ENTOMOLOGY AND NEMATOLOGY | ECOTOURISM

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

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

Ecotourism
This specialization prepares students for professional careers in the ecotourism industry and is appropriate for employment with nature preserves, nature-based theme parks and in natural history education or nature-based recreation.

The program emphasizes the nature interpretation component of ecotourism, while including a core of recreation and tourism, management, economics and human ecology courses. A nature-based internship also is required.

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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</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>
</tr>
</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 211/BSC 211L, CHM 2045, MAC 1147, PHY 2004 or PHY 2020
• 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.
ENC 3254  Professional Writing in the Discipline (State Core Gen Ed Composition; Writing Requirement)  
IDS 1161  What is the Good Life (Gen Ed Humanities)  3  
MAC 1147  Precalculus Algebra and Trigonometry (Critical Tracking; Gen Ed Mathematics)  4  
Elective  2  

Semester Two  
ALS 3203  PC Use in Agriculture  3  
BSC 2011 & 2011L  Integrated Principles of Biology 2 and Integrated Principles of Biology Laboratory 2 (Critical Tracking)  4  
State Core Gen Ed Humanities  3  
State Core Gen Ed Mathematics  3  
State Core Gen Ed Social and Behavioral Sciences  3  
Credits  15-16  

Semester Three  
CHM 2045  General Chemistry 1 (Critical Tracking; State Core Gen Ed Biological and Physical Sciences)  3  
Select one:  3  
PHY 2004  Applied Physics 1 (Critical Tracking; Gen Ed Physical Sciences)  
PHY 2020  Introduction to Principles of Physics (Critical Tracking; Gen Ed Physical Sciences)  
Gen Ed Composition; Writing Requirement  3  
Gen Ed Humanities  3  
Credits  16  

Semester Four  
Select one:  4  
AEB 2014  Economic Issues, Food and You (Gen Ed Social and Behavioral Sciences)  
ECO 2023  Principles of Microeconomics (Gen Ed Social and Behavioral Sciences)  
AEC 3030C  Effective Oral Communication  3  
AEC 3033C  Research and Business Writing in Agricultural and Life Sciences  3  
Gen Ed Biological or Physical Sciences  3  
Credits  12  

Summer After Semester Four  
ENY 4905  Problems in Entomology (Practical Work Experience/Internship)  6-10  
Credits  6-10  

Semester Seven  
Select one:  3  
ENY 4210  Insects and Wildlife  
ENY 4660 & 4660L  Medical and Veterinary Entomology and Medical and Veterinary Entomology Laboratory (must be taken on campus)  4  
Management and economics elective  3-4  
Recreation and tourism elective  3  
Credits  13-14  

Semester Eight  
Select one:  3-4  
ENY 4453  Behavioral Ecology and Systematics  
PCC 4043C  General Ecology  
ALS 3153  Agricultural Ecology  
Human ecology elective  3  
Management and economics elective  3-4  
Vertebrate animal elective  3-4  
Credits  12-15  

Approved Electives  

Biophysical Resources Electives: 10-15 Credits
Choose at least one course from each group  
<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENY 3163</td>
<td>Invertebrate Field Biology</td>
<td>3</td>
</tr>
<tr>
<td>ZOO 4205C</td>
<td>Invertebrate Biodiversity</td>
<td>4</td>
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Vertebrate Animal  
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>WIS 3401</td>
<td>Wildlife Ecology and Management</td>
<td>3</td>
</tr>
<tr>
<td>ZOO 4307C</td>
<td>Vertebrate Biodiversity</td>
<td>4</td>
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<tr>
<td>ZOO 4472C</td>
<td>Avian Biology</td>
<td>4</td>
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Plant Identification  
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<tr>
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<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BOT 2710C</td>
<td>Practical Plant Taxonomy</td>
<td>3</td>
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<tr>
<td>BOT 2800C</td>
<td>Plants in Human Affairs</td>
<td>3</td>
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<tr>
<td>BOT 3151C</td>
<td>Local Flora of North Florida</td>
<td>3</td>
</tr>
<tr>
<td>FNR 3131C</td>
<td>Dendrology/Forest Plants</td>
<td>3</td>
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Physical Science  
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<th>Code</th>
<th>Title</th>
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<tr>
<td>GEO 2200</td>
<td>Physical Geography</td>
<td>3</td>
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<tr>
<td>GLY 2010C</td>
<td>Physical Geology</td>
<td>4</td>
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<tr>
<td>GLY 2100C</td>
<td>Historical Geology</td>
<td>4</td>
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<tr>
<td>SWS 3022</td>
<td>Introduction to Soils in the Environment</td>
<td>3</td>
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Ecology  
<table>
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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>FOR 3153C</td>
<td>Forest Ecology</td>
<td>3</td>
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<tr>
<td>PCB 3601C</td>
<td>Plant Ecology</td>
<td>3</td>
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<tr>
<td>PCB 4043C</td>
<td>General Ecology</td>
<td>4</td>
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Human and Social Dimensions Electives: 18-20 Credits
Choose at least two courses from each group  
<table>
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<th>Credits</th>
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<tbody>
<tr>
<td>FOR 2662</td>
<td>Forests for the Future</td>
<td>3</td>
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<tr>
<td>FOR 4664</td>
<td>Sustainable Ecotourism Development</td>
<td>3</td>
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<tr>
<td>LEI 3140</td>
<td>Philosophy and History of Recreation</td>
<td>3</td>
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<tr>
<td>LEI 3120</td>
<td>Introduction to Outdoor Recreation and Parks</td>
<td>3</td>
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<tr>
<td>LEI 3301</td>
<td>Principles of Travel and Tourism</td>
<td>3</td>
</tr>
<tr>
<td>LEI 3400</td>
<td>Recreation Program Design and Leadership</td>
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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

<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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<tr>
<td>AEC 3033C</td>
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<tr>
<td>ENY 3005</td>
<td>I, A</td>
<td>I, A</td>
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Assessment Types

• Assignments
• Exams
• Course grades
• Research collection