

# Entomology (ENTO)

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## Courses

### ENTO 10201. Insects, Science and Society Lab. 1 Hour.

To educate students on the importance of insects in biology and science, human and animal medicine, ecosystems, agriculture, pollination, genetic research, the arts, and human culture and history. The lab will be a hands-on approach to reinforcing entomological concepts addressed in lecture. Corequisite: ENTO 10203. (Typically offered: Fall and Spring)

### ENTO 10203. Insects, Science and Society. 3 Hours.

To educate students on the importance of insects in biology and science, human and animal medicine, ecosystems, agriculture, pollination, genetic research, the arts, and human culture and history. Corequisite: ENTO 10201. (Typically offered: Spring)

### ENTO 30101. Introduction to Insect Identification Lab. 1 Hour.

Introductory lab course on insect identification, collection, and curation techniques, primarily designed as an intensive add-on to ENTO 30103 for students wanting a more in-depth examination of insect diversity. Insect collection required. Course includes field trips. Students are encouraged to contact instructor before enrolling. Pre- or Corequisite: ENTO 30103. (Typically offered: Fall)  
This course is cross-listed with BIOL 30271.

### ENTO 30103. Introduction to Entomology. 3 Hours.

Fundamentals of insect biology including structure and function, development, ecology, behavior, plant feeding and disease transmission. Lecture 3 hours/week. Students interested in a more intensive examination of insects, including collection, curation, and identification techniques, should sign up for the separate one credit lab ENTO 30101. Students are strongly encouraged to take BIOL 10103 before registering for this course. (Typically offered: Fall)  
This course is cross-listed with BIOL 30373.

### ENTO 4000V. Special Problems. 1-4 Hour.

Special problems. (Typically offered: Fall, Spring and Summer) May be repeated for up to 8 hours of degree credit.

### ENTO 40103. Insect Behavior and Chemical Ecology. 3 Hours.

Basic concepts in insect senses and patterns of behavioral responses to various environmental stimuli. Previous knowledge of basic entomology is helpful, but not required. Lecture 2 hours, laboratory/discussion 2 hours per week. Corequisite: Lab component (Typically offered: Spring Even Years)  
This course is cross-listed with BIOL 40173.

### ENTO 40204. Insect Diversity and Taxonomy. 4 Hours.

Principles and practices of insect classification and identification with emphasis on adult insects. Corequisite: Lab component. Prerequisite: ENTO 30103. (Typically offered: Fall Even Years)  
This course is cross-listed with BIOL 40274.

### ENTO 40403. Honey Bee Biology and Beekeeping. 3 Hours.

To acquaint the student with social insects in general and honey bees in particular, to promote an interest in beekeeping as a hobby, occupation, and/or science, to give the students the basic knowledge of how to keep honey bees, and to increase awareness of the contribution that pollinating insects make to agriculture, natural ecosystems, and human life. Lecture 3 hours, plus beekeeping field day. (Typically offered: Spring)

### ENTO 40503. Insect Ecology. 3 Hours.

To develop understanding of important ecological concepts through study of dynamic relationships among insects and their environment. To become familiar with the literature of insect ecology, and interpretation and critique of ecological research. Previous knowledge of basic entomology and/or ecology will be assumed. Corequisite: Lab component. (Typically offered: Fall Even Years)  
This course is cross-listed with BIOL 40573.

### ENTO 40603. Medical and Veterinary Entomology. 3 Hours.

Medical and veterinary entomology is the study of how insects and other arthropods affect human and animal health. Many insects, along with ticks and mites, require blood in order to develop their eggs, and in the process of feeding can transmit harmful pathogens. Even without disease, their bites can be painful and annoying. Other insects inject toxic venoms with their bites and stings that can cause allergic reactions or death. Some even lay eggs and grow inside of their live hosts. This class will cover the different groups medically important arthropods and the ways in which they cause direct or indirect injury to humans and animals. We will cover the disease cycles of relevant vector-borne pathogens, as well as surveillance and control. Students will learn to identify medically important arthropods and gain exposure to techniques and tools used in the field of medical and veterinary entomology. Corequisite: Lab component. (Typically offered: Spring)

### ENTO 4100V. Special Topics. 1-3 Hour.

Topics not covered in other courses or a more intensive study of specific topics in entomology. (Typically offered: Irregular) May be repeated for degree credit.

### ENTO 41203. Insect Pest Management. 3 Hours.

Study of principles and concept of insect pest management. Areas covered include survey of arthropod pests and damage, population dynamics, damage thresholds, physiological units, prediction models, surveillance, arthropod sampling, strategies and tactics utilized to maintain pest populations below economic injury levels. Prerequisite: ENTO 30103. (Typically offered: Spring Odd Years)

### ENTO 41303. Advanced Applied Entomology. 3 Hours.

Biology and ecology of major arthropod pests as model applied management systems. Activities include independent study, literature review and group discussions. Knowledge of general entomology and pest management is required. Self-learning modules are available. Lecture 2 hours/week and direct self-study laboratory 2 hours/week. Corequisite: Lab component. Prerequisite: ENTO 30103. (Typically offered: Spring Even Years)

### ENTO 5000V. Special Problems. 1-4 Hour.

Special problems. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 4 hours of degree credit.

### ENTO 50103. Morphology of Insects. 3 Hours.

Origin, evolution, and functional significance of external insect structure. Structure and function of major internal systems. Previous knowledge of basic entomology is helpful, but not required. Lecture 2 hours, laboratory 4 hours per week. Corequisite: Lab component. (Typically offered: Fall Odd Years)

### ENTO 50204. Insect Diversity and Taxonomy. 4 Hours.

Principles and practices of insect classification and identification with emphasis on adult insects. 2.5 hours lecture, 4 hours lab. Prerequisite: ENTO 30103 or instructor consent. Corequisite: Lab component. (Typically offered: Fall)  
This course is cross-listed with BIOL 50274.

### ENTO 50403. Honey Bee Biology and Beekeeping. 3 Hours.

To acquaint the student with social insects in general and honey bees in particular, to promote an interest in beekeeping as a hobby, occupation, and/or science, to give the students the basic knowledge of how to keep honey bees, and to increase awareness of the contribution that pollinating insects make to agriculture, natural ecosystems, and human life. (Typically offered: Spring)

### ENTO 50503. Insect Ecology. 3 Hours.

To develop an understanding of important ecological concepts through study of dynamic relationships among insects and their environment. To become familiar with the literature of insect ecology, and interpretation and critique of ecological research. Previous knowledge of basic entomology and/or ecology will be assumed. 2 hours lecture/2 hours lab. Prerequisite: Instructor consent. Corequisite: Lab component. (Typically offered: Fall Even Years)  
This course is cross-listed with BIOL 50573.

**ENTO 50603. Medical and Veterinary Entomology. 3 Hours.**

Medical and veterinary entomology is the study of how insects and other arthropods affect human and animal health. Many insects, along with ticks and mites, require blood in order to develop their eggs, and in the process of feeding can transmit harmful pathogens. Even without disease, their bites can be painful and annoying. Other insects inject toxic venoms with their bites and stings that can cause allergic reactions or death. Some even lay eggs and grow inside of their live hosts. This class will cover the different groups medically important arthropods and the ways in which they cause direct or indirect injury to humans and animals. We will cover the disease cycles of relevant vector-borne pathogens, as well as surveillance and control. Students will learn to identify medically important arthropods and gain exposure to techniques and tools used in the field of medical and veterinary entomology. Corequisite: Lab component. (Typically offered: Spring)

**ENTO 5100V. Special Topics. 1-3 Hour.**

Topics not covered in other courses or a more intensive study of specific topics in entomology. (Typically offered: Irregular) May be repeated for degree credit.

**ENTO 51103. Insect Behavior and Chemical Ecology. 3 Hours.**

Basic concepts in insect senses and patterns of behavioral responses to various environmental stimuli. Previous knowledge of basic entomology is helpful, but not required. Prerequisite: Instructor consent. Corequisite: Lab component. (Typically offered: Spring Even Years)

This course is cross-listed with BIOL 51173.

**ENTO 51203. Biological Control. 3 Hours.**

Theoretical and practical basis for biological control of arthropod pests and weeds via parasites, predators, and pathogens. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. (Typically offered: Fall Odd Years)

**ENTO 51503. Insect Pest Management. 3 Hours.**

Study of principles and concept of insect pest management. Areas covered include a survey of arthropod pests and damage, population dynamics, damage thresholds, physiological units, prediction models, surveillance, arthropod sampling, strategies and tactics utilized to maintain pest populations below economic injury levels.

Prerequisite: Instructor consent. (Typically offered: Spring Odd Years)

**ENTO 51603. Advanced Applied Entomology. 3 Hours.**

Topics will include the integration of tactics, integration of disciplines and specific case histories in insect management, or use of insects to manage weeds.

Prerequisite: Instructor consent. (Typically offered: Spring Even Years)

**ENTO 6000V. Master's Thesis. 1-6 Hour.**

Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

**ENTO 61103. Insect Physiology and Molecular Biology. 3 Hours.**

Overview of insect physiology and modern molecular techniques to study physiological processes. Previous knowledge of basic entomology is helpful, but not required. Two lectures per week (1 hour 20 minutes each). (Typically offered: Spring Even Years)

**ENTO 7000V. Doctoral Dissertation. 1-18 Hour.**

Doctoral Dissertation. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.