

# ENTOMOLOGY, MS

*for the degree of Master of Science 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 M.S. degree is expected to become knowledgeable in entomology through coursework and independent research and to complete a research thesis in an area of interest chosen in consultation with an adviser.

For additional details and requirements refer to the department's Graduate Handbook (<http://www.life.illinois.edu/entomology/handbook.html>) and the Graduate College Handbook (<http://www.grad.illinois.edu/gradhandbook/>).

### Thesis Option MS

| Code  | Title   | Hours     |
|---|---|-----------|
| ENT 599   | Thesis Research (12 max applied toward degree)                | 12        |
| <b>Core curriculum minimum 13 hours</b>                                     |   | <b>13</b> |
| <b>Select at least 7 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                                   |           |
| <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 (3 hours minimum)</b>     |   |           |
| IB 526  | Seminar in Entomology   |           |
| <b>Remaining hours to total 32 hours from the following list of courses</b> |   |           |
| 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>32</b> |

### Other Requirements

| Requirement                     | Description |
|---------------------------------|-------------|
| Other requirements may overlap  |             |
| Masters Thesis Defense Required | Yes         |

Masters Thesis Deposit Required Yes

Minimum 500-level Hours Required 12

Overall:

Minimum GPA: 3.0

### Non-Thesis Option MS

Students need Departmental approval for this degree option.

| Code  | Title   | Hours     |
|---|---|-----------|
| <b>Core curriculum minimum 13 hours</b>                                     |   | <b>13</b> |
| <b>Select at least 7 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                                   |           |
| <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 (3 hours minimum)</b>     |   |           |
| IB 526  | Seminar in Entomology   |           |
| <b>Remaining hours to total 32 hours from the following list of courses</b> |   |           |
| 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   |           |
| IB 590  | Individual Topics   |           |
| FSHN 480  | Basic Toxicology  |           |
| CPSC 437  | Principles of Agroecology                                     |           |
| MCB 435   | Evolution of Infectious Disease                               |           |
| CHBE 571  | Bioinformatics  |           |
| <b>Total Hours</b>  |   | <b>32</b> |

### Other Requirements

| Requirement                      | Description |
|----------------------------------|-------------|
| Other requirements may overlap   |             |
| Minimum 500-level Hours Required | 12          |
| Overall:                         |             |
| Minimum GPA:                     | 3.0         |

for the degree of Master of Science in Entomology

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

320 Morrill Hall, 505 South Goodwin Avenue, Urbana, IL 61801  
(217) 333-2910

Entomology email: [entowork@life.illinois.edu](mailto:entowork@life.illinois.edu)

## **College of Liberal Arts & Sciences**

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

## **Admissions**

Entomology Department Admissions & Requirements ([https://sib.illinois.edu/entomology/graduate\\_admissions/](https://sib.illinois.edu/entomology/graduate_admissions/))

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