ENTOMOLOGY AND NEMATOLOGY | BIOSECURITY

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 | Plant Protection | 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.

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:
  - 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

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.
Semester Five

ALS 4162 Consequences of Biological Invasions 3
ENY 3005 Principles of Entomology & 3005L and Principles of Entomology Laboratory (Gen Ed Biological Sciences; must be taken on campus)
PLP 3002C Fundamentals of Plant Pathology 4
PLS 3004C Principles of Plant Science or Principles of Horticulture Crop Production 3
Approved elective 3

Credits 16

Semester Six

ENY 4660 Medical and Veterinary Entomology 3
& 4660L and Medical and Veterinary Entomology Laboratory (must be taken on campus)
NEM 3002 Principles of Nematology 3
Select one:
PLP 3103C Control of Plant Diseases
IPM 3022 Fundamentals of Pest Management
ENY 3510C Turf and Ornamental Entomology
Approved elective 3
Law and policy elective 3

Credits 15

Summer After Semester Six

Approved internship 3

Credits 3

Semester Seven

ALS 4161 Exotic Species and Biosecurity Issues 3
ENY 4611 Insect Classification (must be taken on campus)
PLS 4601C Principles of Weed Science 3
Approved elective 3
Geographic information systems elective 3

Credits 15

Semester Eight

ALS 4163 Challenges in Plant Resource Protection 3
Approved electives 6
Approved internship 3

Credits 12

Total Credits 120

Law and Policy Elective: Select One

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>AGR 3303</td>
<td>Genetics</td>
<td>3</td>
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<tr>
<td>AGR 4214C</td>
<td>Applied Field Crop Production</td>
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<td>ALS 3133</td>
<td>Agricultural and Environmental Quality</td>
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<td>ALS 4161</td>
<td>Exotic Species and Biosecurity Issues</td>
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<tr>
<td>ALS 4162</td>
<td>Consequences of Biological Invasions</td>
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<tr>
<td>AOM 3333</td>
<td>Pesticide Application Techniques</td>
<td>3</td>
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<tr>
<td>BCH 3023</td>
<td>Elementary Organic and Biological Chemistry</td>
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<tr>
<td>BOT 3151C</td>
<td>Local Flora of North Florida</td>
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<tr>
<td>BOT 3503</td>
<td>Physiology and Molecular Biology of Plants</td>
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& 3503L and Physiology and Molecular Biology of Plants Laboratory 3

ENY 3222C | Biology and Identification of Urban Pests | 3       |
ENY 3228 | Urban Vertebrate Pest Management            | 2       |
ENY 3510C | Turf and Ornamental Entomology             | 3       |
ENY 3563 | Introduction to Tropical Entomology        | 3       |
ENY 4210 | Insects and Wildlife                       | 3       |
ENY 4455C | Social Insects                             | 3       |
ENY 4573 | Beekeeping                                  | 3       |
ENY 4701 | Forensic Entomology                        | 3       |
ENY 4905 | Problems in Entomology                     | 1-5     |
FOR 3004 | Forests, Conservation and People           | 3       |
FRC 3212 | Introduction to Citrus Culture and Production | 3   |
HOS 3305 | Introduction to Plant Molecular Biology    | 3       |
HOS 4304 | Horticultural Physiology                   | 3       |
IPM 3022 | Fundamentals of Pest Management            | 3       |
MCB 2000 | Microbiology                                | 4       |
& 2000L | and Microbiology Laboratory                |         |
ORH 3513C | Environmental Plant Identification and Use | 3       |
ORH 4242C | Arboriculture                               | 4       |
PCB 3063 | Genetics                                   | 4       |
PCB 3601C | Plant Ecology                              | 3       |
PHY 2005 | Applied Physics 2                          | 4       |
& 2005L | and Laboratory for Applied Physics         |         |
PLP 3103C | Control of Plant Diseases                  | 3       |
PLP 4222C | Introduction to Plant Virology             | 3       |
PLP 4242C | Introduction to Plant Bacteriology        | 3       |
PLP 4653C | Basic Fungal Biology                       | 4       |
PMA 4570C | Field Techniques in IPM                    | 4       |
PUR 3000 | Principles of Public Relations             | 3       |
SWS 3022 | Introduction to Soils in the Environment   | 4       |
& 3022L | and Introduction to Soils in the Environment Laboratory | |
SWS 4116 | Environmental Nutrient Management          | 3       |
WIS 2552 | Biodiversity Conservation: Global Perspectives | 3       |
WIS 3401 | Wildlife Ecology and Management            | 3       |
ZOO 4205C | Invertebrate Biodiversity                  | 4       |
ZOO 4307C | Vertebrate Biodiversity                    | 4       |

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.

Geographic Information Systems Elective: Select One

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<tr>
<td>FOR 3434C</td>
<td>Forest Resources Information Systems</td>
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<tr>
<td>URP 4273</td>
<td>Survey of Planning Information Systems</td>
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Approved Electives: 15 Credits

Other courses require advisor approval
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

<table>
<thead>
<tr>
<th>Courses</th>
<th>SLO 1</th>
<th>SLO 2</th>
<th>SLO 3</th>
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Assessment Types

• Assignments
• Exams
• Course grades
• Research collection