ENTOMOLOGY AND NEMATOLOGY | BASIC SCIENCE

Entomology and nematology are biological sciences dealing with insects, mites, ticks, spiders, and nematodes.

About this Program

- **College**: Agricultural and Life Sciences
- **Degree**: Bachelor of Science
- **Credits for Degree**: 120
- **Specializations**: Basic Science | Biosecurity | Ecotourism | Preprofessional | Urban Pest Management
- **Additional Information**
- **Related Entomology and Nematology Programs**

To graduate with this major, students must complete all university, college, and major requirements.

The Department of Entomology and Nematology offers the major. Faculty within the department cover areas in systematics, ecology, medically significant arthropods, social insects, insect management, physiology, behavior, evolution and natural ecosystem cycles. The department has a long tradition of sending students to medical, veterinary and dental school. Graduate school prospects are also high and employment options using entomology are versatile.

Related Entomology and Nematology Programs

- Combined Degree
- Entomology and Nematology minor

Basic Science

This option prepares students for entry to entomological careers and to graduate school. Except with undergraduate coordinator permission, students are expected to complete the following courses on campus; other ENY courses can be taken online:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENY 3005</td>
<td>Principles of Entomology</td>
<td>2</td>
</tr>
<tr>
<td>ENY 3005L</td>
<td>Principles of Entomology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ENY 4161</td>
<td>Insect Classification</td>
<td>3</td>
</tr>
<tr>
<td>ENY 4660</td>
<td>Medical and Veterinary Entomology</td>
<td>2</td>
</tr>
<tr>
<td>ENY 4660L</td>
<td>Medical and Veterinary Entomology Laboratory</td>
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Minimum grades of C are required for all core courses. Students must maintain a 2.0 cumulative GPA for specialization electives with no individual course grade less than C.

Critical Tracking

Critical Tracking records each student's progress in courses that are required for entry to each major. Please note the critical-tracking requirements below on a per-semester basis.

Equivalent critical-tracking courses as determined by the State of Florida Common Course Prerequisites may be used for transfer students.

Semester 1

- Complete 2 of 5 critical-tracking courses, excluding labs:
  - BSC 2010/BSC 2010L or BOT 2010C, BSC 2011/BSC 2011L, CHM 2045/CHM 2045L, CHM 2046/CHM 2046L, MAC 2233
  - 2.5 GPA on math and science courses
  - 2.0 UF GPA required

Semester 2

- Complete 1 additional critical-tracking course, excluding labs
  - 2.5 GPA on math and science courses
  - 2.0 UF GPA required

Semester 3

- Complete 1 additional critical-tracking course, excluding labs
  - 2.5 GPA on math and science courses
  - 2.0 UF GPA required

Semester 4

- Complete 1 additional critical-tracking course, excluding labs
  - 2.5 GPA on math and science courses
  - 2.0 UF GPA required

Semester 5

- Complete all critical-tracking courses, including labs
  - 2.5 GPA on math and science courses
  - 2.0 UF GPA required

Model Semester Plan

All entomology majors in the basic science track must take three credits of ENY 4905. See advisor for details.

To remain on track, students must complete the appropriate critical-tracking courses, which appear in bold. These courses must be completed by the terms as listed above in the Critical Tracking criteria.

This semester plan represents an example progression through the major. Actual courses and course order may be different depending on the student's academic record and scheduling availability of courses. Prerequisites still apply.

<table>
<thead>
<tr>
<th>Course Semester One Title</th>
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<tbody>
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<td>Select one:</td>
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<th>Course Semester One Title</th>
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<tr>
<td>BSC 2010 &amp; 2010L Integrated Principles of Biology 1 and Integrated Principles of Biology Laboratory 1 (Critical Tracking; Gen Ed Biological Sciences)</td>
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<tr>
<td>BOT 2010C Introductory Botany (Critical Tracking; State Core Gen Ed Biological Sciences)</td>
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<tr>
<td>Select one:</td>
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<tr>
<td>ENC 1101 Expository and Argumentative Writing</td>
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<tr>
<td>ENC 2210 Technical Writing</td>
</tr>
<tr>
<td>ENC 3254 Professional Writing in the Discipline (State Core Gen Ed Composition; Writing Requirement)</td>
</tr>
</tbody>
</table>
IUF 1000  What is the Good Life (Gen Ed Humanities)  3
MAC 2233  Survey of Calculus 1 (Critical Tracking; State Core Gen Ed Mathematics)  3
State Core Gen Ed Social and Behavioral Sciences  3
Credits  15-16

Semester Two
Select one:  3-4
AEB 2014  Economic Issues, Food and You
AEB 3103  Principles of Food and Resource Economics (Gen Ed Social and Behavioral Sciences)
ECO 2023  Principles of Microeconomics
BSC 2011 & 2011L  Integrated Principles of Biology 2 and Integrated Principles of Biology Laboratory 2 (Critical Tracking; Gen Ed Biological Sciences)
STA 2023  Introduction to Statistics 1 (Gen Ed Mathematics )
State Core Gen Ed Humanities  3
Gen Ed Social and Behavioral Sciences  3
Credits  16-17

Semester Three
AEC 3033C  Research and Business Writing in Agricultural and Life Sciences  3
CHM 2045 & 2045L  General Chemistry 1 and General Chemistry 1 Laboratory (Critical Tracking; State Core Gen Ed Biological and Physical Sciences)
PHY 2004 & 2004L  Applied Physics 1 and Laboratory for Applied Physics 1 (Gen Ed Physical Sciences)
Elective (Gen Ed International or Diversity)  1
Gen Ed Humanities  3
Credits  15

Semester Four
AEC 3033C  Research and Business Writing in Agricultural and Life Sciences  3
CHM 2046 & 2046L  General Chemistry 2 and General Chemistry 2 Laboratory (Critical Tracking; Gen Ed Physical Sciences)
PHY 2005 & 2005L  Applied Physics 2 and Laboratory for Applied Physics 2 (Gen Ed Physical Sciences)
Gen Ed Composition  3
Credits  14

Semester Five
AGR 3303  Genetics  3
ENY 3005 & 3005L  Principles of Entomology and Principles of Entomology Laboratory (Gen Ed Biological Sciences; both courses must be taken on campus)
Approved electives  1  6
Credits  16

Semester Six
Select one:  3-4
ALS 3153  Agricultural Ecology
PCB 3601C  Plant Ecology
PCB 4043C  General Ecology
ENY 4905  Problems in Entomology
Select one:
MCB 3020 & 3020L  Basic Biology of Microorganisms and Laboratory for Basic Biology of Microorganisms (Gen Ed Biological Sciences)
MCB 2000 & 2000L  Microbiology and Microbiology Laboratory (Gen Ed Biological Sciences)
Approved electives  4
Credits  14-15

Semester Seven
ENY 4161  Insect Classification (must be taken on campus)  3
ENY 4660 & 4660L  Medical and Veterinary Entomology and Medical and Veterinary Entomology Laboratory (must be taken on campus)
NEM 3002  Principles of Nematology  3
Approved electives  1  6
Credits  15

Semester Eight
Select one:  3-4
ENY 4453  Behavioral Ecology and Systematics
PCB 4043C  General Ecology
ALS 3153  Agricultural Ecology
ENY 4660 & 4660L  Medical and Veterinary Entomology and Medical and Veterinary Entomology Laboratory (must be taken on campus)
ZOO 4205C  Invertebrate Biodiversity
Approved electives  9
Credits  15-17
Total Credits  120

1 Pre-vet majors need appropriate animal science requirements as electives.

Academic Learning Compact
The entomology and nematology curriculum develops an excellent knowledge base and an understanding of concepts and fundamental practices. Through formal courses, laboratory experimentation and individual research experience, students will learn how the scientific method is applied to the biological world at the whole organism and population levels. Students will learn to evaluate hypotheses, to acquire and interpret experimental data, and to communicate results effectively in appropriate styles. Special focus will be on insect identification, morphology, behavior, physiology and ecology.

Before Graduating Students Must
• Pass the entomology and nematology competency exam, which will be tailored to individual specializations.
• Complete requirements for the baccalaureate degree, as determined by faculty.

Students in the Major Will Learn to
Student Learning Outcomes (SLOs)

Content
1. Identify insects and describe and explain insect morphology, physiology and behavior.

Critical Thinking
2. Acquire, analyze and synthesize entomological information.
Communication
3. Communicate proficiently in the sciences in oral and written forms.

Curriculum Map
I = Introduced; R = Reinforced; A = Assessed

<table>
<thead>
<tr>
<th>Courses</th>
<th>SLO 1</th>
<th>SLO 2</th>
<th>SLO 3</th>
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<tbody>
<tr>
<td>AEC 3030C</td>
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<td>AEC 3033C</td>
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Assessment Types
- Assignments
- Exams
- Course grades
- Research collection