

University of Delaware
Biological Science Department
Graduate Program Policy
2021/2022 Academic Year

Reviewed and approved October 4, 2021

Department of Biological Sciences

Graduate Program Policy

Revised 10/2015

Degrees Offered

By the action of the University of Delaware Faculty Senate and the Board of Trustees (1953), the Department of Biological Sciences ("The Department") of the University of Delaware College of Arts & Science is authorized to recommend the degrees of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) in Biological Sciences. The Department offers specialized training in the areas of molecular biology and genetics; cell and organ systems physiology; and the interface of chemistry and biology.

Administrative Structure

Graduate Program Director

One member of the Biological Sciences faculty will serve as the Graduate Program Director and oversee the academic progress of graduate students admitted to the Department for training under the auspices of the Graduate Program in Biological Sciences. The Graduate Program Director will serve as the advisor for all first year graduate students until they have selected an approved thesis or dissertation advisor.

Graduate Affairs Committee

The Committee consists of five faculty members, including the Graduate Program Director, and is responsible for evaluating applicants to the graduate program, initiating modifications in graduate education policy, reviewing recommendations from faculty and graduate students, and approving steps in the progress of students toward the M.S. and Ph.D. degrees.

Department Chair

The Graduate Program Director and the Graduate Affairs Committee are advisory to the Department Chair, who is responsible for Departmental approval of degrees, recommendations to the Office of Graduate & Professional Education regarding dismissal of students from the Program, appointment of students as teaching or research assistants, and other academic and curricular issues.

Graduate Research Concentrations

Groups of faculty with common educational and research interests may establish formal Graduate Research Concentrations ("Concentrations") that include specific curricular

requirements, examination formats, seminars/journal clubs and other aspects of training in a particular research area. New Concentrations must be approved by the Graduate Affairs Committee, the Department Faculty and Chair, College and University Senate Committees and the Office of Graduate & Professional Education. Concentrations are subject to periodic review by the Graduate Affairs Committee.

Admission

Graduate admission criteria of the Department of Biological Sciences include a scholastic index (grade point average on a 4.0 point scale) of at least 2.8 overall and 3.0 in the sciences. The Graduate Record Examination (GRE) General test (Verbal and Quantitative) is required. Competitive scores are the 50th percentile or better in each section. Those who meet the stated minimum requirements are not guaranteed admission, nor are those who fail to meet all those requirements necessarily precluded from admission if they offer other appropriate strengths.

Applicants are required to complete the following (or the equivalent): two years of biological sciences; one year of mathematics, preferably to include calculus and/or statistics; one year of college physics; one year of general chemistry; and one course in organic chemistry. Applicants who did not major in biology will be considered if they have completed two years of courses in biological sciences and have strong academic backgrounds in other scientific areas. Provisional admission may be offered with the stipulation that any deficiency in undergraduate training be made up (without graduate credit) during the first year of graduate study.

Applications must include three letters of recommendation from persons able to judge the applicant's ability to pursue graduate study.

Applicants who are not U.S. citizens must complete the Test of English as a Foreign Language (TOEFL) with a score of 600 or higher on the paper-based test, 250 or higher on the computer-based test, or 100 or higher on the Internet-based test, in accordance with University of Delaware regulations for graduate assistantship eligibility. Previous education, training or residence in the U.S. does not exempt foreign nationals from these requirements. Requests for a waiver of the language test requirements (for example, for students from English-speaking countries outside of the U.S., or for foreign students who have a college degree from a U.S. institution) must be approved by the University of Delaware Office of Graduate & Professional Education.

Applications normally are considered only for fall entrance, but applicants who are U.S. citizens or permanent residents may request permission to enroll during the spring or summer semester. International applicants are considered only for fall admission. To ensure optimum consideration for fall admission, complete applications should be received at this University by January 15 with a final deadline of April 15. Evaluation of applications will begin on January 15, and applications received between January 15 and April 15 will be considered only if unfilled slots remain. In exceptional circumstances, U.S. citizens and permanent residents may be considered for fall admission until July 1. For spring admissions, the final deadline is October 1.

Students are admitted to the M.S. and Ph.D. programs with the expectation that they will devote full time to their training. Written requests for part-time enrollment must be included in the personal statement section of the application.

Students transferring from the graduate program of another college or university may be eligible to have some requirements substituted or waived on the basis of previous graduate training. Such requests should be submitted in writing to the Graduate Program Director at the time of admission to the University of Delaware.

Teacher Training for Non-U.S. Citizens

Prior to the beginning of the fall term, all foreign students admitted for graduate training at the University of Delaware must complete a four-and-a-half week International Teaching Assistants Program in the University's English Language Institute. Students completing this training receive financial support from the ELI. Subsequent appointment as a Teaching Assistant (see below) requires satisfactory performance on an English language examination administered by the ELI.

Funding

Under normal circumstances, full-time students making satisfactory progress towards a degree receive financial support, including a stipend and a tuition waiver. Support during the academic year is usually provided through teaching assistantships or research assistantships; support through externally-funded fellowships or scholarships is also encouraged. Summer support is usually provided through research assistantships funded by the advisor's external grants.

Fellowships paying less than the department stipend will be supplemented up to the department stipend level from research advisor funds. As an incentive to apply for independent funding, students winning competitive fellowship support may receive additional stipend monies from their research advisor's funds. Such supplements are at the research advisor's discretion and are limited to 20% of the current departmental stipend level. If the fellowship pays more than 20% above the departmental stipend level, no additional supplements may be given.

Teaching Assistantships

Teaching assistants receive a stipend and a full tuition scholarship. Students should arrange financial support during the summer term either from Research Assistantships or other funding sources. Only a limited number of Teaching Assistantships are available during the summer months.

In accordance with University of Delaware regulations, foreign students must achieve a TOEFL score of at least 600 (paper-based), 250 (computer-based), or 100 (Internet-based) and satisfactorily complete the university administered UDIA and SPEAK tests in

order to qualify for teaching assistantships.

The TA's responsibilities and performance standards will be established by the director of the course in which the student teaches. In the event of an unsatisfactory performance by a TA, the course director will notify the student and the Graduate Affairs Committee. The Committee may recommend termination of the assistantship to the Department Chair.

Research Assistantships

Students usually will be supported as Research Assistants (RA's) through their advisor's research funds after their first year. RA's receive a stipend and full tuition scholarship. Doctoral students who enter as TA's in the fall semester fulfill the minimum teaching requirement by the end of the spring term. RA appointments for these students should be finalized by the first day of the summer semester.

The RA's advisor is responsible for defining the student's responsibilities and for evaluating the student's performance. In the event of an unsatisfactory performance by an RA, the advisor will notify the student and the Graduate Affairs Committee at least four weeks prior to terminating the assistantship.

Internal and External Awards

Students are encouraged to seek funding in the form of fellowships or scholarships from sources within the University and from private and federal agencies. The Graduate Program Director will advise students of these opportunities.

Academic Requirements

Graduate Research Concentrations

Groups of faculty with common educational and research interests establish formal Graduate Research Concentrations that include specific curricular requirements, examination formats, seminars/journal clubs and other aspects of training in a particular research area. Each student must consult with the Graduate Program Director and choose a research concentration before beginning the first semester of coursework. Enrollment in an established concentration provides students with the opportunity to make closer ties with students/faculty of similar interests and their transcript will reflect the curriculum that they followed while in the program.

A student whose research interests span two or more of the established concentrations may follow a custom curriculum. A student on a custom curriculum is required to establish a committee that includes at least two (for M.S. students) or three (for Ph.D. students) faculty with primary appointments in Biological Sciences. This committee will establish the course requirements and administer the comprehensive examination for the student. The composition of the custom curriculum committee, the coursework requirements and the format of the comprehensive examination require the approval of

the Graduate Affairs Committee.

Students who desire to change Concentration, whether from one established Concentration to another or to/from a custom curriculum, must obtain the approval of the Graduate Affairs Committee before the start of their second semester of coursework. Such changes will only be granted to students in good academic standing.

Tutorials

To ensure exposure to a broad spectrum of research and to facilitate the identification of an advisor, Ph.D. students must perform laboratory tutorials with two different faculty members, regardless of whether the student has identified an advisor prior to the completion of the two tutorials. Ph.D. students with research-based M.S. degrees or significant post-baccalaureate research experience may petition the Graduate Affairs Committee for permission to waive one tutorial. Ph.D. students may petition the Graduate Affairs Committee for permission to perform a third tutorial in the event that they have not identified an advisor upon completion of two rotations. The format of the tutorial may vary among the Program's Concentrations.

Students in the M.S. program are not required to perform tutorials, but may enroll in one or more if needed to identify a thesis advisor. M.S. students are encouraged to identify an advisor as quickly as possible so as to initiate and complete their thesis research within specified time limits.

Tutorials may be performed with any faculty affiliated with Biological Sciences. Students must secure approval from the Graduate Program Director for each tutorial they select.

Each tutorial normally will last a full semester (fall/spring) or the entire winter or summer session. Thus, a student admitted for enrollment in the fall semester usually will complete the tutorial requirements by the end of the winter term. Exceptions to the normal tutorial schedule can be granted by the Graduate Program Director. Tutorial students should enroll in the course, BISC 864: Research Tutorial for two credit hours under the name of the faculty member ("tutorial mentor") in whose laboratory the research will be performed.

Prior to beginning the rotation, the student should meet with the tutorial mentor who will define the project and the student's performance expectations. Students will be assigned a letter grade (A, A-, B+, etc.) by the tutorial mentor at the conclusion of the rotation; a grade of pass is not an option.

Identifying an Advisor

M.S. and Ph.D. students may identify a thesis/dissertation advisor from among the scientists who have primary, secondary, joint, or affiliated faculty appointments in Biological Sciences, or scientists listed as "Additional Research Mentors" on the Departmental faculty page. Students may also request approval from the Graduate Affairs Committee for collaborative training in the laboratory of a scientist outside of Biological

Sciences. Students whose advisor does not have a primary, secondary, or joint appointment in Biological Sciences must identify a co-advisor with a primary appointment in Biological Sciences, who will closely monitor the student's progress and adherence to Departmental policies, procedures, and academic standards. The Graduate Affairs Committee must approve all advisor selections. It is the expectation of the Committee that graduate advisors will have active research programs with funding at a level sufficient to support graduate student training.

Once a student is admitted, it is the student's responsibility, working with the assistance of the Graduate Program Director, to identify a faculty member willing to be the thesis or dissertation advisor. While every effort is made in the admissions process to admit students whose research interests match those of the faculty seeking advisees, there is no guarantee that every student will be able to identify a faculty member willing to serve as advisor. If a student's advisor is unable or unwilling to continue as advisor, it is the student's responsibility to identify a faculty member willing to be the new advisor. M.S. students should identify an advisor as quickly as possible. Ph.D. students should identify an advisor by the completion of their final tutorial.

If a student is unable to identify someone who agrees to serve as advisor by the end of the second semester of full-time enrollment, the Graduate Affairs Committee will review the situation and may recommend to the Department Chair that the student be dismissed from the Program for failing to make satisfactory academic progress.

Students may switch to a different advisor at any time, upon the approval of the Graduate Affairs Committee. The dissertation committee of a Ph.D. student who switches advisors after their first year may extend the deadline for the candidacy exam up to two years after the switch, with the approval of the Graduate Affairs Committee. Switching advisors does not change the deadlines for completing the comprehensive examination or other requirements for a degree.

Committee Composition and Meeting Requirements

Each M.S. and Ph.D. student will form a thesis/dissertation committee within one semester of the approval of their advisor selection. Committee members must hold the rank of assistant professor or higher. Scientists employed outside of academia may serve on thesis/dissertation committees upon approval by the Graduate Affairs Committee.

M.S. thesis committees must consist of the advisor and at least two other individuals. A minimum of two members must hold primary appointments in Biological Sciences.

Ph.D. dissertation committees must consist of the advisor and at least four and not more than six other members, one of whom must have his or her primary academic appointment outside of the Department. A minimum of three members must hold primary appointments in Biological Sciences.

Students must convene their thesis or dissertation committees at least once every six months. Upon completion of the meeting, the student's advisor must complete a meeting report and submit it to the Graduate Program Director. Students who do not have

committee meetings in a timely manner will be subject to suspension of their assistantships or dismissal from the program.

Registration

Students in the M.S. and Ph.D. programs are expected to maintain full time enrollment status in the fall, spring and summer semesters. Requests for part-time enrollment must be submitted to the Graduate Affairs Committee and are subject to approval for only one semester at a time.

Full-time enrollment for TA's in fall/spring requires registration in 6 to 9 credit hours of graduate study. RA's must register in fall/spring for 9 to 12 credit hours.

Students must register for three credit hours in the summer to qualify for a summer Research Assistantship. Students do not register for Winter Session, but are expected to use this time to continue their thesis or dissertation research.

M.S. students who have completed their required coursework, and Ph.D. students who have completed their required coursework and their candidacy exam, may register for Sustaining Status. The student will not register for credits, but must pay a fee to the University.

Course Requirements

The Master of Science program requires a minimum of 30 credits. In most cases, this includes 16-19 hours of core graduate courses (as determined by the student's concentration), 6 hours of Thesis (BISC 869) and successful completion of the comprehensive examination (see below). Research (BISC 864 and BISC 868) credits do not count toward this core credit hour requirement. Primary emphasis is on research that culminates in a written thesis and the oral defense of that thesis.

For the Ph.D. degree, successful completion of the comprehensive examination and candidacy examination as well as the oral defense of a dissertation are required. Ph.D. candidates must complete two laboratory tutorials and a minimum of 16-19 credit hours of core graduate course work (as determined by the student's concentration), which should be completed as soon as possible to allow time for independent study and research, and 9 hours of Doctoral Dissertation (BISC 969). Research (BISC 864 and BISC 868) credits do not count toward the 16 credit hour requirement. It is expected that a significant portion of the dissertation will be suitable for publication.

Only graduate courses completed with a grade of B or higher count towards the requirements for the M.S. or Ph.D. degrees. Students receiving a B- or lower in a required core course are subject to dismissal. However, they may file an appeal to the Department of Biological Sciences Graduate Affairs Committee for approval to retake the course and remain in the program. If the appeal is not approved, the Graduate Affairs Committee will recommend to the Office of Graduate & Professional Education that the student be dismissed from the program.

Each Concentration establishes a list of required and elective courses. Students may substitute other courses with the approval of the Concentration Coordinator and the Graduate Affairs Committee.

Teaching Requirements

To develop organizational and oral presentation skills, all Ph.D. students are required to serve as a Teaching Assistant (TA), with instructional responsibility for laboratory or lecture sections, for at least one academic year (two full semesters; fall/spring equivalents). M.S. students may serve as TA's, but are not required to do so. M.S. students may be TA's for the entire duration of their training, while Ph.D. students may serve as TA's for a maximum of two academic years. Requests for exceptions to this policy must be reviewed by the Graduate Affairs Committee and are subject to final approval by the Department Chair.

Grade requirements

All graduate students are subject to the University of Delaware Graduate Probation and Dismissal Policy, as stated in the University Catalog. Briefly, students must maintain a grade point average (GPA) of at least 3.0. A student whose GPA falls below 3.0 will be placed on probation, and a student whose GPA remains below 3.0 is subject to dismissal. A GPA below 2.0 makes a student subject to immediate dismissal from the University.

Transfer of Credits

Students may request that credit earned in graduate courses taken at the University of Delaware or elsewhere be applied toward their degree requirements in Biological Sciences. The student must have earned a grade of at least B in a course taken no longer than five years ago at an accredited college or university, and the course must not have already been used to fulfill the requirements of an undergraduate or graduate degree. Requests must be made to the Graduate Affairs Committee in writing using the University's Request for Transfer of Graduate Credit form.

Time to Degree

It is the expectation of the Program that students will complete the M.S. degree in two years, with a time limit of three years. Students in the Ph.D. program are expected to complete all degree requirements within five years, with a time limit of seven years. An extension of these time limits may be granted for circumstances beyond the student's control. Requests for extensions must be submitted to the Graduate Affairs Committee at least one semester prior to the time limit. The University Office of Graduate & Professional Education must grant final approval of requests for extensions.

Students must submit an Application for Advanced Degree to the University's Office of

Graduate & Professional Education. Information about this form, including fees and deadlines, are available in the University Catalog.

Comprehensive Examination

M.S. and Ph.D. students must pass a comprehensive examination that tests their general knowledge base in their area of specialization and their ability to critically evaluate scientific literature (the literature is made available via the department intranet). The content of the examination will be determined by an examination committee chosen from the faculty. In order to be eligible to take the comprehensive exam, students must have completed first year core courses with a grade of B or better. Students are required to take the comprehensive exam at a time set by the Concentration Coordinator as soon as feasible after the first year curriculum has been successfully completed. If the student fails to complete the comprehensive exam by this time, the student will be subject to dismissal. The results of this examination will be one of the following:

1. Unconditional pass. The student may proceed to the next stage of the degree training.
2. Conditional pass. The student performed marginally in one or more areas and may be asked to complete (with a grade of B or better) one or more courses as a condition for changing the grade to pass. The examination committee may prescribe conditions in addition to, or in lieu of, course enrollment. Once the condition is fulfilled, the student is responsible for informing the Biology Graduate Program Director so that the grade can be changed officially.
3. Re-examination. This result is appropriate for a student whose performance was unsatisfactory, but displayed evidence of the potential to complete graduate degree training. Re-examination must be completed within eight weeks of the initial exam, at a time to be set by the examining committee. The possible outcomes of the re-examination are unconditional pass, conditional pass or failure. The student may not take the exam a third time.
4. Failure. This outcome would indicate that examination committee considers the student incapable of completing degree training. The student's academic progress will be reviewed by the Graduate Affairs Committee, who will make recommendations to the Department Chair regarding the student's enrollment status. The Chair may recommend to the Office of Graduate & Professional Education that the student be dismissed from the Program immediately.

Ph.D. Candidacy Examination

Ph.D. students must complete a candidacy examination by the end of their sixth semester of enrollment. The dissertation committee of a Ph.D. student who switches advisors after their first year may extend the deadline for the candidacy exam up to two years after the switch, with the approval of the Graduate Affairs Committee. The exam will be administered by the student's dissertation committee, excluding the student's primary research advisor. If a student has co-advisors with major roles in supervising the student's research, the co-advisors may not serve on the examination committee. If a student whose

research is supervised by someone outside the Department has an advisor of record who does not play a primary role in supervising the student's research, the advisor of record may serve on the exam committee. The exam committee must have at least four members, and at least two of the members must have primary appointments in Biological Sciences. Temporary members may be added to the dissertation committee to meet these requirements. It is not necessary to have a member of the exam committee from outside the Department.

Since the primary advisor for the dissertation will not be present during the examination, the student must choose an examination committee chair from among the remaining members. The chair will be responsible for the conduct of the exam and the completion of a detailed report outlining the student's strengths and weaknesses, as well as any suggestions for alterations to the research proposal after the defense.

The candidacy examination will include both a defense of the student's proposed dissertation research and an in-depth examination of the student's knowledge of their research specialty. Students are expected to demonstrate competency in both oral and written communication skills. Examples of previous students' dissertation proposals are available from the department intranet. The possible outcomes of this examination are the same as for the comprehensive examination, above. Once the candidacy examination is completed, the student must apply to the graduate school for admission into candidacy. Please see the Recommendation for Candidacy for Doctoral Degree form for details.

Post-Candidacy Defense and Dissertation/Thesis Preparation

M.S. and Ph.D. students nearing completion of their degree requirements must submit to the University an application for degree and pay an application fee. Details about this process, including submission deadlines, are available from the Office of Graduate & Professional Education.

Written theses/dissertations must comply with University style regulations. A thesis handbook is available from the Office of Graduate & Professional Education and online.

Graduating students must submit a completed Departmental Thesis/Dissertation Announcement Form to the Graduate Program Director at least two weeks prior to the oral defense. A copy of the thesis/dissertation must be provided to the Graduate Program Director for public display, as well as to all members of the thesis/dissertation committee, at least two weeks prior to the defense.

Consequences of Unsatisfactory Academic Progress

The Graduate Affairs Committee will meet at least once each semester to evaluate each student's progress. If a student is failing to make satisfactory progress towards a degree, the committee will recommend suitable action to the Department Chair. Possible actions include (but are not limited to):

1. Requirement for additional courses;
2. Conversion to the terminal M.S. degree program;

3. Suspension of financial support;
4. Recommendation for dismissal.

Violations of the University of Delaware regulations regarding academic honesty or other forms of gross misconduct may result in immediate dismissal from the Program.

Dismissal

The Department will follow the procedures for dismissal that are detailed in the University Catalog. Briefly, the Graduate Affairs Committee will report its recommendation and reason for dismissal to the Department Chair. The Chair will make a recommendation to the Office of Graduate & Professional Education, who will decide whether to dismiss the student. The student may appeal this decision to the Office of Graduate & Professional Education, following the procedure given in the University Catalog.

Standards of Student Conduct

All graduate students are subject to University of Delaware regulations regarding academic honesty.

Laboratory Safety and Research Regulations

Graduate students performing laboratory research are subject to all University regulations regarding safety, use of human subjects and animals, and hazardous/radioactive material use and disposal. These guidelines may be found in the University of Delaware Policies and Procedures Manual.

Graduate Student Grievance Procedures

Students who feel that they have been graded inappropriately or receive what they perceive as an unfair evaluation by a faculty member may file grievances in accordance with University of Delaware policies. Students are encouraged to contact the Department's Graduate Program Director prior to filing a formal grievance in an effort to resolve the situation informally.

Access to Student Records

Students wishing to review their Departmental file must submit a written request to the Graduate Program Director at least 24 hours in advance. Students must review the file in the presence of departmental staff or faculty and are not permitted to remove a file from the main office but may photocopy documents from their folder. All access to student records is in accordance with the Family Educational Rights and Privacy Act.