ENTOMOLOGY AND NEMATOLOGY | PREPROFESSIONAL

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

Preprofessional

This option provides preparation for programs in medicine, dentistry, optometry, veterinary, chiropractic, osteopathy and podiatry. Students should refer to the preprofessional information in the college’s admission section and they should contact the Office of Health and Legal Professions Advising in the Academic Advising Center, 100 Farrior Hall.

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>
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<tr>
<td>ENY 3005L</td>
<td>Principles of Entomology Laboratory</td>
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</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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</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 2011/BSC 2011L, CHM 2045/CHM 2045L, CHM 2046/CHM 2046L, MAC 2311
- 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

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>
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<tbody>
<tr>
<td>CHM 2045 &amp; 2045L</td>
<td>General Chemistry 1 and General Chemistry 1 Laboratory (Critical Tracking: State Core Gen Ed Physical Sciences)</td>
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Select one:

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENC 1101</td>
<td>Expository and Argumentative Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENC 2210</td>
<td>Technical Writing</td>
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<tr>
<td>ENC 3254</td>
<td>Professional Writing in the Discipline</td>
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(State Core Gen Ed Composition; Writing Requirement)
IUF 1000 What is the Good Life (Gen Ed Humanities) 3
MAC 2311 Analytic Geometry and Calculus 1 (Critical Tracking; State Core Gen Ed Mathematics) 4

Semester Two
Select one: 3-4
AEB 2014 Economic Issues, Food and You
ECO 2023 Principles of Microeconomics
AEB 3103 Principles of Food and Resource Economics (Gen Ed Social and Behavioral Sciences)
AEC 3030C Effective Oral Communication
CHM 2046 General Chemistry 2 and General Chemistry 2 Laboratory (Critical Tracking; State Core Gen Ed Physical Sciences)
STA 2023 Introduction to Statistics 1 (Gen Ed Mathematics )

State Core Gen Ed Humanities 3

Credits 14

Semester Three
AEC 3033C Research and Business Writing in Agricultural and Life Sciences 3
Select one: 3-4
BSC 2010 & 2010L Integrated Principles of Biology 1 and Integrated Principles of Biology Laboratory 1 (Critical Tracking)
BOT 2010C Introductory Botany (Critical Tracking; Gen Ed Biological Sciences)
CHM 2210 or CHM 3217 Organic Chemistry 1 or Organic Chemistry/Biochemistry 1
Gen Ed Composition; Writing Requirement 3
State Core Gen Ed Social and Behavioral Sciences 3

Credits 16-17

Semester Four
BSC 2011 & 2011L Integrated Principles of Biology 2 and Integrated Principles of Biology Laboratory 2 (Critical Tracking; Gen Ed Biological Sciences)
CHM 2211 or CHM 3218 Organic Chemistry 2 or Organic Chemistry/Biochemistry 2
CHM 2211L Organic Chemistry Laboratory 2
Elective 2
Elective (Gen Ed International or Diversity) 3

Credits 14-15

Semester Five
AGR 3303 Genetics 3
ENY 3005 & 3005L Principles of Entomology and Principles of Entomology Laboratory (Gen Ed Biological Sciences; must be taken on campus)
PHY 2053 & 2053L Physics 1 and Laboratory for Physics 1
Approved electives 4

Semester Six
Select one: 3-4
ENY 4455C Social Insects
ENY 4573 Beekeeping
ZOO 4205C Invertebrate Biodiversity

MCB 3020 Basic Biology of Microorganisms & 3020L and Laboratory for Basic Biology of Microorganisms 4
PHY 2054 Physics 2 & 2054L and Laboratory for Physics 2 5
Approved elective 3

Credits 15-16

Semester Seven
Select one: 4
BCH 3025 Fundamentals of Biochemistry
BCH 4024 Introduction to Biochemistry and Molecular Biology 1
ENY 4161 Insect Classification (Gen Ed Biological Sciences; must be taken on campus)
ENY 4660 Medical and Veterinary Entomology & 4660L and Medical and Veterinary Entomology Laboratory (must be taken on campus)

Approved electives 6

Credits 16

Semester Eight
Select one: 3-4
ENY 4453 Behavioral Ecology and Systematics
PCB 4043C General Ecology
ALS 3153 Agricultural Ecology
ZOO 4307C Vertebrate Biodiversity 4
Approved electives 8

Credits 15-16

Total Credits 120

Not required if CHM 3217/CHM 3218 was taken.

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 = 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>A</td>
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</tr>
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<td>ENY 4161</td>
<td>R, A</td>
<td></td>
<td>R, A</td>
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Assessment Types

- Assignments
- Exams
- Course grades
- Research collection