

## **Outreach and Service-Learning in Entomology**

### **ENTO 4300/6300S**

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#### **COURSE DESCRIPTION**

This is an individualized, project-based course that will allow students to develop professional skills and leverage their strengths and interest in entomology by generating a real-world product for a community partner (e.g. outreach presentations, pest management consulting reports, interpretive signage, factsheets, videos). Students can choose from a list of projects and partners developed in advance, or develop their own during the first week of the course. Students may work closely with the H.O. Lund Entomology Club in organizing and participating in outreach events with the Insect Zoo throughout the semester.

#### **COURSE OBJECTIVES**

This course has three primary goals: 1) to develop and showcase professional skills in a capstone project with lasting real-world impacts, 2) foster a commitment to community among UGA students, and 3) improve the accessibility of entomological knowledge for teachers, K-12 students, farmers, and the general public. Students enrolled in this course will spend significant time outside the classroom working directly with their teammates and community partners on their service project.

#### **LEARNING OUTCOMES**

By the end of the semester, students should be able to:

- Make information about insects fun and accessible through display collections, print and video media
- Consider and articulate strengths, interests, and career goals.
- Identify skills to develop to support goals.
- Research opportunities and develop projects with community partners.
- Work individually or with a team to divide responsibilities and execute logistical steps in project management.
- Articulate weekly project goals and write timely and informative reports on progress.
- Generate and deliver written or oral outreach products for partners.
- Reflect on service experience with partners and gather feedback.
- Transform enthusiasm and knowledge for entomology into commitment and action on behalf of science literacy, food access, environmental stewardship.

## COURSE EXPECTATIONS AND REQUIREMENTS

### Progress Reports (180 points)

Students will submit nine reflections before class on Thursdays via ELC (reflections and all assignments are due Thursdays at 2pm). Half the reflections will be delivered in written form (bi-weekly), in response to prompts posted to ELC. Written reflections must be composed clearly, in complete sentences, without grammatical errors (1 point will be deducted for grammar if it is poor). The remaining reflections will vary bi-weekly in their structure. Some will require photography with captions describing your activity. Some will be delivered orally, in video, or in the form of visual art, song, or poetry (student's choice).

## GRADES

Great Georgia Pollinator Census	10 extra credit pts
Career goal essay/working with minors	50 pts
Pest/predator collections	100 pts
Insect facts sheets (accompany collections)	100 pts
“Real facts” insect videos	100 pts
Insect zoo lesson demonstrations & reflections	50 pts
Service project proposal/outline/rubric	100 pts
“Connect to Protect” garden restoration	50 pts
Service product draft (individualized rubrics)	100 pts
Service product revision (individualized rubrics)	200 pts
Final presentation	100 pts
Feedback activity with community partner	50 pts

**Total 1000pts**

A = 930-1000, A- 900-929, B+ = 870-899, B= 830-869, B- = 800-829, C+ = 770-799, C= 730-769, C- = 700-729, D+ = 670-699, D= 630-669, D- = 600-629, F < 600

### Revision policy:

Revisions that address feedback given can be completed to recover 50% of credit lost. Be sure to submit both the original and revised Word documents with changes tracked, and **prepare a response to each of my comments that describes how you improved each section where points were lost**. All revisions must be submitted two weeks before the end of finals week. (April 28). Because you always have an opportunity to improve your grade and several opportunities for extra credit throughout the semester, **no attempts to negotiate grades at the end of the semester will be entertained**.

- How to “track changes” in Word: click “review” and “track changes.”
- In google docs: You can select “suggesting mode” in a drop-down menu in the upper right of your browser. It’s much, much easier to track changes in Word though.

## Attendance Policy

Attendance is expected. Notify the instructor prior to your excused absence.

**The course schedule is a general plan for the course; deviations announced to the class by the instructor may be necessary.**

Tuesday classes are reserved for individual service project work

Thursday classes are dedicated to lectures, class projects, and group reflections

Date	Topic	Assignments due
Week 1 August 19	Introduction. How service learning works.	Great Georgia pollinator census (Aug 20)
Week 2 Aug 24/26	Project matching. Skills development. Insect collections	<b>“Working with Minors training/Career goal essay” due August 25 2pm</b>
Week 3 Aug 30/Sept 2	Meet community partner Sept 2	Insect collections/reflections due 2pm Sept 2
Week 4 Sept 7/9	Video workshop, google scholar workshop	Insect fact slides/reflections due 2pm Sept 9
Week 5 Sept 14/16	Film festival, peer feedback	“Real facts” Insect video due 2pm Sept 16
Week 6 Sept 21/23	Insect zoo	Insect zoo lesson demo & reflection (Sept 23) Gabriela lead
Week 7 Sept 28/30	Goal setting	Insect zoo reflection due Sept 30th
Week 8 Oct 5/7	Adapting	Guided reflection, progress report
Week 9 Oct 12/14	Data analysis, visualization, presentation	<b>Final project proposal/rubric due Oct 7th 2pm</b>
Week 10 Oct 19/21	Integrating community in entomology research (paper discussion with Gabriela)	Written Reflection due Nov 21
Week 11 Oct 26/28	Employable skills	Guided reflection/progress report
Week 12 Nov 2/4	Garden restoration/cleanup?	Dr. Blubaugh at ENTSOC conference Nov 2 <b>Final service project draft due Nov 4</b>
Week 13 Nov 16/18	StemZone booth? (TBD, covid dependent)	Garden reflection due Nov 18 2pm
Week 14 Nov 23/25	Gobble gobble	TURKEY TIME
Week 15 Nov 30/Dec 2	Final presentations for community partners (Dec 2)	Service product revision due Nov 30 2pm
Week 16 Dec 9/11	Employable skills	Final reflection on community partner feedback due Dec 11

## **Potential service learning capstone projects for ENTO 4300S:**

### **Entomology research and education in school gardens: (3-4 students)**

Students will partner with a local science classroom in Athens/Clarke County to execute a small experiment in school gardens, and prepare curricular materials to accompany the experiment (display collections, videos, teaching modules).

- 1) Students will learn to identify common pests and beneficial insects in gardens, and complete scouting activities on a weekly basis during the month of September.
- 2) Students will communicate/collaborate with their partnering classroom via a shared Instagram hashtag (#bug2school), where Athens/Clarke County students will upload photos of their discoveries in the garden. UGA students will engage with them to help with identification and share interesting facts about the insects they find.
- 3) Students will develop an accompanying 30-minute teaching module for their partnering classrooms on one of the following topics:
  - a. ‘Ecosystem services’ by beneficial insects (“bug jobs”—e.g. decomposition, biological control, pollination)
  - b. Insect food webs in school gardens (with field activity)
  - c. Benefits of worm composting for plants and insects
  - d. Analyzed/synthesized results of class experiments

## **Piedmont Prairie Planters at the State Botanical Garden of Georgia: (1-2 students)**

Students will work together with conservation biologists at the State Botanical Garden of Georgia to establish demonstration plots to showcase key prairie species near the Piedmont Prairie Restoration at the Botanical Garden. Students will choose two key native prairie plants and develop interpretive signage to accompany demonstration planter boxes.

Sample final project rubric: (100 pts)

### **Content: (80 pts)**

- Description of morphology the particular native plant (roots, foliage, & flowers!—10 pts)
- Description of its unique site requirements (10 pts)
- Description of the plant's phenology (emergence times, perennial/annual, bloom period, 10pts)
- Describe how common this plant is-- (is it rare and endangered, or quite common on the prairie? 5 pts)
- Can this plant be easily cultivated by a homeowner if they want to plant a 'pocket prairie' in their yard? Where might one purchase these plants? (5 pts)
- Summary of evidence from literature on key pollinator taxa supported. (10 pts)
- High-quality, license-free photos of the prairie plants in bloom, along with key pollinators. (10 pts)
- In-text citations anchoring **each fact that isn't common knowledge**. References must be formatted according to the Entomological Society of America Style guide (see below; 10 pts) [https://academic.oup.com/jme/pages/Manuscript\\_Preparation#References](https://academic.oup.com/jme/pages/Manuscript_Preparation#References)
- Grammar/Spelling/accessibility for non-experts (10 pts)

### **Design (20 pts)**

- Easy-to-read fonts and colors, thoughtful use of space (no vast empty space): **10 pts**
- Prepared in correct dimensions in powerpoint: **10 pts**

### **Entomology lab profile videos:**

Your challenge is to help make the exciting research going on in UGA Entomology labs accessible for non-specialists! Each service-learning student will work with entomology faculty members to compose two videos (~2-3 minutes with excellent production value) introducing the public to the research that goes on in two different labs. Your goals will be to read about the professors' research program on their lab website, read some of their papers to become familiar with their research, and reach out to them to complete interviews with the supervising professor and graduate students in the lab and/or field to capture footage of the work they do. Finally, you'll edit the interview footage, and prepare a video that explains the basics of their research in a way that is easily digestible for the public, for farmers, or prospective students! This opportunity is a good fit for students interested in developing skills in communication and videography, and can be completed with support from UGA's Office of Communications and Video Services (<https://occu.caes.uga.edu/photos-video-multimedia/video.html>).

Sample rubric:

Content:

Quality information displayed in interview (20 points)

- **Vogel lab**

- What are host/symbiont interactions? (catchy!)
- Why should we study kissing bug microbes?
- What has the Vogel lab discovered recently about kissing bug microbiomes?
- How might this research impact human health?

- **Dr. Champagne**

- Intro to pathogen/host/vector interactions
- How does insect spit influence our susceptibility to diseases?
  - Salivary proteins (what are they/what do they do)
- What has the lab recently discovered about how insect spit influences pathogen vectors?
- How might knowledge of salivary proteins fit into a plan to limit disease transmission?

High quality photos or animations that serve as visual aids for video content, and break up live action shots. (20 pts)

Script for patched-in audio and photos (10 points)

In-text citations anchoring each fact that isn't common knowledge. References must be formatted according to the Entomological Society of America Style guide (see below; 10 pts)

[https://academic.oup.com/jme/pages/Manuscript\\_Preparation#References](https://academic.oup.com/jme/pages/Manuscript_Preparation#References)

Grammar/Spelling (10 pts)

## “Blooms on campus” map

We’re currently in the process of preparing a map of blooming plants on the UGA campus so that students can find beautiful places to watch pollinators or take selfies. Currently, we are populating a large database with locations, identifications, & blooming phenology of flowering plants, and will eventually turn this into a webtool to be posted on UGA’s [Campus Pollinator Project](#) website.

Sample final project rubric:

### *Introduction*

- Include background information (mostly studies published since 2015) on pollinator garden importance in urban areas (10pts) (educational value, insect habitat, biodiversity/ecosystem services)
- Consider the importance of habitat connectivity in urban landscape planning. (10 pts)
- Describe why surveying the surrounding plants might be important in pollinator garden planning projects (10pts)

### *Methods:*

- Include what steps were taken in the survey (10pts)
- Identify resources consulted to identify flowers (10pts)

### *Results:*

- What are the most common blooming plants on South campus in spring? (prepare a pie chart or some sort of data visual;10 pts)
- Blooming plants present in pollinator gardens and in existing campus ornamental plantings are recorded in a spreadsheet with the date they were observed, location (precise GPS coordinates), typical bloom time, and pollinator resources provided. (20 pts)
- Map is readable and high quality (10pts)
- Maps identify locations of existing campus flowering vegetation (Both Connect to Protect gardens and regular landscape ornamentals) during each month of the fall semester (10pts) \*I suggest maps for Sept, Oct, & Nov\*

### *Discussion:*

- Do the most common blooming landscape plants provide good early-season resources for pollinators? (10 pts)
- What plant traits and phenological characteristics are missing UGA’s campus? (10pts)
- Consider opportunities to improve connectivity between resource patches (10 pts)
- What next steps need to be taken to complete this project? (10pts)
- How might your survey be used in future landscape planning? (10 pts)
- How might your survey be used by UGA students and faculty? (10 pts)
- How might your survey inform future research projects? (10 pts)
- Spelling/grammar/readability for non-experts (10pts)
- In-text citations anchoring **each fact that isn't common knowledge** (at least 20 references). References must be formatted according to the Entomological Society of America Style guide (see below; 10 pts)

[https://academic.oup.com/jme/pages/Manuscript\\_Preparation#References](https://academic.oup.com/jme/pages/Manuscript_Preparation#References)

## **Academic Honesty**

All students are responsible for knowing the University's policy on academic honesty. Plagiarism or copying can be easily detected, and it is my responsibility to uphold the University's academic honesty policy and to report any suspicion of dishonesty to the Office of the Vice President for Instruction.

UGA Student Honor Code: "I will be academically honest in all of my academic work and will not tolerate academic dishonesty of others." A Culture of Honesty, the University's policy and procedures for handling cases of suspected dishonesty, can be found at [www.uga.edu/ovpi](http://www.uga.edu/ovpi).

**Most frequent occurrence of Academic Dishonesty – Plagiarism.** Submission for academic advancement the words, ideas, opinions or theories of another that are not common knowledge, without appropriate attribution to that other person. Plagiarism includes, but is not limited to, the following acts when performed without appropriate attribution:

- Directly quoting all or part of another person's written or spoken words without quotation marks, as appropriate to the discipline;
- Paraphrasing all or part of another person's written or spoken words without notes or documentation within the body of the work;
- Presenting an idea, theory or formula originated by another person as the original work of the person submitting that work;
- Purchasing (or receiving in any other manner) a term paper or other assignment that is the work of another person and submitting that term paper or other assignment as the student's own work.

## **Mental Health and Wellness Resources:**

- If you or someone you know needs assistance, you are encouraged to contact Student Care and Outreach in the Division of Student Affairs at 706-542-7774 or visit <https://sco.uga.edu/>. They will help you navigate any difficult circumstances you may be facing by connecting you with the appropriate resources or services.
- UGA has several resources for a student seeking mental health services (<https://www.uhs.uga.edu/bewelluga/bewelluga>) or crisis support (<https://www.uhs.uga.edu/info/emergencies>).
- If you need help managing stress anxiety, relationships, etc., please visit BeWellUGA (<https://www.uhs.uga.edu/bewelluga/bewelluga>) for a list of FREE workshops, classes, mentoring, and health coaching led by licensed clinicians and health educators in the University Health Center.
- Additional resources can be accessed through the UGA App.

*Disclaimer: The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.*