ENTOMOLOGY AND NEMATOLOGY | URBAN PEST MANAGEMENT

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

Urban Pest Management
This specialization is for entry to the pest control industry. Students receive instruction about arthropods, nematodes, plant diseases and weeds with reference to the pest problems in residential and commercial property. A business curriculum prepares students for management responsibilities. Students planning to attend graduate school should consult an advisor for appropriate math, chemistry and physics courses.

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>
</tr>
</thead>
<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>
<td>1</td>
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</tbody>
</table>

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 2111/BSC 2111L, CHM 2045/CHM 2045L, MAC 1147, PHY 2020 or PHY 2004
- 2.0 GPA required for all critical-tracking courses
- 2.0 UF GPA required

**Semester 2**
- Complete 1 additional critical-tracking course, excluding labs
- 2.0 GPA required for all critical-tracking courses
- 2.0 UF GPA required

**Semester 3**
- Complete 1 additional critical-tracking course, excluding labs
- 2.0 GPA required for all critical-tracking courses
- 2.0 UF GPA required

**Semester 4**
- Complete 1 additional critical-tracking course, excluding labs
- 2.0 GPA required for all critical-tracking courses
- 2.0 UF GPA required

**Semester 5**
- Complete all critical-tracking courses, including labs
- 2.0 GPA required for all critical-tracking courses
- 2.0 UF GPA required

Model Semester Plan
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</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one:</td>
<td>Integrated Principles of Biology 1</td>
<td>3-4</td>
</tr>
<tr>
<td>&amp; 2010L</td>
<td>Integrated Principles of Biology Laboratory 1 <em>(Critical Tracking; Gen Ed Biological Sciences)</em></td>
<td></td>
</tr>
<tr>
<td>BOT 2010C</td>
<td>Introductory Botany <em>(Critical Tracking)</em></td>
<td></td>
</tr>
<tr>
<td>Select one:</td>
<td>Expository and Argumentative Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENC 2210</td>
<td>Technical Writing</td>
<td></td>
</tr>
</tbody>
</table>
ENC 3254  Professional Writing in the Discipline  
(State Core Gen Ed Composition; Writing Requirement)  
IUF 1000  What is the Good Life (Gen Ed Humanities)  
MAC 1147  Precalculus Algebra and Trigonometry  
(Critical Tracking; State Core Gen Ed Mathematics)  
Elective  
Semester Two  
BSC 2011  Integrated Principles of Biology 2  
& 2011L  and Integrated Principles of Biology Laboratory 2  
(CHM 1025  Introduction to Chemistry (if needed; or select an elective)  
Gen Ed Composition; Writing Requirement  
State Core Gen Ed Social and Behavioral Sciences  
Credits 14-15  
Semester Three  
AEC 3030C  Effective Oral Communication  
CHM 2045  General Chemistry 1  
& 2045L  and General Chemistry 1 Laboratory (Critical Tracking; State Core Gen Ed Physical Sciences)  
State Core Gen Ed Humanities  
Gen Ed Mathematics  
Credits 12  
Semester Four  
AEB 2014  Economic Issues, Food and You  
ECO 2023  Principles of Microeconomics (Gen Ed Social and Behavioral Sciences)  
AEC 3033C  Research and Business Writing in Agricultural and Life Sciences  
Select one:  
ALS 3203  PC Use in Agriculture (not Gen Ed Mathematics)  
COP 3504  Advanced Programming Fundamentals for CIS Majors (Gen Ed Mathematics)  
Select one:  
PHY 2004  Applied Physics 1 (Critical Tracking)  
PHY 2020  Introduction to Principles of Physics (Critical Tracking; Gen Ed Physical Sciences)  
PHY 2004L  Laboratory for Applied Physics 1 (or select an elective)  
Credits 13-14  
Summer After Semester Four  
ENY 3005  Principles of Entomology  
& 3005L  and Principles of Entomology Laboratory (Gen Ed Biological Sciences; must be taken on campus)  
ENY 3222C  Biology and Identification of Urban Pests  
Business elective  
Credits 9  
Semester Five  
ENY 4161  Insect Classification (must be taken on campus)  
Select one:  
MCB 2000  Microbiology  
& 2000L  and Microbiology Laboratory  
PLP 3002C  Fundamentals of Plant Pathology  
ORH 3513C  Environmental Plant Identification and Use  
STA 2023  Introduction to Statistics 1  
Credits 13  
Semester Six  
BCN 1210  Construction Materials  
Select one:  
FOS 4222  Food Microbiology  
& 4222L  and Food Microbiology Laboratory  
SWS 3022  Introduction to Soils in the Environment  
IPM 3022  Fundamentals of Pest Management  
Elective (Gen Ed International or Diversity)  
Credits 12-14  
Summer After Semester Six  
ENY 3225C  Principles of Urban Pest Management  
ENY 4230  Urban Pesticide Application  
Business elective  
Credits 9  
Semester Seven  
ENY 4660  Medical and Veterinary Entomology  
& 4660L  and Medical and Veterinary Entomology Laboratory (must be taken on campus)  
NEM 3002  Principles of Nematology  
PLS 4601C  Principles of Weed Science  
Business elective  
Credits 12  
Semester Eight  
BCN 3223C  Soils and Concrete  
EVS 3000  Environmental Science  
ENY 4453  Behavioral Ecology and Systematics  
Business elective  
Credits 13  
Total Credits 120  
1 Select an elective if PHY 2020 was taken.

Approved Electives

Business Electives: 12 Credits Minimum

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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>AEB 3122</td>
<td>Financial Planning for Agribusiness</td>
<td>3</td>
</tr>
<tr>
<td>AEB 3133</td>
<td>Principles of Agribusiness Management</td>
<td>3</td>
</tr>
<tr>
<td>AEB 3144</td>
<td>Introduction to Agricultural Finance</td>
<td>3</td>
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<tr>
<td>AEB 4085</td>
<td>Agricultural Risk Management and the Law</td>
<td>3</td>
</tr>
<tr>
<td>AEB 4123</td>
<td>Agricultural and Natural Resource Law</td>
<td>3</td>
</tr>
<tr>
<td>AEB 4424</td>
<td>Human Resources Management in Agribusiness</td>
<td>3</td>
</tr>
<tr>
<td>BUL 4310</td>
<td>The Legal Environment of Business</td>
<td>4</td>
</tr>
<tr>
<td>MAN 3025</td>
<td>Principles of Management</td>
<td>4</td>
</tr>
<tr>
<td>MAR 3023</td>
<td>Principles of Marketing</td>
<td>4</td>
</tr>
<tr>
<td>PUR 3000</td>
<td>Principles of Public Relations</td>
<td>3</td>
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Other Electives

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<tbody>
<tr>
<td>FOS 4202</td>
<td>Food Safety and Sanitation</td>
<td>2</td>
</tr>
<tr>
<td>ORH 3222C</td>
<td>Turfgrass Culture</td>
<td>4</td>
</tr>
<tr>
<td>ORH 4236C</td>
<td>Ornamental Landscape Management</td>
<td>3</td>
</tr>
<tr>
<td>PLP 3103C</td>
<td>Control of Plant Diseases</td>
<td>3</td>
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</table>
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 information 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

\( I = \text{Introduced}; \ R = \text{Reinforced}; \ A = \text{Assessed} \)

<table>
<thead>
<tr>
<th>Courses</th>
<th>SLO 1</th>
<th>SLO 2</th>
<th>SLO 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEC 3030C</td>
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<td>A</td>
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</tr>
<tr>
<td>AEC 3033C</td>
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<td>A</td>
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</tr>
<tr>
<td>ENY 3005</td>
<td>I, A</td>
<td>I, A</td>
<td>I</td>
</tr>
<tr>
<td>ENY 3005L</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENY 4161</td>
<td>R, A</td>
<td></td>
<td>R, A</td>
</tr>
</tbody>
</table>

Assessment Types

• Assignments
• Exams
• Course grades
• Research collection