DOCTOR OF PHILOSOPHY (PHD) DEGREE IN THE FIELD OF ECOLOGY AND EVOLUTIONARY BIOLOGY

Program Learning Outcomes for the PhD Degree in the field of Ecology and Evolutionary Biology

Upon completing the PhD degree in the field of Ecology and Evolutionary Biology, students will be able to:

1. Demonstrate an ability to understand and critically evaluate concepts, research accomplishments, and techniques in ecology and evolutionary biology.
2. Demonstrate independent problem solving and critical thinking skills by identifying novel research questions in ecology and evolutionary biology and synthesizing critical paths towards answering them.
3. Demonstrate technical proficiency in a range of ecology and evolutionary biology research methods.
4. Demonstrate the effective written communication skills required for scientific publications, grant proposal submissions, and a thesis describing independent research.
5. Demonstrate the effective oral and visual communication skills necessary for articulating scientific findings and significance to diverse audiences.

Requirements for the PhD Degree in the field of Ecology and Evolutionary Biology

For general university requirements, please see Doctoral Degrees (https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-doctoral-degrees/). For additional requirements, regulations, and procedures for all graduate programs, please see All Graduate Students (https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/). Students pursuing the PhD Degree in the field of Ecology and Evolutionary Biology must complete the requirements as listed below.

Course Requirements

Most of the formal course studies will be completed in the first year of residence to allow the students to begin thesis research at the end of their second semester at Rice. Entering students will meet with their faculty advisor to form a course of study of the first year. Students should have completed coursework in ecology, evolution (or equivalent), mathematics (including calculus), and statistics prior to admission. Deficiencies in these subject areas should be made up during the first year of residence; some may be waived at the discretion of the EEB Graduate Advising Committee and the EEB Graduate Program Director.

The following Rice courses must be taken if students lack coursework in ecology or evolution in their final undergraduate transcript:

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>BIOS 332</td>
<td>ECOLOGY</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 334</td>
<td>EVOLUTION</td>
<td>3</td>
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Summary

Total Credit Hours Required for the PhD Degree in the field of Ecology and Evolutionary Biology

90

Degree Requirements

<table>
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<th>Code</th>
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Core Requirements

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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>BIOS 569</td>
<td>CORE COURSE IN ECOLOGY AND EVOLUTIONARY BIOLOGY (course repeatable for credit)</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 584</td>
<td>GRADUATE SEMINAR IN ECOLOGY AND EVOLUTIONARY BIOLOGY (required in all years of residency, fall semester)</td>
<td>1 credit hour per year</td>
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<tr>
<td>BIOS 586</td>
<td>GRADUATE SEMINAR IN ECOLOGY AND EVOLUTIONARY BIOLOGY (required in all years of residency, spring semester)</td>
<td>1 credit hour per year</td>
</tr>
<tr>
<td>BIOS 591</td>
<td>GRADUATE TEACHING IN ECOLOGY AND EVOLUTIONARY BIOLOGY (two semesters)</td>
<td>3 credit hours per semester</td>
</tr>
<tr>
<td>BIOS 801</td>
<td>ECOLOGY &amp; EVOLUTIONARY BIOLOGY GRADUATE RESEARCH</td>
<td>1-15</td>
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</tbody>
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Select 2 courses from the following (2 semesters of any combination of BIOS "Topics" courses): 2 credit hours or more

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<thead>
<tr>
<th>Code</th>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>BIOS 561</td>
<td>TOPICS IN EVOLUTION</td>
<td></td>
</tr>
<tr>
<td>BIOS 562</td>
<td>TOPICS IN EVOLUTION (SPRING)</td>
<td></td>
</tr>
<tr>
<td>BIOS 563</td>
<td>TOPICS IN ECOLOGY</td>
<td></td>
</tr>
<tr>
<td>BIOS 568</td>
<td>TOPICS IN ECOLOGY (SPRING)</td>
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Thesis Requirement

Completion and public defense of a thesis embodying the results of an original investigation

Additional Coursework as Approved by Department

| Total Credit Hours | Minimum of 90 |

Footnotes and Additional Information

1 Students must complete 2 semesters of BIOS 591 during their first 4 semesters to gain teaching experience; additional teaching experiences are available on an optional basis.
2 BIOS 801 Ecology & Evolutionary Biology Graduate Research credit hours vary depending on the number of other courses the student is taking in a given semester.
3 At least two topics courses must be completed before candidacy. Students are strongly encouraged to take at least one topics course per semester during all years of residency.

Evaluation of Progress in Graduate Study

Students must maintain a minimum grade average of B (3.00 grade points) in courses taken in the department and satisfactory grades in courses taken outside the department. Students must demonstrate
satisfactory progress in their degree program in annual reviews by the EEB faculty. The review process requires that each student:

- Presents a public seminar on his/her research at the annual EEB Graduate Student Symposium
- Prepares a written report on his/her progress

First-year students must also participate in a meeting with the EEB Graduate Advising Committee.

**PhD Degree Program**

In addition to the general university requirements and those listed above, the PhD degree in Ecology and Evolutionary Biology requires:

- Passing the qualifying examination given by the thesis committee. (The committee will be composed of at least three members. Two, including the committee chair, must be members of the student’s department faculty; in doctoral thesis committees one member must have his or her primary appointment in another department within the university.)
- Completing an original investigation and a doctoral thesis with at least three chapters with the potential to produce publications in reputable, peer-reviewed scientific journals.
- Presenting a departmental seminar on the research.
- Publicly defending the doctoral thesis.

**Policies for the PhD Degree in the field of Ecology and Evolutionary Biology**

**Ecology and Evolutionary Graduate Program Handbook**

The General Announcements (GA) is the official Rice curriculum. As an additional resource for students, Ecology and Evolutionary Biology publishes a graduate program handbook, which can be found here: https://gradhandbooks.rice.edu/2020_21/Ecology_Evolutionary_Biology_Graduate_Handbook.pdf

**Admission**

Applicants for graduate study in the Ecology and Evolutionary Biology Program must have:

- BA or BS degree or equivalent that provides a strong background in biology
- Strong ability and motivation, as indicated by academic record, Graduate Record Examination (GRE) scores, and recommendations
- Scores from the GRE biology subject exam are optional but can be helpful, particularly for students with nontraditional backgrounds in biology

These requirements do not preclude admission of qualified applicants who have majored in areas other than biology. Although the program offers MS degrees, only on rare occasions are students who do not intend to pursue the PhD admitted to the graduate program. For general university requirements, see Graduate Degrees (https://qa.rice.edu/graduate-students/academic-opportunities/degrees/).

**Additional Information**

For additional information, please see the BioSciences website: https://biosciences.rice.edu/