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## Current Issues in Entomology

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# Current Issues in Entomology

ENTO 485

Thomas J. Weissling and Gary J. Brewer



## ACE 10 Question

Undergraduate Entomology students benefit from an understanding of research and interpretation of scientific data. Current Issues in Entomology provides Insect Science students with research experience, and an opportunity to demonstrate discipline integration in a written and oral format.

Each student is partnered with a faculty mentor to assist them with identifying a research focus area, developing a timetable for conducting experiment(s) and submission of thesis, designing their experiment(s), data collection and analysis, and interpretation of the results.

Students prepare and defend a thesis as a demonstration of subject synthesis and critical thinking skills.

## Method of Analysis

Instructors assess student work by reading their thesis, listening to their oral presentation, and evaluating their integrative knowledge during the thesis defense. Performance is evaluated by each instructor according to the course rubric.

The rubric is designed to individually assess:

1. Student scientific rigor, subject integration, and understanding of entomology
2. Student ability to communicate through scientific writing
3. Student ability to communicate through oral presentation

## Findings

Since we started collecting data, we have had 16 students complete the capstone experience. The scores for all students were:

| Rubric Section                     | Score (%) |      |      |
|------------------------------------|-----------|------|------|
|                                    | Average   | High | Low  |
| Scientific rigor and understanding | 91.7      | 99   | 82   |
| Oral presentation                  | 92.5      | 100  | 85   |
| Thesis                             | 91.0      | 98   | 72   |
| Overall                            | 91.7      | 99   | 78.5 |

Scientific Rigor and Understanding is worth 50% of the overall grade, the Oral Presentation 20% and the written Thesis 30%.

Students provide the instructors with updates, and spend time asking peers for thesis edits. They also put effort into practicing and honing their presentation.

## Student Work

Each student works on a research project for up to 12 months before graduation under the guidance of a selected faculty advisor.

For course assessment, each student writes an undergraduate thesis following a journal format. The paper is submitted to the instructors.

Students also give an oral presentation followed by a defense (question period) of their thesis.

### Example of a student's research objectives:

- “1. Construct a phenotyping framework to distinguish varying levels of insect damage and identify sources of resistance
2. Characterize the peroxidase levels in control plants, and plants influenced by greenbug feeding using native gel electrophoresis and enzyme kinetics
3. Identify the variations in protein profiles for susceptible and resistance switchgrass populations”

## Examples of Student Work

