ENY 2890 Insect Research

Scientific Engagement Through Honey Bee Health Research

Fall | Course Overview

1881 Natural Area Dr., Gainesville, FL, 32611 http://campusmap.ufl.edu/#/index/0970

INSTRUCTORS:
All instructors are available to meet with students by appointment.
Dr. Cameron Jack (cjack@ufl.edu), Assistant Professor, Honey Bee Research Facility Rm 114
Dr. Jamie Ellis (jdellis@ufl.edu), Professor, Honey Bee Research Facility Rm 116
Julia St. Amant (jstamant1@ufl.edu), Graduate TA
Vernaeyah Lane (v.lane@ufl.edu), TA

COURSE PREREQUISTES: None

COURSE DESCRIPTION AND LEARNING OBJECTIVES:
This is a Classroom Undergraduate Research Experience (CURE) course. During this course, students will be introduced to important topics in science and provided with an opportunity to conduct publishable research in the field of honey bee health. We want students to go forth prepared to join other research teams at UF and feel confident in their abilities to contribute productively to their scientific fields of interest. To achieve this goal, this class is organized as a flipped classroom, offering both online and in-classroom learning experiences.

Motivated students will be able to:

1. *Describe how scientists conduct research,*
2. *Identify the challenges associated with conveying scientific findings to general audiences,*
3. *Explain the benefits of international research collaborations,*
4. *Demonstrate proper data collection techniques,*
5. *Summarize the importance of accurate data entry and analysis,*
6. *Interpret the importance and relevance of scientific findings,*
7. *Communicate research findings effectively through oral presentation, and*
8. *Design a simple experiment.*

Students' successful achievement of these learning objectives will be evaluated via online quizzes, individual and group writings, participation in all classroom activities and a video presentation.

REQUIRED MATERIALS: Access to a laptop or desktop computer for online quizzes and assignments. A computer in a computer lab on campus should be fine for this purpose. There are no required texts for this course as all reading materials and media will be available on Canvas or freely available on the internet.

COURSE COMMUNICATION: Please ensure that your Canvas profile is set to receive notifications (i.e. please check the appropriate box to receive all notifications). To do this, click on your name in the upper right corner of the Canvas homepage after logging into Canvas. Next, click "notifications" on the left. This will take you to the Notification Preferences page. Then, click the check symbol for at least the following notifications: Due Date, Course Content, Announcement, and Grading.

SPECIAL NOTE ON CONTACT VIA EMAIL: Due to UF privacy laws, you must use your GatorLink account or the Canvas mail system when emailing the Instructors or TA. Emails sent from other accounts (gmail, hotmail, etc.) will not be answered by the Instructors or TA.

Grading:

Assignment	Break-down	Points
Online quizzes	10 quizzes, 10 pts/each	100
Critical Thinking Exercises	5 assignments, 25 pts/each	125
Research Poster	Presented at end-of-semester symposium	200
Lab Notebook	3 notebook checks, 25 pts/each	75
Group Agreement & Evaluations	Written agreement and 2 peer assessments, 25 pts/each	75
Science Across Borders	Interview transcript and Reflective essay	75
	Total Points	**650**

ONLINE QUIZZES:

There will be 10 online quizzes throughout the course (see weekly schedule) to help students prepare for in-class discussions. Each quiz is worth 10 points and will include five questions based on the reading(s). Quizzes are open note. Students are required to watch the lecture(s) and complete the quiz prior to the beginning of each class. ***Quizzes are due by 3:00 pm the day of the corresponding class.***

CRITICAL THINKING EXERCISES:

At various points in the semester, students will be required to complete five critical thinking exercises designed to help them reflect on and/or synthesize subjects covered in this course. Each assignment will be structured differently so students should read the directions carefully before beginning the assignments. Proper terminology, spelling, and grammar are expected in all assignments. A rubric for grading the reflective writing assignments will be provided at the time the assignment is given. ***The critical thinking exercises will be due by 3:00 pm the day of the corresponding class.***

RESEARCH POSTER:

As a capstone project, each research group will design a ***scientific poster*** *that highlights their experimental design and preliminary findings. Specific poster guidelines will be discussed in class. Students will present their posters in a symposium at the end of the semester.*

LAB NOTEBOOK:

*You will be required to maintain a **digital lab notebook** throughout the semester, in which you will record your data/analyses and other notes related to our experiments. Proper lab notebook protocol will be discussed in class. The lab notebook will be checked for completeness and accuracy three times during the semester (two preliminary checks and one final evaluation).*

GROUP AGREEMENT AND EVALUATIONS:

*At the beginning of the semester, each research group will submit a written agreement that outlines their shared expectations for group work. Then, twice during the semester, you will evaluate your group members **(including yourself)** based on how well they are following the agreement. This will allow the instructors to assess how well each group is functioning and help ensure that each group member contributes fairly to the project.*

SCIENCE ACROSS BORDERS ASSIGNMENT:

*One of the major themes in this course is the value of global collaborations in science. To explore this topic in more depth, you will conduct an **interview with an international researcher** and use that interview to write a **reflective essay** on the benefits and challenges of conducting research across borders. Detailed information about this assignment will be discussed in class, and the instructor will help connect you with a scientist for the interview.*

GRADING SCALE:

FINAL GRADING		
% grade	Letter grade	Points needed to achieve letter grade
100-93	A	≥ 604
90-92	A-	585 – 603
87-89	B+	565 – 584
83-86	B	540 – 564
80-82	B-	520 – 539
77-79	C+	500 – 519
73-76	C	475 – 499
70-72	C-	455 – 474
67-69	D+	436 – 454
63-66	D	410 – 435
60-62	D-	390 – 409
0-59	E	0 – 389

*For information on current UF policies for assigning grade

points, see https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

MAKE-UP ASSIGNMENTS:
Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

Course Schedule:

Class #	Module	Topic	Assignments Due
1	#1: Recognizing good science	Class introductions; syllabus review; How do we recognize good science?	
2	#2: Using the scientific method	The scientific method; structure of a scientific journal article	Quiz 1
3	#2: Using the scientific method	What is your question? Why does it matter?	
4	#3: Honey bees and probiotics	Honey bee biology – Work honey bee colonies	Quiz 2
5	#3: Honey bees and probiotics	Honey bee health and probiotics	CTE 1
6	#4: Experimental design	Core elements of good experimental design	Quiz 3
7	#4: Experimental design	What question will we investigate?; Design our experiments	
8	#5: Safety and science	Safety and Science	Quiz 4
9	#5: Safety and science	**Begin our experiments**	Group Agreement; CTE 2
10	#6: Data collection and entry	Data collection methods; proper data entry	Quiz 5

11	#6: Data collection and entry	Data collection: Field/lab work	
12	#7: Importance of international research	Why conduct international research?	
13	#7: Importance of international research	Data collection: Field/lab work	Interview Questions
14	#8: Statistics: the language of science	Statistics: the language of science; Review statistical terminology	Quiz 6
15	#8: Statistics: the language of science	Data collection: Field/lab work	Poster Abstract; Group Evaluation 1
16	#9: Plotting your data	Graphing and figures;	Quiz 7
17	#9: Plotting your data	**End Experiments:** Data collection: Field/lab work	CTE 3
18	#10: Interpretation of results	Interpretation of results: Data analysis	Quiz 8
19	#10: Interpretation of results	Analyzing our class data: what have we got so far?	Final Lab Notebook
20	#11: Communicating your research	Importance of oral communication: how to present to a scientific audience	Quiz 9
21	#11: Communicating your research	How to present to a non-scientific audience;	CTE 4
22	#12: Science ethics	Science ethics; Importance of ethics	Poster 1st Draft
23	#12: Science ethics	Public trust and distrust of science, case studies	Quiz 10
24	#13: Research opportunities at UF	Research opportunities at UF	Science across borders reflective essay
25	#13: Research opportunities at UF	Guest speakers	

26	#14: International researchers at UF	Panel discussion with visiting researchers	Poster Final Draft; CTE 5
	Thanksgiving Holiday		
27	#15: Poster presentations	Final analyses and presentation practice	
28	#15: Poster presentations	**Research Symposium:** Poster Presentations	Group Evaluation 2
29	#16: What have we learned?	Course evaluations; Our research and class wrap up	

SCHEDULE DISCALIMER: This schedule represents current plans and objectives. These plans may need to change throughout the semester due to unforeseeable circumstances. Such changes will be communicated though announcements on Canvas.

UF Policies:

ONLINE COURSE EVALUATION PROCESS:

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at gatorevals.aa.ufl.edu/public-results/.

ACADEMIC HONESTY:

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (sccr.dso.ufl.edu/process/student-conduct-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Getting Help:

SERVICES FOR STUDENTS WITH DISABILITIES:

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, dso.ufl.edu/drc) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

E-LEARNING AND TECHNICAL SUPPORT:

For issues with technical difficulties for Canvas, please contact the UF Help Desk at:

- Learning-support@ufl.edu
- (352) 392-HELP
- https://lss.at.ufl.edu/help.shtml

Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Other resources are available at http://www.distance.ufl.edu/getting-help for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

HEALTH AND WELLNESS RESOURCES:

U Matter, We Care: If you or someone you know is in distress, please contact mailto:umatter@ufl.edu, 352-392-1575, or visit umatter.ufl.edu/ to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center: Visit counseling.ufl.edu/ or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit shcc.ufl.edu/.

University Police Department: Visit police.ufl.edu/ or call 352-392-1111 (or 9-1-1 for emergencies).

UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; ufhealth.org/emergency-room-trauma-center.

ACADEMIC RESOURCES:

E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at mailto:helpdesk@ufl.edu.

Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services career.ufl.edu/.

Library Support: cms.uflib.ufl.edu/ask various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring. teachingcenter.ufl.edu/

Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers. writing.ufl.edu/writing-studio/

Student Complaints On-Campus: sccr.dso.ufl.edu/policies/student-honor- codestudent-conduct-code/

On-Line Students Complaints: distance.ufl.edu/student-complaint-process/