

## Bulletin Preview

[ES] **ENTO 115. Insect Biology** (BIOS 115) (3 cr I, II) Lec 2.  
*ENTO/BIOS 116 may be taken as an optional 1 cr hour lab.*

Fundamental insect biology (anatomy, development, physiology, behavior, ecology and diversity). Economic and medical importance of insects and principles of insect pest management.

## ACE Certification

In its review of requests for ACE certification, the Interim ACE committee (eventually the UCC ACE subcommittee) will use such criteria as:

- Does the course clearly address the Learning Outcome(s) identified?
- Does the course provide students with opportunities to develop the knowledge/skills necessary for successful achievement of the Learning Outcome(s)?
- Does the course provide students with opportunities to demonstrate achievement of the Learning Outcome(s)?
- Does the course reinforce at least one of the following as appropriate for the discipline and as identified by the department offering the course: Writing, Oral Communication, Visual Literacy, Historical Perspectives, Mathematics and Statistics, Critical Thinking, Teamwork, Problem Solving, Ethics, Civics, Social Responsibility, Global Awareness, or Human Diversity?
- Have the hosting department/unit and the instructor(s) agreed to follow through with their responsibilities as outlined in the ACE Course Certification Request Form?

**Students select which one outcome they will receive ACE credit for. Faculty should indicate which one or two ACE Learning Outcome(s) are satisfied by the course.**

**SLO4.** Use scientific methods and knowledge of the natural and physical world to address problems through inquiry, interpretation, analysis, and the making of inferences from data, to determine whether conclusions or solutions are reasonable.

**Describe opportunities students should have to learn the outcome. How is the learning objective embedded in the course?**

This response describes opportunities students have to learn the knowledge and skills addressed by the outcome (SLO4).

Alternatively, a response similar to "Lectures and group work" simply lists the teaching method and fails to explain the opportunities the course provides to enable students to learn the outcome.

The learning outcome is embedded in the course through lectures, inquiry investigations, and insect pet projects. Lecture topics focus on conveying the content knowledge that is essential for student synthesis and application of insect biology to problem solving. The inquiry investigations and insect pet projects support problem-based learning and inquiry. Students enrolled in Insect Biology conduct at minimum three inquiry investigations related to insect biology. The inquiry investigations require students to draw on their specific content knowledge, develop testable hypotheses, test their hypotheses, analyze and interpret their data, and identify appropriate conclusions and implications. The two insect pet projects reinforce the inquiry approach by requiring students to review existing literature to learn about their specific insect pet, develop a set of hypotheses related to habitat selection, food preference, and development of their pet; test their hypotheses through observations and designing experiments to gather appropriate data; interpret their data sets; and ultimately make inferences from the data to determine whether their original hypotheses were accepted. At the end of each project, students prepare a scientific report that includes their hypotheses, methods, data sets (graphs and tables) and summaries, and conclusions.

This response does a good job of explaining **how** the graded work allows students to demonstrate the knowledge and skills specified by the outcome.

Simply listing “tests and exams” as a response fails to explain how the course helps students demonstrate their **achievement** of the outcome.

This response indicates that the department has a plan for gathering & reviewing student evidence for assessing achievement of the outcome.

This is a good, concise response that indicates **how** the course reinforces a skill appropriate for the discipline.

**Describe student work that will be used to assess student achievement of the outcome.**

Student understanding and application of content knowledge is assessed through three hourly exams and a final exam. Exams consist of short essays and multiple choice questions. Graded assignments used to assess the student’s achievement of the scientific method component include scientific reports on their insect pets. The scientific reports gauge the student’s ability to develop a testable hypothesis; collect data; present (graphs and tables), assess and analyze their data sets; identify appropriate conclusions; and effectively communicate their findings. The final exam includes a question that requires students to demonstrate their understanding and application of the scientific method by designing an experiment related to insect biology. This test question provides another mechanism for assessing student achievement of this outcome.

**As part of the ACE certification process, the department/unit agrees to collect and assess a reasonable sample of students' work and provide reflections on students' achievement of the Learning Outcomes for its respective ACE-certified courses. Please comment on your plans to develop a process to collect and evaluate student work over time for the purpose of assessing student success for this ACE outcome.**

To assess student achievement of this outcome, the Entomology Curriculum Committee will collect and assess a reasonable sample of students’ work (final exam and scientific reports) each semester. At the end of each academic year, the curriculum committee will provide feedback on students’ achievement of the learning outcome.

**What Outcome(s) or skill(s) will be reinforced in this course?**

According to the ACE document approved by faculty (Structural Criteria, item 9), "Every ACE course will reinforce at least one of the following skills listed below as appropriate for the discipline and as identified by the department offering the course..." Indicate skills that will be reinforced by the course by clicking on as many as apply and describe briefly how those skills will be reinforced.

**These areas are those *OTHER THAN* the one or two outcomes for which you seek ACE certification. Students will not receive ACE credit for the reinforced skills, and the reinforced skills do not need to be assessed for ACE purposes.**

- Critical Thinking

**Describe briefly how this skill will be reinforced.**

All aspects of the course focus around teaching students how to use scientific methods of inquiry to solve problems related to entomology. Lecture content and class discussions expose students to the basic knowledge fundamental to the application of entomology to societal problems, with an emphasis on broad considerations including economic impact, risk, and ethical implications.

Reinforcements continue on page 3

Problem Solving

Describe briefly how this skill will be reinforced.

All aspects of the course focus around teaching students how to use scientific methods of inquiry to solve problems related to entomology. Lecture content and class discussions expose students to the basic knowledge fundamental to the application of entomology to societal problems, with an emphasis on broad considerations including economic impact, risk, and ethical implications.

## Supportive Material

### Syllabus (Required)

[InsectBiology\\_ACESyllabus.rtf](#)

Attach a copy of the sample syllabus that clearly identifies:

- The Learning Outcome(s) that are satisfied by the course.
- A brief description of the opportunities this course provides students to acquire the knowledge or skills necessary to achieve the Learning Outcome(s)
- A brief description of the graded assignments that the instructor(s) uses to assess the students' achievement of the Outcome(s).

### Cross-list Memo (Required if applicable)

[ento115 ACE.doc](#)

If the course proposed for ACE certification is cross-listed, include a letter of support from the chair/head of each cross-listed unit.

### Additional Documentation (Optional)