

# ENTOMOLOGY, PHD

*for the degree of Doctor of Philosophy in Entomology*

The Department of Entomology offers graduate programs leading to the Master of Science and Doctor of Philosophy degrees. The program is designed to accommodate incoming students with a wide range of entomological expertise. The goal of the program is to provide students with a strong background in basic biology as it relates to insects and to equip them with the specialized intellectual and technical skills to pursue a career in research, teaching, and service in entomology and related biological disciplines.

Major areas of specialization within the department include systematics, evolutionary biology, molecular genetics, genomics, chemical ecology, disease ecology, invasion biology, toxicology, pollinator health, social insect biology, insect-microbe interactions, conservation biology, and integrated pest management.

## Admission

The Graduate Record Examination (GRE) general test scores are not required by our Department but can be submitted if they will support your application. A minimum Test of English as a Foreign Language (TOEFL) score of 550 (paper-based test), 213 (computer-based test), or 79 (internet-based test), or an International English Language Testing System (IELTS) score of 6.5, is required. Previous training in entomology is unnecessary. It is recommended that students who intend to study for advanced degrees in entomology gain a thorough grounding in the physical and biological sciences, mathematics, and the liberal arts. Spring admission is possible for special circumstances.

## Graduate Teaching Experience

Although teaching is not a general Graduate College requirement, experience in teaching is considered an important part of the graduate experience in this program and serving as a teaching assistant for at least two semesters is required.

## Financial Aid

Graduate student awards are available, including teaching and research assistantships. In addition, fellowships, and traineeships are offered by the Graduate College and the School of Integrative Biology. A single application to the department is sufficient for consideration for all awards currently available.

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A candidate for the Ph.D. degree should be conversant with entomological aspects of ecology, genetics, systematics, physiology, and integrated pest management. The candidate must demonstrate professional competence in a specialized area by presenting an acceptable thesis based on original research designed in consultation with a faculty adviser and approved by a graduate faculty thesis committee.

For additional details and requirements refer to the department's Graduate Handbook (<http://www.life.illinois.edu/>

[entomology/handbook.html](http://entomology/handbook.html)) and the Graduate College Handbook (<http://www.grad.illinois.edu/gradhandbook/>).

### Entering with approved M.S./M.A. degree

Code	Title	Hours
ENT 599	Thesis Research (maximum of 55 hours applied toward degree)	55
<b>Core curriculum minimum 9 hours</b>		<b>9</b>
<b>One of the following Statistical or Analytical Skills courses:</b>		
IB 494	Theoretical Biology + Models	
IB 501	Programming for Genomics	
IB 517	Analysis of Biological Data in R	
CHBE 571	Bioinformatics	
CPSC 440	Applied Statistical Methods I	
NRES 421	Quantitative Methods in NRES	
NRES 454	GIS in Natural Resource Mgmt	
NRES 595	Advanced Quantitative Techniques for Ecology and Conservation	
<b>Seminar: must register for every term enrolled (6 hours minimum)</b>		
IB 526	Seminar in Entomology	
<b>Remaining hours to total 64 hours from the following list of courses:</b>		
Additional courses from the list below may be required in consultation with your advisor. The first five courses are most recommended.		
IB 433	Insect Physiology	
IB 444	Insect Ecology	
IB 468	Insect Classification and Evol	
IB 482	Insect Pest Management	
IB 504	Genomic Analysis of Insects	
IB 416	Population Genetics	
IB 426	Env and Evol Physl of Animals	
IB 432	Genes and Behavior	
IB 439	Biogeography	
IB 452	Ecosystem Ecology	
IB 453	Community Ecology	
IB 481	Vector-borne Diseases	
IB 501	Programming for Genomics	
IB 517	Analysis of Biological Data in R	
IB 526	Seminar in Entomology	
FSHN 480	Basic Toxicology	
CPSC 437	Principles of Agroecology	
MCB 435	Evolution of Infectious Disease	
CHBE 571	Bioinformatics	
<b>Total Hours</b>		<b>64</b>

### Entering with approved B.S./B.A. degree

Code	Title	Hours
ENT 599	Thesis Research (maximum of 69 hours applied toward degree)	69
<b>Core curriculum minimum 20 hours</b>		<b>20</b>
<b>Select at least 11 hours from the following courses:</b>		

IB 433	Insect Physiology
IB 444	Insect Ecology
IB 468	Insect Classification and Evol
IB 482	Insect Pest Management
IB 504	Genomic Analysis of Insects
One of the following Statistical or Analytical Skills courses:	
IB 494	Theoretical Biology + Models
IB 501	Programming for Genomics
IB 517	Analysis of Biological Data in R
CHBE 571	Bioinformatics
CPSC 440	Applied Statistical Methods I
NRES 421	Quantitative Methods in NRES
NRES 454	GIS in Natural Resource Mgmt
NRES 595	Advanced Quantitative Techniques for Ecology and Conservation
Seminar: must register for every term enrolled (6 hours minimum)	
IB 526	Seminar in Entomology
Remaining hours to total 96 hours from the following list of courses:	
The first five courses are most recommended.	
IB 433	Insect Physiology
IB 444	Insect Ecology
IB 468	Insect Classification and Evol
IB 482	Insect Pest Management
IB 504	Genomic Analysis of Insects
IB 416	Population Genetics
IB 426	Env and Evol Physl of Animals
IB 432	Genes and Behavior
IB 439	Biogeography
IB 452	Ecosystem Ecology
IB 453	Community Ecology
IB 481	Vector-borne Diseases
IB 501	Programming for Genomics
IB 517	Analysis of Biological Data in R
IB 526	Seminar in Entomology
FSHN 480	Basic Toxicology
CPSC 437	Principles of Agroecology
MCB 435	Evolution of Infectious Disease
CHBE 571	Bioinformatics
Total Hours	96

Other Requirements

Requirement	Description
Other requirements may overlap	
Preliminary Exam Required	Yes
Teaching required?	Yes (2 semester min)
Final Exam/Dissertation Defense Required	Yes
Dissertation Deposit Required	Yes

Minimum 500-level Hours Required	12
Overall:	
Minimum GPA:	3.0

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1. Synthesize and apply core knowledge related to the field of Entomology, particularly from the areas covered in the core courses and the advanced topic seminars.
2. Design and implement independent research, with the overarching goal to obtain mastery of relevant approaches for their area of research
3. Apply rigorous statistical/analytical methods that typify their area of study
4. Demonstrate effective communication skills
  - a. Presentations
  - b. Publications
5. Obtain teaching experience
6. Learn grant and fellowship application writing
7. Acquire other professional skills
  - a. Data management
  - b. Citation management
  - c. Public Outreach/Science Communication
  - d. Research and Professional Ethics

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Graduate Degree Programs in Entomology

- Entomology, MS (<http://catalog.illinois.edu/graduate/las/entomology-ms/>)
  - concentration: Computational Science & Engineering (<http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/>)
- Entomology, PhD (p. 1)
  - concentration: Computational Science & Engineering (<http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/>)

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Department of Entomology

Chair of Department: May R. Berenbaum  
Co-Directors of Graduate Studies: Alexandra Harmon-Threatt and Adam Dolezal  
Entomology Department website (<https://sib.illinois.edu/entomology/>)  
Entomology Department faculty (<https://sib.illinois.edu/departments/entomology/directory/faculty/>)  
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## College of Liberal Arts & Sciences

College of Liberal Arts & Sciences website (<https://las.illinois.edu/>)

### Admissions

Entomology Department Admissions & Requirements (<https://sib.illinois.edu/departments/entomology/graduate-admissions-entomology/>)

Graduate College Admissions & Requirements (<https://grad.illinois.edu/admissions/apply/>)