sup> annual review	Research mentor chosen			none	
Prior to 1 <sup>st</sup> annual review	Ph.D. advisory committee chosen			APPOINTMENT OR CHANGE OF MASTER'S THESIS COMMITTEE	<a href="http://bsc.ua.edu/forms-for-graduate-students">http://bsc.ua.edu/forms-for-graduate-students</a>
Prior to 1 <sup>st</sup> annual review	Submit Plan of Study to Ph.D. Advisory Committee			none	
Prior to Dec. 15th	First annual evaluation: -Discuss progress -Discuss Plan of Study			Major advisor submits written evaluation to Department Chair	
<b>Year 2-</b>					
Prior to completing 30 graduate credit hours	Submit Plan of Study to Graduate School			OUTLINE OF PH.D. PROGRAM (PLAN OF STUDY)	<a href="http://bsc.ua.edu/forms-for-graduate-students">http://bsc.ua.edu/forms-for-graduate-students</a>
At least 1 week prior to 2 <sup>nd</sup> annual review	Submit Formal Research Proposal to Ph.D. Advisory Committee			none	
Prior to Dec. 15th	Second annual evaluation: -Discuss progress			Major advisor submits written evaluation to Department Chair	

## Biological Sciences Graduate Student Handbook

	-Defend Formal Research Proposal				
<b>Year 3-</b>					
Complete by end of 5 <sup>th</sup> semester	Coursework			none	
Complete by end of 6 <sup>th</sup> semester	Oral and Written Preliminary Exams <sup>1</sup>			DOCTORAL QUALIFYING EXAMINATION FORM <sup>1</sup>	<a href="http://bsc.ua.edu/forms-for-graduate-students">http://bsc.ua.edu/forms-for-graduate-students</a>
After completion of Preliminary Exams	Admission to Candidacy			ADMISSION TO CANDIDACY FOR THE DOCTORAL DEGREE	<a href="http://bsc.ua.edu/forms-for-graduate-students">http://bsc.ua.edu/forms-for-graduate-students</a>
Prior to Dec. 15th	Third annual review: -Discuss progress			Major advisor submits written evaluation to Department Chair	
After completion of Preliminary Exams (6 <sup>th</sup> semester)	Take dissertation credits (BSC 699)			none	
<b>Years 4 and 5-</b>					
Prior to Dec. 15th	Fourth and fifth annual reviews: -Discuss progress			Major advisor submits written evaluation to Department Chair	
First week of last semester <sup>1,2</sup>	Submit Application for Degree to Graduate School			APPLICATION FOR DEGREE	<a href="http://bsc.ua.edu/forms-for-graduate-students">http://bsc.ua.edu/forms-for-graduate-students</a>
At least two weeks prior to dissertation defense	Submission of Dissertation to Ph.D. Advisory Committee			none	
At least 8 weeks prior to graduation	Formal Departmental Seminar and Oral Defense <sup>1</sup>			DOCTORAL FINAL DEFENSE FORM	<a href="http://bsc.ua.edu/forms-for-graduate-students">http://bsc.ua.edu/forms-for-graduate-students</a>
At least 6 weeks prior to graduation <sup>1</sup>	Submit Dissertation (final form) to Graduate			electronic submission <sup>3</sup>	

## Biological Sciences Graduate Student Handbook

	School <sup>3</sup>				
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<sup>1</sup>For current year Graduate School deadline dates go to: <http://graduate.ua.edu/calendar/index.html>

<sup>2</sup>Application for Degree must be submitted to the Graduate School during the first week of the semester in which the student will graduate.

<sup>3</sup>For instructions on preparing a Dissertation for electron submission go to: <http://graduate.ua.edu/etd/> and <http://graduate.ua.edu/etd/manual/index.html>



## **Ph.D. PROPOSAL-STYLE WRITTEN QUALIFYING EXAMINATION EXPANDED GUIDELINES**

### **GENERAL INTRODUCTION**

Each student must successfully complete a qualifying examination (both written and oral) administered by his or her Ph.D. Advisory Committee. The written examination can be either 1) a set of questions given and graded by each member of the student's committee, or 2) a proposal written using the strict guidelines given in Appendix 7. It is understood that the student and his or her Ph.D. Advisory Committee will agree to the form of the written examination (i.e., whether it will be in the Option 1 [Traditional] format or the Option 2 [Proposal-based format]). The student's major advisor will have the final authority to determine the type of exam taken by the student.

This proposal-based examination is to be written in a style typical of an NSF or NIH grant proposal. Your Ph.D. Advisory Committee will assess the quality of your proposal as if you were submitting the proposal to such an agency. In general, the proposal-based examination consists of a document that demonstrates the following:

1. The ability to identify a substantive proposal topic
2. The ability to formulate valid and testable hypotheses
3. The ability to identify the importance of and justification for the proposed research, by preparing a comprehensive review of related research literature and presenting the proposed project in that context
4. The ability to prepare a sound research plan that includes both appropriate techniques and approaches suitable for the testing of the hypotheses and alternative strategies and hypotheses.

There will also be a comprehensive literature cited section. Proposals must conform to all stated guidelines, including page limits, to be acceptable for review.

The Department of Biological Sciences is separated into two sections: Ecology, Evolution, and Systematics (EES) and Molecular and Cellular Biology (MCB). Each section has a somewhat unique culture. Students in EES are expected to write a proposal on their own planned dissertation research, unless otherwise noted by their major advisor and/or Ph.D. Advisory Committee. Students in MCB are required to submit a total of 5 potential proposal ideas (research topics and/or questions) to their major advisor who will consult with the student's Ph.D. Advisory Committee and determine the proposal topic. All students should discuss with their major advisor whether to take the proposal-based examination and how to determine the specific topic of the proposal, especially if students have a major advisor that spans both EES and MCB.

Because one of the primary goals of the Written Examination is to test the student's competence in their general area of study, a satisfactory performance requires that the student demonstrate a comprehensive and in-depth knowledge of the concepts and methodologies of the disciplines comprising the major area of research interest. The student will also be expected to demonstrate an authoritative and up-to-date grasp of the literature in their area of specialization and to be able to discuss in detail the experimental design, rationale, and methodology used in their proposed research program. Proposals will be returned without review if guidelines are not followed and/or

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if the writing (irrespective of content) is unacceptable.

### A. GENERAL INSTRUCTIONS

#### 1. Read and follow the instructions carefully to avoid delays and misunderstandings.

In preparing the proposal, use English and avoid jargon. For terms not universally known, define the term the first time it is used, with the appropriate abbreviation in parentheses; the abbreviation may be used thereafter. When using scientific names, add the common name in parentheses during the first mention.

**Observe type size and format specifications throughout the proposal, or the document will be returned without review.**

Prepare the proposal using uniform 2.5 cm margins at the top, bottom, and sides of each page. Use Times or Times New Roman 12 point font and single space line spacing in the main text of the proposal. Figures, charts, tables, figure legends, and footnotes may be smaller than 12 point font, but everything must be readily legible. Use black letters that can be clearly copied. Do **not** use photo reduction. You should prepare all graphs, diagrams, tables, and charts in black ink. However, if a figure would be significantly clearer if presented in color, you may do so. You should not use color simply to make the document look “pretty”.

#### 2. Observe page limitations, or the proposal will be returned without review.

The proposal must not exceed 15 pages, including text plus all figures, charts, tables and diagrams. This page limitation does not include **Literature Cited** (see Specific Instructions in Section B).

#### 3. Make the proposal easy to read and follow

The proposal must be well written using proper English grammar, but it also must be well organized and presented in an easy to read manner. You should imbed figures and tables within the document, next to the relevant section where they are first mentioned. Use bold, italics, boxes, etc. to highlight particular sections. Your submitted proposal should be written as if it will be submitted straight to NSF or NIH. Reviewers do not want to see a book report, and such proposals will be returned without review.

### B. SPECIFIC INSTRUCTIONS *Sections of the Proposal*

**For sections 1-4, do not exceed 15 pages.** The face page, project summary, table of contents, and project description, tables, graphs, figures, diagrams, and charts must be included within the 15-page limit. Only the literature cited section (section 5) will not be included in the 15 page limit. **This page limit will be strictly enforced. Proposals that do not conform to the guidelines as outlined in this document will be returned without review, thus resulting in a failed written examination.**

#### 1. Face Page

Include the following information:

**Title of Project** Do not exceed 56 characters, including the spaces between words and punctuation. Choose a title that is specifically descriptive, rather than general.

**Your Name**

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### Date

**List of Ph.D. Advisory Committee Members** (indicate major advisor).

2. **Project Summary** The proposal must contain a summary of the proposed activity not more than one page in length. It should not be an abstract of the proposal, but rather a self-contained description of the activity that will take place during the research period. The summary should be written in the third person and include a statement of objectives, methods to be employed, and the significance of the proposed activity to the advancement of knowledge. It should be informative to other persons working in the same or related fields and, insofar as possible, understandable to a scientifically or technically literate lay reader.

3. **Table of Contents** Provide the page number for each category listed on the Table of Contents. Number pages *consecutively* at the bottom of each page throughout the application. Do not include unnumbered pages.

4. **Project Description (see Section C)** The Project Description should include sufficient information needed for evaluation of the project, independent of any other document. Be specific and informative; avoid redundancies. The main body of the proposal should be a clear statement of the work to be undertaken and should outline the general plan of work, including the broad design of research activities and adequate description of experimental methods and procedures. Organize items in the Project Description to answer these questions: (1) What do you intend to do? (2) Why is the work important? (3) How are you going to do the work?

5. **Literature Cited** List all references. (***This is the only section that can be of any length and that is not included in the 15-page limit.***) Each reference must include the title, names of all authors, book or journal, volume number, page numbers, and year of publication. They should conform to a standard format. The references should be limited to relevant and current literature. While there is no page limitation in this particular section, it is important to be concise and to select only those literature references pertinent to the proposed research. You should pick key papers to the field and review articles. **NOTE:** You should read every paper that is cited in this section. It is not ethical to simply cite what other people have cited.

### **C. RECOMMENDED PAGE DISTRIBUTION FOR THE PROJECT DESCRIPTION**

1. **Specific Aims** List the broad, long-term objectives and what the proposed research is intended to accomplish. State the hypotheses and predictions to be tested. ***One page is recommended.***

2. **Background and Significance** Briefly sketch the background leading to the present proposal, critically evaluate existing knowledge, and specifically identify the gaps that the project is intended to fill. State concisely the importance and scientific relevance of the research described in this application. Why and/or how will it lead to a significant advancement of the field? ***Three pages are recommended.***

3. **Preliminary Studies/Data** Describe or present data of any preliminary studies that suggested models/hypotheses presented in the specific aims or that support the

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feasibility of the proposed experimental approach. A proposal must present research that is both significant and feasible. Present only those studies that are directly relevant to the rationale and/or design of the proposed research. Usually you or your major advisor will have done these studies. ***Two to three pages are recommended.***

**4. Research Design and Methods** Describe the research design and the procedures to be used to accomplish the specific aims of the project. Include how the data will be collected, analyzed, and interpreted. Describe any new methodology and its advantage over existing methodologies. Discuss the potential difficulties and limitations of the proposed procedures and alternative approaches to achieve the specific aims. As part of this section, provide a tentative sequence or timetable for the project; this timetable should be no more than ½ a page. ***Five pages are recommended.***

### **NOTE:**

Proper scientific writing is an extremely important part of science. Whether you become involved in teaching, academic or industrial research, or government policy, your job will include writing technical documents, proposals, and reports. The success of your career will depend not only on the creativity of your research, but also on your ability to communicate your ideas and results. The proposal-based Written Examination provides you the opportunity to work on your scientific writing, and garner the help and suggestions of experienced faculty members. We look at this proposal-based option as an opportunity to help you grow and mature in your chosen field, and as an important step in ensuring your success as an investigator.

### **PH.D. WRITTEN EXAMINATION PROPOSAL-BASED TIPS**

Summary: Browse examples of abstracts of funded proposals at NSF: <http://www.nsf.gov/awardsearch/> or NIH: <http://crisp.cit.nih.gov/>

#### Specific Aims

- Somewhat of a misnomer, since you DO NOT want just a specific list of experiments to perform.
- Need to convey critical scientific questions/rationale that prompt each set of experiments proposed.
- Often easily expressed as questions.
- Best if expressed as hypotheses to test.
- Following each scientific question/hypothesis, cite experiment(s) that will answer/test.
- Format as actual listing/outline.
- Numbering/lettering of individual aims and experimental strategies should correspond to the numbering/lettering of subdivisions in Project Description.
- Debatable point: For this section & throughout (except in Project Summary), first person writing is more readable than passive voice.

#### Project Description

- State explicitly what you plan to/will do.

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- Avoid conditional phrases, such as “We could...” or “Another experiment that could be done...”
- For techniques that are not commonly performed, be sure to provide sufficient details to convince reviewers that you will be able to carry out the proposed experiments.
- Avoid proposing significant bodies of work that would require making or acquiring any specific reagent.
- For example, if your entire proposal depends upon having a specific antibody reagent, and your first step is to generate that antibody, your review committee will be skeptical of your likelihood of success.
- Be sure to present predicted outcomes of experiments, together with their interpretation relative to your specific aims.
- If alternative outcomes are possible, consider each and describe your subsequent experimental direction given either outcome.
- Be sure to consider the possibility of experimental failure/malfunction.
- Be realistic about what can be reasonably accomplished in the time proposed.