

University of Wisconsin-Milwaukee
Department of Biological Sciences
Doctoral Degree Program Guidelines (rev. 09/2021)

For questions, contact the program either by phone or e-mail.

bioscigrad-list@uwm.edu

414-229-5137

I. PROGRAM BASICS

A. ADMISSION REQUIREMENTS

Upon acceptance to the program, students will be notified of any curricular pre-requisites that must be completed as perceived by their advisor/committee. Extra programmatic requirements (physics, organic chemistry and calculus) will be determined by the student's major professor. All basic requirements must be remedied by the end of the student's first year.

B. GRADUATE SCHOOL REQUIREMENTS

There are a number of general Graduate School regulations and requirements for the Doctoral Degree that are described on the [Graduate School website](#). The student's program is governed by the rules in the [Graduate School's Academic Policies & Procedures](#) issued the year in which the student enrolled in the graduate program.

C. RESEARCH REQUIREMENT

The Doctoral degree is a **RESEARCH** degree. The most important requirement is that a student must make an original, publishable contribution to their field of study. ***Ph.D. students are required to have submitted or published at least one primary authored manuscript in a peer-reviewed journal prior to graduation. PhD students are also required to present a Colloquium in the Department of Biological Sciences prior to graduation.***

D. DOCTORAL STUDENT STATUS

1. DOCTORAL STUDENT

The Department considers students admitted to the doctoral program with a B.S., B.A. or M.S. degree to be doctoral students. However, the Graduate School considers as doctoral students only those in the Ph.D. program that already have a M.S. degree or those who have completed 24 credits of graduate work.

2. DOCTORAL CANDIDATE

A doctoral candidate must complete the University residence, formal course, and language/data analysis proficiency requirements and pass the entire Ph.D. Preliminary Examination (see below).

II. ADDITIONAL PROGRAM REQUIREMENTS

A. LANGUAGE/DATA ANALYSIS PROFICIENCY

The student must demonstrate proficiency in either a foreign language or in data analysis.

1. DATA ANALYSIS OPTION

The student can demonstrate proficiency in data analysis by presenting 12 credits at the 200 level or above in any combination of mathematics, statistics or computer science courses, including courses taken as an undergraduate.

2. FOREIGN LANGUAGE OPTION

Foreign language proficiency can be demonstrated by formal coursework (e.g., 12 college credits of a single language), by satisfactory completion of the appropriate ETS language proficiency examination (e.g., 50th percentile or greater), or by satisfactory completion of a timed translation of a scientific paper(s). The student's Ph.D. Advisory Committee in consultation with the student and the appropriate Language Department determine the appropriate alternative.

B. ANNUAL PROGRESS REPORTS

Students **must** file a signed *Annual Progress Report* **by June 1st every year** of their tenure in the Biological Sciences Graduate Program. The student, major professor and all members of the Ph.D. Advisory Committee are all required to sign the Report, and all have the opportunity to make comments on the Report. Students must file these yearly Reports with the Biological Sciences Graduate Program Director.

Students who do not file a completed Annual Progress Report in any year are not making satisfactory progress and will become ineligible for departmental aid and University-wide financial aid (RAs, PAs, TAs, Fellowships) and risk dismissal from the Biological Sciences Graduate Program.

III. TIMELINE FOR Ph.D. PROGRAM

YEAR 1:

- Form Ph.D. Advisory Committee
- Remedy basic coursework requirements/deficiencies
- Submit *Doctoral Transfer Credit Approval Form* (Departmental)
- Identify secondary area of concentration
- Submit *Annual Progress Report* (Departmental)

YEAR 2:

- Complete coursework
- Begin Dissertation Research Proposal
- Submit *Annual Progress Report* (Departmental)

YEAR 3:

- Complete Dissertation Research Proposal
- Submit *Doctoral Dissertation Proposal Hearing Form* ([Milestones](#))
- Submit *Application for the Doctoral Preliminary Examination(s)* ([Milestones](#))

- Complete Preliminary Examination/Defense of Dissertation Research Proposal
- Submit *Doctoral Preliminary Examination Warrant* (Departmental)
- Submit *Application for Doctoral Dissertator Status* ([Milestones](#))
- Submit *Annual Progress Report* (Departmental)

YEAR 4:

- Dissertation Research
- Prepare manuscript for publication
- Submit *Annual Progress Report* (Departmental)

YEAR 5:

- Submit *Application for Graduation* (PAWS)
- Submit manuscript for publication
- Present departmental Colloquium
- Dissertation Defense
- Graduation

IV. ADVISING

A. MAJOR PROFESSOR

Upon acceptance into the program, the student will be assigned an advisor (major professor). Any questions may be addressed to the advisor or to the Graduate Program Director of the Department of Biological Sciences. In extraordinary circumstances, a student may change major professors. To request an advisor change, the student must seek formal approval from the Graduate Committee. The student must obtain the permission from both current and prospective advisors and submit a *Change of Advisor* form to the Graduate Program Director for approval. If approved by the Graduate Committee, the Graduate School will then be notified of the change.

B. THE Ph.D. ADVISORY COMMITTEE

1. THE COMPOSITION AND FUNCTION OF THE COMMITTEE

The Ph.D. Advisory Committee (hereafter called the Committee) plays a major role in the development of a student's program. The Committee must consist of at least five (5) members, including the major professor and a faculty member representing the student's secondary area of concentration. At least four (4) committee members must be UWM Graduate Faculty, or in special cases, UWM Category B Academic Staff and recommended by the department or programmatic unit. At least two committee members must be voting members of the Department of Biological Sciences. The advisor, major professor or committee chair for a doctoral student must be a member of the UWM Graduate Faculty or the UWM Category B Research Academic Staff, holding the title of Scientist and recommended by the department or programmatic unit. The Graduate Program Director must approve any non-UWM Committee members. The potential non-UWM Committee member must submit a cover letter and *Curriculum Vitae* to the Graduate Program Director. Teaching Assistant support will be given on a priority basis to graduate students under the direction of voting members of the Biological Sciences

Faculty.

The Committee will meet with the student to construct a formal plan of required and advised course work. The Committee is also responsible for approval of the student's written dissertation proposal. The Committee will administer the Preliminary Examination, read and evaluate the dissertation, and administer the final oral examination/dissertation defense by the student (see below). The Committee shall meet at least once per year (more often, if necessary) to monitor the student's research and academic progress and must submit the **Annual Progress Report** document once a year signed by the student and Ph.D. Advisory Committee members. The student's eligibility for financial aid is contingent upon the filing of this document with the Graduate Program Director by **June 1 each year** (see above).

2. PROCEDURE FOR ESTABLISHING THE COMMITTEE

Shortly after beginning the first semester, the student and the advisor begin preparing a plan for the complete program of doctoral studies. The Committee must be established by the end of the first year of enrollment. Consult the proposed Committee members and obtain their consent to serve.

V. COURSE REQUIREMENTS

A. MINIMUM RESIDENCY REQUIREMENTS

A Ph.D. student must be enrolled in a graduate program of research, coursework and related academic activities for at least one continuous academic year.

Students holding Graduate Assistantships can meet this requirement by completing at least six (6) credits in each of three (3) consecutive semesters, exclusive of summer sessions. In special cases, a portion of a student's program may be spent away from the University. A student who wishes to earn off-campus residence credit must obtain written approval from his/her advisor, the Biological Sciences Graduate Program Director and the Graduate School.

B. MINIMUM COURSE REQUIREMENTS

Beyond the bachelor's degree, students must earn a minimum of 54 graduate credits. If a student enters the Program with any graduate-level coursework, up to 27 credits can apply toward the 54 credits required (24 if the graduate-level credits are from UW-Milwaukee). The student's Ph.D. Advisory Committee must approve the transfer credits and a **Doctoral Transfer Credit Approval Form** must be submitted to the Graduate Program Director by the end of the student's first year. The form can be obtained from the Graduate Program Assistant.

- 30 (of 54) credits must be earned in Biological Sciences
- 27 (of 54) credits must be earned in formal courses and seminars (i.e., not research, colloquium, or independent study)
 - Note: the Bio Sci 934, 935 and 936 "Research Advances" seminars DO NOT count as graduate credit
- 4 (of 30) credits must be in Colloquium
- 9 (of 54) credits must fulfill your secondary area of concentration (see below).

C. SECONDARY AREA OF CONCENTRATION

By the end of the first year, the student (in consultation with his/her advisor) shall select courses and seminars in a secondary area of concentration consisting of a minimum of 9 credits. This information must be recorded on the *Annual Progress Report*, signed by the student and the Ph.D. Advisory Committee. The secondary area of concentration is typically an area of biology other than the student's primary area of interest.

D. GRADES

Continuation in the Ph.D. program is at the discretion of the Graduate School, the departmental Graduate Committee and the major professor. A 3.0 (4.0 basis) average or better is required in all work taken as a graduate student. Students receiving a grade of less than a "B" in Biological Sciences coursework or an overall GPA < 3.0 will receive a letter of warning from the Graduate Program Director. ***Grades of D or F are unsatisfactory and do not count in meeting degree requirements.*** Poor performance will result in the student's dismissal from the Biological Sciences Graduate Program

VI. DISSERTATION PROPOSAL/PRELIMINARY EXAMINATION

Doctoral students are expected to complete the Preliminary Examination by the end of their third year in the program. The Preliminary Exam is the defense of a written Dissertation Proposal. The exam will consist of two parts; Part I, approval of the written Dissertation Proposal, and Part II, an oral defense of the proposal before the student's Ph.D. Advisory Committee.

After the proposal has been approved by the Advisory Committee, the student must submit the *Doctoral Dissertation Proposal Hearing Form* ([Milestones](#)). The student should also request the *Doctoral Preliminary Examination Warrant* at least three (3) weeks prior to the oral exam date from the Department's Graduate Program Assistant. The student must also file the *Application for the Doctoral Preliminary Examination(s)* available in the online doctoral [Milestones](#) system. From this application, the Graduate School determines the eligibility of the student to take the Preliminary Examination. The oral defense of the Dissertation Proposal/Preliminary Examination can proceed after approval of the Graduate School, as noted in the Milestones system.

A. PART I: THE WRITTEN DISSERTATION PROPOSAL

Doctoral students must prepare a formal, written Dissertation Proposal outlining the objectives and methodologic approach of his/her proposed research project. A typical proposal is 10-15 single-spaced pages in length exclusive of references. The length of individual Dissertation Proposals may vary depending on the extent of the preliminary results and of the details included in the experimental plan. The proposal must be thorough and of the highest quality. The advisor may assist in formulating the specific aims and research goals of the proposal, but it is expected that the student writes the proposal with subsequent editing assistance from the advisor. The Advisory Committee may provide reviews and literature to assess the student's understanding of general concepts related to the area of research.

The proposal should include the following sections: 1) *Abstract*, 2) *Background and Significance*, 3) *Specific Aims*, 4) *Preliminary Results* and 5) *Experimental Plan*. An *Abstract* of approximately one page should briefly describe background information pertinent to the research being proposed and mention the unanswered questions the proposal will address. The *Background and Significance* section will provide background and justification for the questions to be addressed in the dissertation. It should include a discussion of relevant reviews and published literature demonstrating the student's broad understanding of the central concepts described in the research proposal as well as specialized information pertinent to the specific area of research. The *Specific Aims* section should concisely summarize the critical questions that the research is intended to answer. In the *Preliminary Results* section, unpublished results related to the dissertation topic should be described. Research data that establish the importance, relevance, and feasibility of the questions being addressed in the proposal are included in this section. The *Experimental Plan* should state the hypothesis of each specific aim and describe how the questions raised will be addressed. It should include a description of the approaches and techniques that will be used to conduct the research. The approaches should be described in sufficient detail to illustrate the student's understanding of the proposed approaches and techniques. The anticipated results should be presented and the significance of the results should be discussed. It is recommended that the proposal include alternative hypotheses/approaches to address unexpected results.

The Dissertation Proposal must be submitted to and approved by the student's Ph.D. Advisory Committee two weeks before the Preliminary Examination is to be taken.

B. PART II: ORAL DEFENSE OF THE DISSERTATION PROPOSAL

The student will give an oral presentation of the Dissertation Proposal to the Ph.D. Advisory Committee. Members of the committee will ask questions during and/or after the presentation. The questions during the exam will focus on the research proposal, but may include any questions or topics relevant to the area of research. The final decision concerning the outcome of the Preliminary Examination will be made by a majority of the Advisory Committee. Once the student has passed the exam he/she must file the signed departmental *Doctoral Preliminary Examination Warrant* with the Biological Sciences Graduate Program Director.

If a student fails the Preliminary Examination, the Ph.D. Advisory Committee will decide if the student can retake the exam for a second time. If the student fails a second time, a retake is not allowed. For students retaking the Preliminary Examination for the second time, failure of any part (or all) of the examination will result in dismissal from the Graduate Program. The student's Ph.D. Advisory Committee may appeal to the departmental Graduate Committee to allow a student to retake the exam for the third time. Direct appeals from the student to the departmental Graduate Committee will not be considered.

The student may petition the Graduate School to take only one (1) credit during the semester that he/she intends to take the Preliminary Examination, even while receiving financial support as a TA, PA, RA, or Fellow. To request the one-credit exception, the student must have completed the *Application for the Doctoral Preliminary Examination(s)* available in the online doctoral [Milestones](#) system *before* the start of the semester. Such a petition will be granted only once during the student's tenure in the Ph.D. program. The Examining

Committee is usually the same as the Ph.D. Advisory committee, but may be any three appropriate UWM graduate faculty or Ph.D. committee members approved by the latter.

VII. DISSERTATOR STATUS

A. ADMISSION TO CANDIDACY AND DISSERTATOR STATUS

To obtain dissertator standing, the student must file the *Application for Doctoral Dissertator Status* available in the online doctoral [Milestones](#) system. This form should be filed *before* the semester that dissertator status is sought. Once all the approvals are obtained through the online Milestones system, the student will be admitted to formal candidacy for the Ph.D. degree and is given 'Dissertator' status.

A doctoral student in Dissertator status must register each semester for three (3) graduate level credits, at a reduced Dissertator rate.

B. DISSERTATION RESEARCH

Dissertation research is initiated and conducted with the major professor. A student must be registered for Dissertation Research credits in order to use the facilities of the University for research. A grade of Satisfactory or Unsatisfactory is recorded for all research credits. The Dissertation should be of such caliber and be written in a style and format appropriate for publication in a peer-reviewed journal.

Ph.D. students are required to have submitted or published at least one primary authored manuscript in a peer-reviewed journal prior to graduation.

Ph.D. Students are required to present a Colloquium in the Department of Biological Sciences prior to graduation.

VIII. GRADUATION

A. THE FINAL SEMESTER BEFORE GRADUATION

In the semester when the Dissertation is to be completed there are important application deadlines that must be met. Please refer to the [Graduation Dates and Deadlines](#) and the [Thesis and Dissertation Formatting](#) instructions for more information, both available from the Graduate School.

The candidate must submit an *Application for Graduation* in PAWS early in the semester in which graduation is anticipated. After reviewing the candidate's records to determine eligibility, the Graduate School will forward the approved application to the Biological Sciences Graduate Program Director.

Once a candidate's defense date has been set, the Graduate Program Assistant returns the application to the Graduate School. By the week before the defense, the Graduate School sends a Warrant for the final oral examination/defense of the Dissertation to the Graduate Program Assistant. On the day of the defense, the candidate must bring this Warrant for the Ph.D. Advisory Committee to sign. The completed Warrant must be returned to the Graduate School within ten (10) working days of the defense.

B. FINAL ORAL EXAMINATION

The final oral examination is a public defense of the Dissertation but may also cover the

general fields of the primary and secondary areas of study. The examination may not be taken until all other degree requirements are satisfied. The date of the defense must be posted publicly one week prior to the defense. A majority of the Ph.D. Advisory Committee must approve the Dissertation in order for the student to pass.

The major professor must approve the dissertation before it is presented to the rest of the Ph.D. Advisory Committee. Students should provide final dissertation copies to all Committee members at least two (2) weeks in advance of the defense to allow sufficient time for review.

The final oral examination must be taken within five (5) years after passing the Preliminary Examination. Candidates who exceed this time limit may be required to retake the Preliminary Examination and be admitted to candidacy a second time. All components of the Ph.D. program *must* be completed within ten (10) years of matriculation.

C. GRADUATION

By signing the final examination Warrant, the candidate's Ph.D. Advisory Committee makes a recommendation to the Dean of the Graduate School concerning the merit and acceptability of the Dissertation.

The Graduate School further reviews the Dissertation to ensure that all specifications regarding style and format have been met. Dissertation format requirements are found at the [Thesis and Dissertation Formatting](#) website. The Graduate School holds a workshop on formatting and graduation requirements every semester. The successful Ph.D. candidate is one who has met all requirements and specifications of the degree program. Attendance at graduation ceremonies is optional, but students are urged to attend. On the platform, each candidate and advisor are presented to the Dean of the Graduate School and the Chancellor and hooded at the platform by his/her major professor or proxy. Dates for ordering graduation attire are set by the Office of the Secretary of the University.