ENTOMOLOGY AND NEMATOLOGY

Not all courses are offered every semester. Refer to the schedule of courses for each term's specific offerings.
More Info (https://one.uf.edu/soc/)

Unless otherwise indicated in the course description, all courses at the University of Florida are taught in English, with the exception of specific foreign language courses.

Department Information

The Entomology and Nematology Department prepares students for exciting careers in a large variety of fields. Entomology and Nematology majors can enter medical, veterinary, or dental school; progress to graduate study in entomology, nematology, or any of several other biological sciences such as ecology and evolutionary biology, horticulture, or zoology; or move directly to a variety of careers (including industry and government positions) in fields such as pest management, agriculture, ecotourism, biosecurity, science policy, and education
Website (https://entnemdept.ufl.edu/)

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Map (http://campusmap.ufl.edu/#/index/0970)

Curriculum

- Beekeeping Certificate
- Combination Degrees
- Entomology and Nematology
- Entomology and Nematology Minor
- Entomology and Nematology Minor UF Online
- Landscape Pest Management Certificate
- Medical Entomology Certificate
- Pest Control Technology Certificate
- Urban Pest Management Certificate

Courses

ALS 2931 Agricultural Honors 1-4 Credits
Grading Scheme: Letter Grade
Various courses offered. (WR)
Prerequisite: refer to the department.
Attributes: Satisfies 6000 Words of Writing Requirement

ALS 3153 Agricultural Ecology 3 Credits
Grading Scheme: Letter Grade
Introduces the study of ecology from an agricultural perspective. Emphasizes ecological principles with examples and applications from agriculture.
Prerequisite: Sophomore standing or higher.

ALS 4161 Exotic Species and Biosecurity Issues 3 Credits
Grading Scheme: Letter Grade
Studies US policies and programs affecting agricultural biosecurity as applied to current agricultural and extension and regulatory programs. Emphasizes policies and procedures used to detect and report non-indigenous species. Develop the analytical capabilities to assess the consequences of agricultural biosecurity threats.
Prerequisite: BSC 2010/BSC 2010L and BSC 2011/BSC 2011L, or equivalent.

ALS 4162 Consequences of Biological Invasions 3 Credits
Grading Scheme: Letter Grade
Non-native species invasions and environmental effects of these invaders. Students will develop analytical capabilities to assess the consequences of biological invasions.
Prerequisite: BSC 2010/BSC 2010L and BSC 2011/BSC 2011L, or equivalent.

ALS 4163 Challenges in Plant Resource Protection 3 Credits
Grading Scheme: Letter Grade
Applied training in the regulatory aspects of plant protection, using real-world case studies, scenarios and issues.
Prerequisite: BSC 2010/BSC 2010L and BSC 2011/BSC 2011L, or equivalent.
Corequisite: HOS 3020C or ENY 3005/ENY 3005L or PLP 3002C.

ENY 1001 Bugs and People 3 Credits
Grading Scheme: Letter Grade
General education course for lower-division undergraduates who would like to learn popular information about insects and associated organisms. This course affords students the ability to critically examine and evaluate the principles of the scientific method, model construction, and use the scientific method to explain natural experiences and phenomena.
Attributes: General Education - Biological Science, General Education - International

ENY 2040 The Insects 3 Credits
Grading Scheme: Letter Grade
Introduction to the principles and practices of plant production systems. An overview of plant evolution, anatomy, physiology, improvement, pest, water and nutrient management as applied to a variety of plant production systems. This course affords students the ability to critically examine and evaluate the principles of the scientific method, model construction, and use the scientific method to explain natural experiences and phenomena.
Attributes: General Education - Biological Science

ENY 2041C Practical Beekeeping 3 Credits
Grading Scheme: Letter Grade
Establish colonies of European-derived honey bees and manage them to be healthy and productive. A hybrid approach combines online lectures and in-person field experiences.

ENY 2211 Bite Me? 3 Credits
Grading Scheme: Letter Grade
Arthropod-borne diseases represent some of the most dangerous and major challenges facing human health. They have shaped the course of history and have remained a threat. Everyone has, at one point or the other, been exposed to the nuisance and bites of arthropods and, therefore, potentially to the diseases they may carry. The effects of these arthropod-borne diseases on human health are increasing and spreading. Factors such as the development of resistant parasite strains to the currently available drugs, and the evolution of insecticide resistance to the currently available insecticides account for this increase and spread. Other factors such as constantly changing climate, trade, unplanned urbanization, changes in agricultural practices, and human travel also aid the establishment of these diseases thereby intensifying disease transmission or causing disease emergence in areas where they were previously unknown. This is a multidisciplinary course that covers concepts and topics from the fields of entomology, medicine, public health, biology, parasitology, microbiology, and veterinary medicine, and will address the interactions of arthropods to humans and the environment. It will present pressing issues relating to the impact of arthropods in public health and will also explore challenging questions such as “what are the emerging issues in vector biology and disease epidemiology”? and “what can be done to manage or prevent the occurrence of arthropod-borne diseases”? This course affords students the ability to critically examine and evaluate the principles of the scientific method, model construction, and use the scientific method to explain natural experiences and phenomena.
Attributes: Quest 2, General Education - Biological Science

ENY 2250 Biodiverse in a Changing World 3 Credits
Grading Scheme: Letter Grade
This course affords students the ability to critically examine and evaluate the principles of the scientific method, model construction, and use the scientific method to explain natural experiences and phenomena. This course affords students the ability to critically examine and evaluate the principles of the scientific method, model construction, and use the scientific method to explain natural experiences and phenomena.
Attributes: Quest 2, General Education - Biological Science

ENY 2890C Insect Research CURE 3 Credits
Grading Scheme: Letter Grade
Course-based Undergraduate Research Experience (CURE) which bridges the divide between the classroom and research laboratory. Become part of a collaborative research team and work with faculty mentors to collect publishable data that address pressing questions in the field of entomology. The specific research project changes each semester.

ENY 3005 Principles of Entomology 3 Credits
Grading Scheme: Letter Grade
Introduces basic principles of insect science, including insect diversity, evolution, morphology, physiology, behavior, and ecology, as well as applications of insect biology.
Prerequisite: ENY 1001 or BSC 2005 or BSC 2010 or sophomore standing.

ENY 3005L Principles of Entomology Laboratory 1 Credit
Grading Scheme: Letter Grade
Provides practical laboratory experience working with insects, dissecting insects and preparing lab reports. Insect collection is required.
Corequisite: ENY 3005.

ENY 3007C Life Science 3 Credits
Grading Scheme: Letter Grade
Introduces insects and their interactions with humans and the environment.
Prerequisite: Sophomore standing or higher.

ENY 3222C Biology and Identification of Urban Pests 3 Credits
Grading Scheme: Letter Grade
Biology, behavior, ID and damage recognition of insect and vertebrate pests.
Prerequisite: ENY 3005 and ENY 3005L.

ENY 3225C Principles of Urban Pest Management 3 Credits
Grading Scheme: Letter Grade
Methods of controlling household, structural and occasional pests with emphasis placed on cockroaches, termites and fleas.
Prerequisite: ENY 3005 and ENY 3005L.

ENY 3228 Urban Vertebrate Pest Management 2 Credits
Grading Scheme: Letter Grade
The biology, ecology, health risks, exclusions and control of vertebrate pests in the urban environment.
Prerequisite: Sophomore standing or higher.

ENY 3451C Insect Behavior 3 Credits
Grading Scheme: Letter Grade
Provides a theoretical and empirical overview of insect behavior, ranging from physiology underlying behavior to the evolution of behavioral diversity. Focuses on recent and current research on insect behavior, the diversity of approaches for studying it, and how this knowledge can be applied to solve human challenges.
Prerequisite: ENY 1001 or ENY 2040 or ENY 3005 or BSC 2005 or BSC 2010, or instructor permission.

ENY 3510C Turf and Ornamental Entomology 3 Credits
Grading Scheme: Letter Grade
Biology, identification, and management of arthropods that infect turfgrass and ornamental plants in urban landscape and in nurseries and greenhouses.
Prerequisite: Sophomore standing or higher.

ENY 3563 Introduction to Tropical Entomology 3 Credits
Grading Scheme: Letter Grade
Natural history, ecology and behavior of tropical insects in natural and agroecosystems. Designed for students without previous experience in tropics.
Prerequisite: ENY 3005 and ENY 3005L.

ENY 3564L Tropical Entomology Field Laboratory 2 Credits
Grading Scheme: Letter Grade
A 10-day trip to a tropical country to study the insect faunas of natural and agroecosystems. Each student is assigned a field project.
Prerequisite: ENY 3563.

ENY 3830 Spider Biology 2 Credits
Grading Scheme: Letter Grade
Introduces the biology of spiders and their relatives, with an emphasis on their ecology, behavior, and evolution. Learn to identify the members of approximately 20 common spider families as well as several common Florida species.
Prerequisite: sophomore standing.

ENY 3830L Spider Biology Lab 1 Credit
Grading Scheme: Letter Grade
Provides practical experience working with spiders, including field collection techniques, identification and curation of spider specimens, and observing spider behavior. Requires spider collection.
Prerequisite: Sophomore standing or above.
Corequisite: ENY 3830 or ZOO 4926.

ENY 4161 Insect Classification 3 Credits
Grading Scheme: Letter Grade
Classification of major families of adult insects with emphasis on their identification, habitat and niche. A properly curated collection is required.
Prerequisite: ENY 3005 and ENY 3005L.
Attributes: Artificial Intelligence

ENY 4201 Insect Ecology 3 Credits
Grading Scheme: Letter Grade
This course is an introduction to ecological concepts with emphasis on insects. The relationships of insects with their biotic and physical environments, along with the roles of insects in nature, will be emphasized. The basics of ecological research will be covered.
Prerequisite: BSC 2005 with a minimum grade of C or BSC 2010 with a minimum grade of C.

ENY 4201L Insect Ecology Lab 1 Credit
Grading Scheme: Letter Grade
Introduces ecological methods and analysis with an emphasis on insects. Emphasizes methods to explore relationships of insects with their biotic and physical environments, along with the roles of insects in nature. Also covers the basics of ecological research.
Prerequisite: (BSC 2005 and BSC 2005L) or (BSC 2010 and BSC 2010L), all with minimum grades of C.
Corequisite: ENY 4201.

ENY 4202 Ecology of Vector-Borne Disease 3 Credits
Grading Scheme: Letter Grade
Introduces critical components of vector-borne disease systems and basic concepts inherent to disease ecology. Focuses on vector-borne diseases of humans and wildlife and how aspects of the environment and host/vector biology influence disease transmission. Topics include epidemiology, transmission models, and emerging diseases.
Prerequisite: Junior or senior standing.

ENY 4208 Ecology and Conservation of Pollinators 3 Credits
Grading Scheme: Letter Grade
Examines interactions between animals and the plants that they pollinate, current threats to pollinator populations, and the conservation of pollinators worldwide; explore these topics through readings, discussion, and a field research project.
Prerequisite: BSC 2010 and BSC 2010L or equivalents with minimum grades of C-, and junior standing or higher.

ENY 4209 Global Change and Insect Declines 2 Credits
Grading Scheme: Letter Grade
Introduces the global impacts of anthropogenic change on insect diversity and abundance. Read pertinent papers on important topics such as pollution, pesticides, and climate change, followed by group discussions on how these factors impact insects both in Florida and globally.
Prerequisite: BSC 2005 or ENY 2040 or ENY 3005.

ENY 4210 Insects and Wildlife 3 Credits
Grading Scheme: Letter Grade
Introduces insects and other arthropods and their relationships with wild vertebrate animals.
Prerequisite: BSC 2005 or BSC 2010.

ENY 4221 Termite Biology and Control 2 Credits
Grading Scheme: Letter Grade
Taxonomy, identification, behavior, ecology, and methods of control for the economically important termites in the New World.
Prerequisite: Sophomore standing or higher.

ENY 4230 Pesticide Application 1-6 Credits
Grading Scheme: Letter Grade
Practical work experience in integrated pest management techniques, including identification, inspection, exclusion, proper application of pesticides, and IPM program evaluation in urban environments.
Prerequisite: ENY 3225C or ENY 3222C.

ENY 4453 Behavioral Ecology and Systematics 3 Credits
Grading Scheme: Letter Grade
Introduces behavioral ecology and systematics of insects.
Prerequisite: ENY 3005 and ENY 3005L.

ENY 4455C Social Insects 3 Credits
Grading Scheme: Letter Grade
Overview of social insect biology in the context of comparative social evolution. Topics include the diversity of social behaviors in insects, evolutionary origins of sociality, kin recognition, caste systems, communication in social groups, and impacts of social insects.
Prerequisite: BSC 2005 or BSC 2010 or equivalent with a minimum grade of C.

ENY 4571 Honey Bee Biology 3 Credits
Grading Scheme: Letter Grade
Provides an in-depth look into the fascinating world of honey bee biology. Explore topics including honey bee sociality, taxonomy, biogeography, behavior, anatomy, physiology, reproduction, nutrition and genetics. Additionally, these topics will be discussed via the paradigm of the honey bee superorganism.
Prerequisite: BSC 2005 or BSC 2010.

ENY 4573 Beekeeping I 3 Credits
Grading Scheme: Letter Grade
Examines the biology of honey bees and the craft of apiculture by exploring the life cycle of honey bees, biogeography, and evolution of beekeeping. Discusses equipment, techniques, management practices, pollination ecology, economic practices, and current issues within beekeeping.
Prerequisite: BSC 2005 or BSC 2010.

ENY 4574 Beekeeping II 3 Credits
Grading Scheme: Letter Grade
Provide more depth on topics introduced in ENY 4573, including beekeeping styles, colony stressors, and yearly management. Also explores issues affecting the beekeeping industry including integrated pest management, pests/diseases, African bees, commercial pollination, queen production, bee removals, and pesticides.
Prerequisite: ENY 4573.

ENY 4590C Mosquito Identification 3 Credits
Grading Scheme: Letter Grade
Intensive, hands-on training on morphological features and the identification of adult and larval mosquito species that occur in North America.
Prerequisite: junior standing or higher.

ENY 4592 Mosquito Biology 3 Credits
Grading Scheme: Letter Grade
This modular course covers six critical areas of mosquito biology; classification, natural history and ecology, physiology, population dynamics, mosquito-borne diseases and control of mosquitoes. Students will understand the fundamental processes governing mosquitoes and mosquito-borne diseases.
Prerequisite: junior standing or higher.
Attributes: Artificial Intelligence

ENY 4660 Medical and Veterinary Entomology 2 Credits
Grading Scheme: Letter Grade
Presents the major insect, mite, and tick vectors of disease to humans and animals. Topics includes arthropod-transmitted diseases, the interaction between pathogens and the arthropod vector, and the mechanical damage that a parasite inflicts on its host.
Prerequisite: ENY 3005 and ENY 3005L.

ENY 4660L Medical and Veterinary Entomology Laboratory 1 Credit
Grading Scheme: Letter Grade
Identifying mosquitoes, ticks, lice, fleas and other disease vectors. Insect collection required.
Corequisite: ENY 4660.

ENY 4701 Forensic Entomology 3 Credits
Grading Scheme: Letter Grade
Role of arthropods in decomposition, in criminal and civil investigations, and the increasing importance of science on society. Material and discussions deal with death and some may consider course images and concepts disturbing.
Prerequisite: Sophomore standing or higher.

ENY 4823 Molecular Biology of Insects and Nematodes 3 Credits
Grading Scheme: Letter Grade
Provides foundation knowledge of molecular biology, with emphasis on scientific discoveries from insects and nematodes. Presents information on the current innovations and trends of molecular technologies (e.g. high throughput sequencing, different types of omics, genome editing by CRISPR).
Prerequisite: BSC 2005, BSC 2010, ABE 2062, AGR 3303, ANS 3006, BCH 4024, ENY 2040, ENY 3005 or equivalent, or instructor permission.

ENY 4900 Supervised Extension Experience in Entomology and Nematology 0-3 Credits
Grading Scheme: S/U
Firsthand, authentic extension experiences in entomology and nematology under the supervision of a faculty member. Projects may involve program planning, development, implementation, and evaluation.
Prerequisite: Sophomore standing or higher.

ENY 4905 Problems in Entomology 1-5 Credits
Grading Scheme: Letter Grade
Problems in any field of specialization in entomology and nematology.
Prerequisite: ENY 3005 and the basic course in selected specialization.

ENY 4911 Supervised Research in Entomology 0-3 Credits
Grading Scheme: Letter Grade
Firsthand, authentic research in entomology under the supervision of a faculty member. Projects may involve inquiry, design, investigation, scholarship, discovery, or application.
Prerequisite: Sophomore standing or higher.

ENY 4915 Honors Thesis Research in Entomology 0-3 Credits
Grading Scheme: S/U
Independent research in entomology leading to an honors thesis. Student will be mentored by a faculty member. Projects may involve inquiry, design, investigation, scholarship, discovery or application.
Prerequisite: junior standing, upper division GPA of 3.75 or higher and completed honors thesis proposal on file.

ENY 4932 Special Topics in Entomology and Nematology 1-3 Credits
Grading Scheme: Letter Grade
Special topics in Entomology and Nematology.
Prerequisite: Sophomore standing or higher.

ENY 4945 Practical Work Experience in Entomology and Nematology 1-3 Credits
Grading Scheme: Letter Grade
Firsthand, authentic work experience in entomology or nematology under the supervision of a faculty member and workplace supervisor. Projects vary depending on program requirements.
Prerequisite: Sophomore standing.

IPM 3022 Fundamentals of Pest Management 3 Credits
Grading Scheme: Letter Grade
Fundamentals of Pest Management
Prerequisite: Sophomore standing or higher.

IPM 4114 Insect Pest and Vector Management 3 Credits
Grading Scheme: Letter Grade
Covers the principles and practices used in pest and vector management, and also emphasizes the arthropod pests affecting crop and ornamental plants, humans and livestock.
Prerequisite: Introductory course in entomology.

IPM 4254 Landscape Integrated Pest Management: Ornamentals and Turf 3 Credits
Grading Scheme: Letter Grade
Landscape pest pressure is influenced by many factors. The development of sound integrated pest management plans for landscapes focuses on identification of abiotic factors, weeds, insects, mites, pathogens and nematodes that occur on Florida landscape ornamentals, turfgrass and palms.
Prerequisite: ENY 3005 or NEM 3002 or PLP 3002C.

NEM 3002 Principles of Nematology 3 Credits
Grading Scheme: Letter Grade
Introduces nematology, including studies of morphology, life histories, and control of the major nematode parasites of plants. Also includes studies of the bionomics of certain soil nematodes and nematode parasites of vertebrates and arthropods.
Prerequisite: Sophomore standing or higher.

NEM 4905 Problems in Nematology 1-4 Credits
Grading Scheme: Letter Grade
Selected problems for study, research, or discussion in nematology.
Prerequisite: Sophomore standing or higher.

NEM 4911 Supervised Research in Nematology 0-3 Credits
Grading Scheme: S/U
Firsthand, authentic research in nematology under the supervision of a faculty member. Projects may involve inquiry, design, investigation, scholarship, discovery, or application.
Prerequisite: Sophomore standing or higher.

NEM 4915 Honors Thesis Research in Nematology 0-3 Credits
Grading Scheme: S/U
Independent research in nematology leading to an honors thesis. Student will be mentored by a faculty member. Projects may involve inquiry, design, investigation, scholarship, discovery or application.
Prerequisite: junior standing, upper division GPA of 3.75 or higher and completed honors thesis proposal on file.

PMA 4570C Field Techniques in IPM 2 Credits
Grading Scheme: Letter Grade
Prerequisite: IPM 3022.