Insect Research (CURE)
ENY 2890

Fall 2020 (3 credits)

Course Information

Mondays & Wednesdays
Period 8 (3:00pm – 3:50pm)

Location: Online via Zoom (link to be shared in Canvas)

Prerequisites: None

Canvas Website:
ufl.instructure.com/courses/405646

Instructor Information

Dr. Anthony Auletta
Course Coordinator

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Office: (Link to Virtual Zoom Office to be shared in class)
Office Hours: Mon. & Thu., 1:00pm - 2:00pm (or by appointment)

Dr. Peter DiGennaro
Principal Investigator

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Office Hours: By appointment

Joshua Botti-Anderson
Graduate Teaching Assistant

Email: jbottianderson@ufl.edu
Office Hours: By appointment

⭐ Course Overview

This is a **course-based undergraduate research experience (CURE)**, which bridges the divide between the classroom and the research laboratory. Students will become part of a collaborative research team, and help **sequence, assemble, & analyze nematode genomes using next-generation technology**. Through this immersive, hands-on research experience, students may generate publishable data and contribute new knowledge to the field of nematology. We will also discuss important topics and best practices in science, including science ethics, doing science across borders, and communicating our science to a variety of audiences. This course is a great introduction to research, especially for students interested in genomics and molecular biology. Committed and hard-working students will leave this course well-prepared to join research teams at UF and beyond.

This course fulfills one of the curriculum requirements for the **International Scholars Program (ISP)**. Learn more about the ISP here: https://internationalcenter.ufl.edu/student-opportunities/international-scholars-program

Course Catalog description: *ENY 2890 is a classroom undergraduate research experience (CURE) which bridges the divide between the classroom and the science laboratory and prepares for advanced opportunities in entomological science. Become part of an entomology research team, collecting publishable data on insect evolution, ecology, and systematics.*

☑ Student Learning Outcomes

By the end of the course, students will be able to:

• **Explain** the scientific method and best practices for conducting scientific research.

• **Identify** key challenges that scientists encounter when conducting research and **assess** strategies to mitigate them.

• **Critically read** and **evaluate** primary scientific literature.

• Accurately **collect**, **analyze**, and **interpret** scientific data.

• Effectively **communicate** the findings of their research to both the scientific community and general public.

• **Explain** the benefits of global collaborations in science, as well as strategies for effectively working with scientists from other cultures.

• **Reflect** on their personal career goals and **identify** resources and opportunities for future research on campus and beyond.

Readings & Course Materials

Required Readings & Videos: There is no textbook for this course. Readings will consist of articles and book chapters that will be posted on the Canvas website before each class session. Students may be required to view brief videos and/or other media before class as well; links to these materials will also be posted on Canvas..

Other Required Materials: This is an online course. All students must have regular access to a computer with a reliable internet connection and Zoom installed (https://ufl.zoom.us). A desktop or laptop computer will also be required to run HiPerGator, which will be used for data analysis.

Course Communication

Meeting Policy: We are happy to discuss any aspect of this course with you! Outside of office hours, email is the preferred method of contact for all instructors. We will attempt to respond within 24 hours to emails received Monday-Friday, or by the following workday to emails sent during weekends/holidays. As a courtesy, please check this syllabus and Canvas for answers to your questions before reaching out.

Canvas: Important announcements and updates will be regularly posted to the course Canvas website, so be sure to check Canvas frequently! To ensure that you do not miss anything, please ensure that your Canvas profile is set to receive notifications.

Email Accounts: UF policies require you to use your GatorLink account or the Canvas mail system when emailing your instructors; we will not answer emails sent from other accounts (e.g., Gmail).

Professional Conduct: All participants in this class are expected to conduct themselves in a professional and respectful manner at all times. As such, please use appropriate etiquette when interacting with your peers and instructors, including during class, on Canvas, and via email.

Attendance & Participation

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

Instructors' Note: Due to the nature of this course, attendance in class is critically important. If you are absent, you will not be able to contribute fully to the research project or our discussions. Thus, all students are expected to **attend every class session on time** and **stay for the entire session**. Students are also expected to be **fully prepared for and engaged** in each class session– this includes doing all of the assigned readings, submitting all assignments by their deadlines, and actively participating in class activities.

If you need to miss a class due to an **excusable absence**, you must let the instructor know as far in advance as possible to discuss arrangements for making up any missed work. The instructor may request documentation. If you are absent for any other reason or fail to notify the instructor of an excusable absence in a timely manner, you may not be able to make up in-class work.

If you miss a session, please contact a classmate for notes– the instructors will not provide notes.

In addition to working on the project in class, students should also plan to allocate time outside of class for data collection and analysis (approximately 3 hours/week).

Exams & Assignments

Quizzes: There will be 7 online quizzes throughout the semester (see the Course Schedule for dates), which must be submitted in Canvas before the start of class (3:00pm) on the due date. These assignments are designed to help you keep up with the readings and ensure that you are prepared for our discussions and other in-class activities.

Reflections: Throughout the semester, you will be asked to submit brief written reflections of our class sessions via Canvas. The goal of these assignments is to help you think deeply about the content, including the ideas shared by your peers and colleagues. There will be one reflection due per week, with several exceptions (see Course Schedule & Canvas for details & dates).

Lab Notebook: Each student will be required to maintain a digital lab notebook throughout the semester, in which they will record their data and other notes regarding their experiments. Proper lab notebook protocol will be discussed in class before the start of the research project. The lab notebook will be checked for completeness and accuracy twice during the semester and will be collected for a final evaluation during the last week of class.

Research Poster: Each research group will design a scientific poster which highlights their experimental design and preliminary findings as a capstone project for the course. Specific guidelines for this assignment will be discussed in class. The posters will be presented at the *Fall Undergraduate Research Symposium* on November 5th.

"Science Across Borders" Assignment: One of the major themes woven throughout this course is the value of conducting science globally. To explore this topic more deeply, each student will conduct an interview with an international researcher, and use that information to prepare an essay in which they discuss the benefits and challenges of international collaborations in science. Detailed information about this assignment will be discussed in class, and the instructor will help connect you with a scientist for the interview.

Homework Assignments: There will be five graded homework assignments during the course (see the Course Schedule for due dates). The format of these assignments will vary. These assignments will help you practice critically reading the scientific literature or allow you to explore certain topics in more depth. Guidelines for each assignment will be posted to Canvas.

Extra Credit: You may earn up to 10 bonus points for attending an international research seminar during the semester and preparing a 2 page (single-spaced) reflective paper about it. Other extra credit assignments may be posted at the instructor's discretion. Any other extra work submitted in order to raise a grade will not be accepted.

> ***Submitting assignments:*** *All assignments must be submitted electronically through Canvas unless otherwise noted. You are responsible for ensuring that all of your work is uploaded correctly and completely by the deadline. Documents that are incomplete, corrupted, or blank will be treated as late work (with associated penalties) until they are re-uploaded correctly, so please always double check your files!*

⏰ Policy on Late Work

All assignments must be submitted **by the due date and time indicated in this syllabus/on Canvas**. If an assignment is submitted after that time, 20% of its total point value will be deducted for every day that it is late. You will not receive credit for late work if it is submitted more than 5 days late or after the instructors have graded and returned the assignment to the class.

If you miss a class session, you are **still responsible** for turning in the work due on that date at the required time. Penalty-free extensions on assignments will be considered on a *case-by-case basis* only in the event of an unforeseen excusable absence or other emergency. In such a case, you must contact the instructors as soon as you are able to discuss these arrangements.
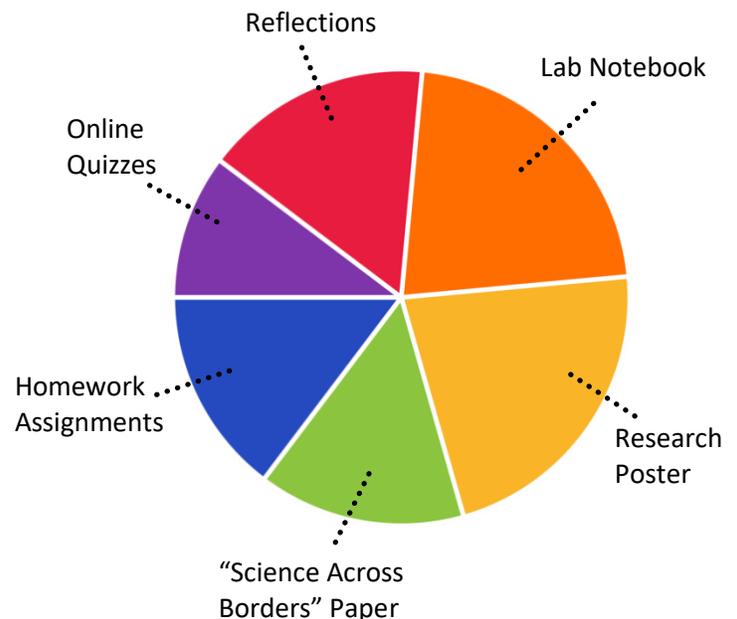
Ⓐ Grading

This course uses a points scale for grading. You can earn up to a maximum of **680 points** in the course, distributed as follows:

Online Quizzes: **70 pts (10 pts ea.)**
Reflections: **110 pts (10 pts ea.)**
Lab Notebook: **150 pts**
Research Poster: **150 pts**
"Science Across Borders" Assignment: **100 pts**
Homework Assignments: **100 pts (20 pts ea.)**

At the end of the semester, your point total will be converted into a percentage of the maximum and the corresponding letter grade will be assigned:

90 – 100% = **A**	70 – 76.9% = **C**
87 – 89.9% = **B+**	67 – 69.9% = **D+**
80 – 86.9% = **B**	60 – 66.9% = **D**
77 – 79.9% = **C+**	below 60% = **E**

Please note that the instructors <u>do not round up grades</u>– requests to do so will not be honored.

For current UF policies on assigning grade points, consult the following policy website: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

> ***Disputing a grade:*** *If you wish to dispute a grade for any exam/assignment, you must contact the instructors <u>in writing</u> within two days (48 hours) after the assignment has been returned. In your message, you must include a specific explanation for why you think the grade is incorrect and how you think it should be changed. An instructor will then arrange a meeting with you to discuss the issue and determine whether or not to the grade should be changed. The grade assigned following this meeting will be final.*

Course Schedule

Below is a tentative* schedule of topics and assignments for the semester. Readings and other materials for each session will be posted on Canvas. Unless otherwise noted, all readings and assignments must be completed/submitted before the start of class (3:00pm) on the indicated due date.

In addition to the assignments listed below, students will be required to complete their weekly reflection posts on Canvas by Friday at 11:59pm each week, unless otherwise noted. There are no reflections due on Weeks 1, 9, 13, and 15.

Week	Date	Topic	Instructors	Assignments Due
1	8/31 (M)	**Course Intro / What is a CURE? / What is (Good) Science?**	Auletta, DiGennaro	
	9/2 (W)	**Critically Reading Scientific Literature / Finding Sources**	Auletta	
2	9/7 (M)	**Labor Day Holiday – NO CLASS!**	---	
	9/9 (W)	**Research Background: Nematology**	DiGennaro	Quiz #1
3	9/14 (M)	**Research Background: Genomics/ Genome Sequencing**	DiGennaro	Quiz #2
	9/16 (W)	**Formulating Research Questions & Hypotheses**	Auletta	
4	9/21 (M)	**Experimental Design**	DiGennaro	Homework #1
	9/23 (W)	**DNA Extraction & Genome Amplification**	DiGennaro	
5	9/28 (M)	**Objectivity & Bias in Science**	Auletta	Quiz #3
	9/30 (W)	**DNA Quantification**	DiGennaro	
6	10/5 (M)	**How do we Communicate Science Effectively?**	Auletta	Quiz #4
	10/7 (W)	**Presenting to a Scientific Audience: What Makes a Good Poster?**	Auletta	Homework #2
7	10/12 (M)	**Work on Project: Tour of Sequencing Facility**	Guest	
	10/14 (W)	**Work on Project: Intro to HiPerGator**	Guest	
8	10/19 (M)	**Work on Project: Data Analysis & Visualization**	DiGennaro	Homework #3
	10/21 (W)	**Work on Project: Data Analysis & Visualization**	DiGennaro	
9	10/26 (M)	**Practice Poster Presentations**	Auletta, DiGennaro	Research Poster Draft
	10/28 (W)	**Global Science: Benefits & Challenges of Working Across Borders**	Auletta	Lab Notebook Check #1
10	11/2 (M)	**Work on Project: Data Analysis & Visualization**	DiGennaro	Revised Research Poster & Recorded Presentation
	11/4 (W)	**What Does It Mean to be an Ethical Scientist?**	Auletta	Quiz #5
11	11/9 (M)	**Panel Discussion with Graduate Student Researchers**	Auletta	
	11/11 (W)	**Veteran's Day Holiday–NO CLASS!**	---	

12	11/16 (M)	**Work on Project: Data Analysis & Visualization**	DiGennaro	Homework #4
	11/18 (W)	**Paper Discussion**	Auletta, DiGennaro	Quiz #6 Lab Notebook Check #2
13	11/23 (M)	**Science & the Media: How do we Build Public Trust in Science?**	Auletta	Quiz #7 Interview Transcript for "Science Across Borders" Essay
	11/26 (W)	**Thanksgiving Holiday–NO CLASS!**	---	
14	11/30 (M)	**Work on Project: Data Analysis & Visualization**	DiGennaro	
	12/2 (W)	**Your Future Research: Opportunities @ UF and Beyond**	Auletta	Homework #5
15	12/7 (M)	**Let's Discuss Our Findings: What are the Next Steps?**	DiGennaro	
	12/9 (W)	**Reflecting on our Research Experience Course Evaluations**	Auletta, DiGennaro	Turn in Lab Notebook "Science Across Borders" Essay (Final Draft)

* Although we will do our best to adhere to this schedule, it may be adjusted during the semester to accommodate opportunities, disruptions, etc. These changes will be communicated clearly via Canvas.

📅 List of Important Dates

Key dates to remember are below– be sure to add them to your calendar!

September 7th: No class (Labor Day)
November 2nd: Final Research Poster & Presentation Video due
November 5th: Undergraduate Research Symposium
November 11th: No class (Veterans' Day)
November 26th: No class (Thanksgiving Break)
December 9th: Last day of class– "Science Across Borders" Essay due; Lab Notebook turned in

Due dates for smaller assignments (such as quizzes, homework assignments, and preliminary stages of larger projects) are listed in the Course Schedule above and on Canvas.

* There is <u>no final exam</u> for this class, nor is there anything due during finals week. *

🛡️ University Policy on Academic Honesty

As a student at the University of Florida, you have committed yourself to uphold the **Honor Code**, which includes the following pledge: *"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."* You are

expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit 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."*

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code.

Accommodations for Students with Disabilities

The **Disability Resource Center** coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

Disability Resource Center
001 Reid Hall
(352) 392-8565
https://disability.ufl.edu/

Instructors' Note: Remember, we want to help you succeed in this course! After we receive your request and documentation, we will arrange a meeting with you to discuss the accommodation options in more detail. To ensure that the necessary accommodations are in place as early as possible, please be sure to start this process **at (or before) the beginning of the semester**!

Ensuring Privacy in Online Courses

Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

Software Use

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

During the course, you will use **HiPerGator** to analyze data for your project. By participating in this course, you agree to the following policies regarding HiPerGator:

ACCEPTABLE USE: I acknowledge that the access to the HPC resources operated by UF Research Computing is subject to the UF Acceptable Use Policy at https://it.ufl.edu/policies/acceptable-use/acceptable-use-policy/ and the Research Computing policies at http://www.rc.ufl.edu/services/procedures/ and that I am responsible for following these policies.

RESTRICTED DATA: I also certify that using restricted data and software on the HPC resources requires extra steps described at UFRC Policies and at UFRC Export Policies, and that I will notify both my account sponsor and the Office of Research (Research Compliance) and Research Computing at support.rc.ufl.edu when I am working with such data.

Course Evaluations

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. 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: https://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 https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at: https://gatorevals.aa.ufl.edu/public-results/.

Campus Helping Resources

Students experiencing crises or personal problems that interfere with their general wellbeing are encouraged to utilize the university's counseling resources. **The Counseling & Wellness Center** provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance:

University Counseling & Wellness Center
Counseling Services, Groups and Workshops, Outreach and Consultation, Self-Help Library, Wellness Coaching

3190 Radio Road
(352) 392-1575; https://counseling.ufl.edu

Other campus resources include:

- **U Matter, We Care**: http://umatter.ufl.edu

- **Career Connections Center**: Reitz Student Union- First Floor; (352) 392-1601; http://career.ufl.edu

- **Student Success Initiative**: http://studentsuccess.ufl.edu

- **Student Complaints**: Complaints regarding on-campus courses may be filed at https://sccr.dso.ufl.edu/policies/student-honor-code-studentconduct-code/. For online courses, please see https://distance.ufl.edu/getting-help/student-complaint-process/.

*** It is your responsibility to make sure that you fully understand and comply with the policies outlined in this syllabus, as well as the policies of the university as they relate to this course. If you have any questions, please contact the instructors! ***