

# Doctor of Philosophy in Ecology and Evolutionary Biology

## Ecology and Evolutionary Biology Graduate Programs

The department comprises a large number of biologists with a variety of research interests. 3 broad overlapping themes capture the interests and activities in EEB — biodiversity and macroevolution, ecology and global change biology, and evolutionary mechanisms. The department offers graduate study leading to Master of Arts and Doctor of Philosophy degrees in ecology and evolutionary biology. General information about the department and its faculty, current graduate students, admission, and financial support may be found on the EEB website (<https://eeb.ku.edu/>).

B.A. and B.S. degree programs in biology are listed under Biology Undergraduate Programs (<https://catalog.ku.edu/liberal-arts-sciences/biology/>).

## Admission to Graduate Studies

### Admission Requirements

- All applicants must meet the requirements outlined in the Admission to Graduate Study (<https://policy.ku.edu/graduate-studies/admission-to-graduate-study/>) policy.
- Bachelor's degree: A copy of official transcripts showing proof of a bachelor's degree (and any post-bachelor's coursework or degrees) from a regionally accredited institution, or a foreign university with equivalent bachelor's degree requirements is required.
- English proficiency: Proof of English proficiency (<https://gradapply.ku.edu/english-requirements/>) for non-native or non-native-like English speakers is required. There are two bands of English proficiency, including Admission and Full proficiency. For applicants to online programs, Full proficiency is required.

## Graduate Admissions

The departmental graduate admissions committee reviews the record of each applicant. Admission is based on background, preparation, test scores, and academic performance. The committee considers each candidate's overall academic record in the context of the institution(s) from which the record was received. A graduate student should have a broad undergraduate background in natural science and math, including calculus, physics, chemistry, organismal biology, genetics, ecology, and evolutionary biology. Faculty recommendations, honors, awards, undergraduate research experience, publications, and professional experience also are considered. Enthusiasm, scientific expertise, and clarity of writing as evidenced by the applicant's essay are particularly important.

The master's degree is not a prerequisite for entering a Ph.D. program. Non-native speakers of English must meet English proficiency requirements as described on the English Proficiency Requirements policy (<https://policy.ku.edu/graduate-studies/english-proficiency->

[international-students/](https://policy.ku.edu/graduate-studies/english-proficiency-)). For more details on admission requirements, visit the EEB website (<https://eeb.ku.edu/>).

Applicants are encouraged to seek a faculty sponsor through correspondence with one or more faculty members prior or during the application process. For a list of EEB faculty, please see the EEB Faculty (<https://eeb.ku.edu/faculty/>) page. Interested students are encouraged to visit campus to meet faculty members and graduate students. Graduate school is critically important in beginning a career, and the choice of a program in which to enroll should be made carefully.

The number of students admitted is limited. Qualified candidates may be denied admission because of lack of a faculty sponsor, financial support, or research facilities.

Applications and supplemental materials may be submitted online. For a detailed description of the application process, visit the EEB website (<https://eeb.ku.edu/>). All application requirements, including the deadline for application receipt, can be found on the EEB Admissions (<https://eeb.ku.edu/how-apply/>) page. Only complete applications are considered.

## Ph.D. Degree Requirements: Ecology and Evolutionary Biology

### Required Course Work

Most course work requirements for EEB graduate students are identified during the student's Preliminary Advisory Meeting. Students are expected to take graduate-level courses (or have equivalent knowledge) in ecology, evolution, and systematics. Listed below are specific course requirements for all doctoral students in the EEB department:

Code	Title	Hours
BIOL 805	Scientific Integrity in Ecology and Evolutionary Biology	1
BIOL 801	Topics in: _____ (Core Topics in Current EEB Research Seminar)	1
BIOL 841	Biometry I	5
Other coursework determined by student's advisor and committee		15
Total Hours		22

## Assistantships

Doctoral students must complete at least 2 semesters of half-time supervised teaching, curatorial, or research assistantships. Alternative experiences may be approved by the student's advisory committee.

## Research Skills and Responsible Scholarship

The University requires that every doctoral student receive training in responsible scholarship pertinent to the field of research and obtain research skills pertinent to the doctoral level of research in their field(s). These requirements must be completed by the end of the semester that the student takes the oral comprehensive exam. For students in Ph.D. EEB program, this requirement is satisfied by completion of:

1. BIOL 805 Scientific Integrity in Ecology and Evolutionary Biology
2. BIOL 801 Core Topics in Current EEB Research
3. BIOL 841 Biometry I

In addition, students must develop, in consultation with their preliminary advisory committees, a list of additional research skills that will be necessary for successful completion of the doctoral program; these

skills may include fluency in English (if not the native language); fluency (reading or speaking) in other foreign languages; and skills such as scientific illustration, phylogenetic methods, genomic analysis, geographic information systems, advanced mathematics and statistics, computer programming, biochemical analyses, advanced microscopy, and others. These research skills will be determined initially by the student's Preliminary Advisory Meeting and Research Advisory committees, with the potential for modification as specific dissertation plans evolve, proposed in a letter to the graduate academic advisor of the department, and approved by the Graduate Program Committee; successful fulfillment will be determined by the student's Research Advisory Committee, documented in a letter to the graduate academic advisor of the department.

## Engagement and Enrollment in Doctoral Programs

Graduate Studies requires all doctoral students to complete 2 semesters of full-time study at KU or the equivalent spread over several part-time semesters prior to the semester in which the Comprehensive Oral Examination is held. See the Engagement and Enrollment in Doctoral Programs policy (<https://policy.ku.edu/graduate-studies/engagement-enrollment-doctoral-programs/>) for complete details.

## Comprehensive Oral Examination

The comprehensive oral examination tests the depth and breadth of the student's knowledge and explores the student's ability to synthesize information and think critically. The examination should include, but is not limited to, questions relating to ecology and evolutionary biology, as well as information directly relevant to the proposed field of dissertation research. Examination committee members determine the questions, but the following is a suggested outline for oral comprehensive exams, in roughly equal proportions:

- General ecology and evolutionary biology
- Research area (e.g., ecology, systematics, or evolutionary genetics)
- Specific research foci (e.g., sub-fields of research areas, taxonomic specialization, specific analytical methods)

Students are encouraged to take the examination within four semesters of entering the program and are expected to complete the examination within five semesters. To be eligible to take the examination, both the Research Skills and Responsible Scholarship requirement and the Engagement and Enrollment requirement must be fulfilled and documented.

Note: EEB requires a 5 person committee consisting of a majority of EEB faculty. Doctoral committees must comply with the Graduate Studies policy on doctoral committee composition (<https://policy.ku.edu/graduate-studies/doctoral-student-oral-exam-committee-composition/>).

## Annual Evaluations

Once each year after completing 3 semesters of study, the student must schedule a meeting with his or her Research Advisory Committee to discuss progress towards the completion of the dissertation and any other concerns.

## Post-comp Enrollment

Starting the semester following successful completion of the oral comprehensive exam, students must enroll in accordance with the Office of Graduate Studies' Doctoral Candidacy Policy (<https://policy.ku.edu/>

[graduate-studies/doctoral-candidacy/](https://policy.ku.edu/)). This enrollment includes, but is not limited to, at least 1 dissertation hour every semester until graduation. See the Doctoral Candidacy policy for more information about this University level requirement.

## Dissertation Proposal

All doctoral students must prepare a dissertation proposal of 5–8 pages, with detail and clarity on par with NSF, NIH, or comparable proposals. Chapters should be described in sufficient detail that their committee members can assess scientific merit, feasibility, and whether the doctoral dissertation will fulfill the scope and requirements for a Ph.D. Dissertation proposals must be approved by the student's committee by the time the student submits their second annual report to the department (end of 5 semesters).

## Research Progress, Final Oral Examination, and Dissertation Defense

After passing the comprehensive oral examination and advancing to degree candidacy, doctoral students are expected to focus on completing original research and writing of the dissertation. Although opportunities for taking valuable courses may arise, the majority of a doctoral candidate's enrollment should be in dissertation credits (BIOL 999 Doctoral Dissertation ).

Dissertation credits use the No Progress (NP), Limited Progress (LP), and Satisfactory Progress (SP) grading scale. Receiving NPs or LPs may result in an "unsatisfactory" annual evaluation. Unsatisfactory annual evaluations may trigger a remediation process that could impact the student's academic standing.

It is generally expected that the dissertation should be completed two to three years after advancing to candidacy. During these years, the student should continue to meet with his or her advisory committee on an annual basis to receive guidance on research progress. Committee membership must follow departmental and university requirements.

The dissertation defense and final oral examination include a presentation of the candidate's dissertation as a formal, public lecture. The presentation is followed by a question period, after which the final oral examination committee meets with the student for further discussion of the dissertation. A majority vote of the committee is required for the student to pass the examination; 80 percent of the committee must agree to award a student Honors. Both the dissertation and the presentation are considered in the decision.

At the completion of this program, students will be able to:

- Demonstrate an understanding of ecology and evolutionary biology.
- Demonstrate an understanding of best research practices & ethics in EEB.
- Demonstrate the ability to perform independent research in ecology and/or evolutionary biology.
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