

GRADUATE STUDENT REQUIREMENTS AND POLICIES
DEPARTMENT OF ENTOMOLOGY AND WILDLIFE ECOLOGY
UNIVERSITY OF DELAWARE
NEWARK, DELAWARE

Effective February 24, 2023

(Approved by the University Faculty Senate Graduate Studies Committee **January 13, 2012**)

The Department offers programs leading to the Master of Science (M.S.) in Entomology, M.S. in Wildlife Ecology, and the Doctorate of Philosophy (Ph.D.) in Entomology and Wildlife Ecology. Graduate students in these fields couple a focus on insects or vertebrates with a broad knowledge of other related fields of biology, especially ecology. Each candidate's program is planned with the help of the advisor and graduate committee. The M.S. degree programs prepare students for pursuit of the Ph.D. and careers in entomology, wildlife ecology, and other biological disciplines. Students pursuing the Ph.D. degree program in Entomology and Wildlife Ecology have to satisfy the requirements in at least one of two concentrations, Entomology or Wildlife Ecology. The M.S. in Entomology, in place since 1949, was changed to M.S. in Entomology and Applied Ecology in 1999, then back to M.S. in Entomology in 2007. The M.S. in Wildlife Ecology was added in 2004. The Ph.D. degree program received provisional status effective September 1, 1999, and received permanent status in fall of 2007. The department modified its name in 2003, replacing "Applied" with "Wildlife" to accommodate the emphasis on wildlife in the curricula.

ADMISSION REQUIREMENTS

Minimum requirements for admission to the master's and doctoral degree programs are an undergraduate academic index of 2.8 overall and 3.0 in the major field of study. Graduate GPA (if applicable) should be at least 3.2. A paper-based TOEFL score of at least 550 (or 79 computer-based) is required for international students.

Applicants for all degree programs must submit one official transcript of all previous college records, provide a statement of objectives and interests, and have three recommendation forms completed by appropriate mentors and submitted to the University Office of Graduate Studies. At least two of these should be from faculty of the applicant's major department. The statement of interests should include the specialty area(s) within the program and possible faculty member(s) with which the applicant would like to work. Applicants for the Ph.D. degree are strongly encouraged to submit additional evidential material that attests to the applicant's ability to carry out and benefit from doctoral work. This material can include Master's theses, term papers, research reports, grant proposals, publications, evidence of teaching or professional work experience, etc. For most applicants, completion of an M.S. degree is required before admission to the doctoral program.

All interested students must find a faculty mentor who must agree to consider their application prior to applying. Applicants who do not have a faculty sponsor will not be considered and should not apply.

M.S. STUDENTS WHO PLAN TO CONTINUE IN THE PH.D. PROGRAM

Students already matriculated in the M.S. Program in Entomology or Wildlife Ecology and who plan to go on for the doctoral degree may, at an appropriate time, request reclassification to the Ph.D. program as a

pre-candidate in lieu of reapplying for graduate study. The department Graduate Admissions Committee will review the request using the same criteria applied to all applicants to the Ph.D. program. Materials to submit with the request should include any updated information since the M.S. application (letters from major advisor and two other references, and an up-to-date CV), Change of Major Form (<https://www.udel.edu/content/dam/udelImages/grad-college/graduate-college-pdfs/Change-of-Major-Concentration-Degree.pdf>) and most recent written material from the M.S. Requests should be submitted to the department Graduate Program Director. When submitting the Application for Advanced Degree for the master's degree (last semester of M.S. program), check the appropriate box on the form indicating that you plan to continue in the doctoral degree program and submit a letter of request for reclassification.

GRADUATE COMMITTEE

Before an applicant is admitted to a program, a regular faculty member from the department must agree to serve as the major academic advisor for the student's committee. An adjunct faculty member, extension professional, or limited term researcher can serve as the major research co-advisor with the major academic advisor. The student (in consultation with the advisor) will form a graduate committee by the end of the first term. The composition of the graduate committee must be approved by the Department Chair and should be confirmed by memo from the advisor to the student with copies to the student's file and to committee members. The student may request in writing to the Department Chair that changes be made in the graduate committee at a later date. A committee meeting should be held as soon as possible to help plan the student's course work and research.

The graduate committee for the M.S. should consist of 3 people (full-time permanent ENWC faculty) including the student's advisor. The graduate committee for the Ph.D. should consist of 4 people including the student's advisor, 2 full time permanent ENWC faculty, and one from outside the department. The external member can be from another academic unit at the University of Delaware or from outside the institution. The external member should have an established record of publication in the field of the dissertation. Other members may be included on committees for either degree, up to a maximum of 6. A majority of the committee must be regular faculty members from within the department. The Department Chair is an ex officio member of all committees and must be notified of all committee meetings. The committee should represent the areas of emphasis of the student's intended program and research. All members of the Ph.D. committee should hold the doctorate or an equivalent terminal degree.

Maintenance of steady, reasonable progress toward the degree is the responsibility of the student and the advisor. Regular meetings with the graduate committee to discuss progress are strongly encouraged and are required at least once each year. Students should meet with their committee early in their first semester to discuss their research design before they start their research proposal. The department maintains a checklist to record completion of individual requirements for graduate study. Each student is expected to see the graduate program coordinator periodically to update his or her progress. Any shortcomings in progress will be communicated in writing by the major advisor, Graduate Program Director, or the Department Chair to the student and to the Office of Graduate Studies.

MASTER OF SCIENCE DEGREE REQUIREMENTS

General requirements for both M.S. majors are: (1) completion of at least 30 graduate credit hours, including a thesis describing independent research (6 credit hours); (2) presenting the thesis research in a formal departmental seminar; and (3) passing a thesis defense. Students in the Entomology major also must pass an Insect Family Recognition Test (see later section).

A. Credit, Course, and Grade Requirements

If a student has satisfactorily completed any of the required courses or an equivalent, the requirement may be waived.

Core M.S. Degree Courses for Both Majors

ENWC 814 – Advanced Ecology	3
ENWC 870 – Graduate Research Seminar (proposal presentation)	0*
ENWC 869 - Master's Thesis	6
ENWC 617 – Introduction to Quantitative Ecology	3
One additional quantitative course approved by the committee	3

* *Students are expected to attend all department seminars and graduate student presentations throughout their period of graduate study. You are expected to present your research proposal your second semester. You must enroll in ENWC 870 each semester.*

Entomology Major

ENWC 605 Insect Anatomy and Physiology	3
ENWC 606 Insect Identification - Taxonomy	4
One other graduate level course primarily on insects	3
(Obtain the list from the department office for qualified courses)	

Wildlife Ecology Major

Two wildlife-focused courses	6
(Obtain the list from the department office for qualified courses)	

Additional Coursework (both M.S. programs)

Students must earn additional graduate credit hours appropriate to the major to bring the total earned to at least 30 credits. A maximum of 3 credits in ENWC 666, 668, 866, and 868. During the first month of the first semester of study, students should develop a proposed list of courses that they will complete while at the University of Delaware. This course program should then be discussed, modified, and approved by the student's graduate committee. Changes are permitted with approval from the committee, graduate coordinator, and department chair. Students may also be required by their committee to take coursework to make up a deficiency or to meet a prerequisite for a graduate level course and will be added to the course plan.

Grade Requirements

Graduate students must maintain a minimum GPA of 3.00 to remain in good academic standing. GPA requirements are monitored by the Office of Graduate Studies according to the Graduate Studies Academic Probation Policy B.

B. Thesis Requirements

By the end of the first year (preferably within the first 6 months) of graduate study, candidates must submit to their committee for review and approval, a written research proposal describing the intended thesis research, a detailed review of pertinent literature, the methods and procedures to be used, and a timetable for completion. The proposal may be reviewed and refined as necessary. If major emphasis is shifted in the research, the proposal should be amended with the advice and consent of the committee. Students must have an approved proposal by the end of their first year. Students are required to present their proposal in ENWC 870 (Graduate Research Seminar) to the department during their second semester. An approved final graduate proposal must be submitted to the committee and then signed off by the graduate coordinator and Department Chair within the first year.

The thesis should reflect the student's ability to conduct independent scholarly research and to report the results in a manner worthy of publication. It must also adhere to the style requirements of the Graduate College. Students may write the thesis in a style suitable for a manuscript(s) ready for submission to a journal in consultation with their advisor.

The student may register for Master's Thesis (ENWC 869) during any term or terms to accumulate the required 6 credit hours. The student will receive a temporary grade of S or U until successful completion of the thesis, when the advisor will record a letter grade.

C. Insect Recognition Test (Required for Entomology Major only)

The Insect Recognition Test examines the student's ability to recognize the insect orders and common insect families without the use of keys. Students also must demonstrate an ability to use a taxonomic key. A faculty member appointed by the Department Chair administers the test, which is scheduled at the request of the student. A score of 85% is the minimum passing score. The test may be taken three times. The Insect Recognition requirement will be waived for any student who receives a B or above in ENWC 606, Insect ID -Taxonomy.

D. Defense Seminar

A formal, public seminar detailing the student's research is required. The seminar should be of standard format and should utilize appropriate visual aids. Most seminars run approximately 30 minutes with time for questions following the presentation. The student is responsible for informing the front office and arranging the details of the seminar presentation, including its announcement by the usual seminar notices at least one week in advance.

E. *Thesis Defense*

The student must provide each graduate committee member with a refined (but not final) draft of the thesis at least two weeks before the thesis defense. The date of the thesis defense should precede the University deadline for thesis submission by at least two weeks to allow sufficient time for any necessary changes. The Thesis Defense is usually scheduled directly after the student's Department Seminar (see D). The Seminar, including audience questions, will not constitute a thesis defense. Upon completion, the thesis must be presented in a formal, public seminar, followed by a final oral examination, consisting of a defense of the thesis and a test of the candidate's mastery of the fields covered in the program. No other student may attend the examination. Decisions concerning passage of the examination and recommendations stemming from it are decided by the committee based on a simple majority vote. If the first attempt results in failure, the second examination cannot be taken earlier than 90 days nor later than 365 days following the first examination. The examination may be taken only twice. A second failure results in dismissal from the program.

The Thesis Defense shall be announced at least one week in advance by the distribution of a seminar notice (see D), which should indicate that the defense will follow the seminar.

DOCTOR OF PHILOSOPHY DEGREE REQUIREMENTS

A. *Course Requirements*

Doctoral students entering the program with an M.S. must complete a total of at least 30 graduate credits. The degree of Doctor of Philosophy is conferred in recognition of breadth of scholarly attainment and of demonstrated power to investigate problems independently and effectively, rather than for the completion of definite courses of study through a stated period of time.

Doctoral students in Entomology and Wildlife Ecology must complete the following courses either before or during their program at the University of Delaware:

ENWC 814	Advanced Ecology	3
ENWC 870	Graduate Research Seminar	0
ENWC 888	Topics in Entomology and Applied Ecology	0
6 credits	of graduate statistics (600-level or above)	6
9 credits	of Doctoral Dissertation (ENWC 969)	9

If any of the above course requirements are completed before starting the Ph.D. program, substitute courses counting toward the total minimum credits must be approved by the student's graduate committee. A maximum of 6 credits in ENWC 666, 668, 866, and 868 can be applied to the doctoral degree.

The student may register for Doctoral Dissertation (ENWC 969) during any term or terms to accumulate the required 9 credit hours. The student will receive a temporary grade of S or U until successful completion of the thesis, when the advisor will record a letter grade.

Through their course of study, doctoral students should develop significant expertise in one major area and in at least one ancillary area. During the first month of the first semester of study, students should develop a

proposed list of courses that they will complete while at the University of Delaware. This course program should then be discussed, modified, and approved by the student's graduate committee. Changes are permitted with approval from the committee, graduate coordinator, and department chair.

B. Research Proposal

By the end of the first year (preferably within the first 6 months) of graduate study, candidates must submit to their committee for review and approval, a written research proposal describing the intended dissertation research, a detailed review of pertinent literature, the methods and procedures to be used, and a timetable for completion. The proposal may be reviewed and refined as necessary. If major emphasis is shifted in the research, the proposal should be amended with the advice and consent of the committee. Students must have an approved proposal by the end of their first year. Students are required to present their proposal in ENWC 870 (Graduate Research Seminar) to the department during their second semester. An approved final graduate proposal must be submitted to the committee and then signed off by the graduate coordinator and Department Chair within the first year.

C. Qualifying Examination

Doctoral students must prove to their graduate committee that they have acquired a comprehensive grasp of their field of study through a qualifying examination (written and oral) before they are admitted to formal Ph.D. candidacy. This examination should generally occur within 3 months after course work is completed. The examination shall include questions to evaluate basic competence in biology, ecology, and statistics as well as advanced knowledge in the designated major and ancillary areas. The examination areas, examiners for each of the areas, and pertinent review materials will be identified by the committee and communicated at the request of the student at the beginning of the last semester of coursework. In administering the examination, each member of the student's committee will submit written questions to be answered by the student in writing, under conditions to be established. The expectations are that the student will get 8 hours to complete each committee members questions. Each committee member will read and grade the student's responses to their own written questions, prior to the oral portion of the exam. The advisor will collate the answers from each of the committee members and send them to the entire committee. The oral portion will follow approximately 2 weeks after the end of the written portion, and will be conducted by the student's graduate committee. Decisions concerning passage of the examination and recommendations stemming from it are decided by the committee based on a simple majority vote. If the first attempt results in failure, the second examination cannot be taken earlier than 90 days nor later than 365 days following the first examination. The examination may be taken only twice. A second failure results in dismissal from the program.

D. Admission to Candidacy

The requirements for admission to doctoral candidacy are that a student has (1) completed course work, (2) had a research project accepted by the graduate committee, and (3) passed the program's qualifying examination. The student must submit the recommendation for candidacy form to the Office of Graduate Studies. Timeframe for submission?

E. Conference Presentation

Doctoral candidates should make at least one presentation at a regional or national conference during their program.

F. Dissertation and Final Oral Examination

The dissertation must present original research and must meet the generally accepted professional and literary standards for scholarship in the student's field. It must also adhere to the style requirements of the Graduate College. Students are encouraged to write the dissertation in a style suitable for one or more (usually 2-3) manuscripts ready for submission to an appropriate journal. If a student intends to publish in advance of the dissertation, they should provide the manuscript to their committee members for review. Upon completion, the dissertation must be presented in a formal, public seminar, followed by a final oral examination, consisting of a defense of the dissertation and a test of the candidate's mastery of the fields covered in the program. The final oral examination is conducted by the student's graduate committee. To permit adequate time for the committee to review the dissertation, all copies of the tentatively completed dissertation (subject to revisions required by the committee) must be delivered to committee members at least two weeks before the date of the final oral examination. The student can pass their oral examination but may be required to revise the written dissertation before the advisor submits certification of a successful defense to the Graduate College.

FINANCIAL SUPPORT

Graduate students in good standing may receive financial support from a research assistantship, teaching assistantship or fellowship.

REASONS FOR DISMISSAL FROM THE PROGRAM:

Graduate students can and will be dismissed from their academic program if found lying and/or cheating, if deadlines are consistently not being met, if they fabricate data or plagiarize, or if funds are not used appropriately according to the funding source.