

Essentials of Integrative Biology

51:126:540 Essentials of Integrative Biology

Fall 2021

Instructor

Anthony Geneva

anthony.geneva@rutgers.edu (<mailto:anthony.geneva@rutgers.edu>)

Course Information

Thursdays, 6:00 pm-8:50 pm


Armitage Hall, Room 105

Course Materials (including an updated version of this syllabus) will be available on CANVAS

Office Hours

Zoom, by appointment

Course Summary

This course is intended to provide students with a background and understanding of the field of Integrative Biology and its impact on all aspects of the life sciences with an emphasis on the value of an evolutionary perspective. We will cover a wide variety of scientific approaches by critically reading and discussing recently published current research. Each week we will read and discuss papers from a variety of research disciplines then discuss the ations, methods, and findings of these recent publications. In addition to learning the fundamentals of integrative biology, students will also learn how to critically read, evaluate, and discuss the literature.

Evaluation

Presentations

Each week two papers will be presented and discussed. Papers will be selected in consultation with the instructor. Selected papers must 1) present new research - review papers are not acceptable 2) take an integrative approach to asking biological questions and 3) be published in the last 5 years (although I can be persuaded to accept a paper up to 10 years old). The paper presentation should consist of a thorough explanation of the paper's **background, methods, results, conclusions, and careful examination of major figures**. Each of these five sections are worth 10 points each. Students will prepare slides and present them to the class. Students can use any presentation software they prefer. Presenters should include major figures from the paper in their slides and are encouraged to include relevant materials from outside the assigned paper. Presentations should last 30-40 minutes and will be followed by 20-30 minutes of class discussion.

Discussion Support

For each paper an additional student (other than the presenter) will be assigned the role of Discussion supporter. For this task the student will thoroughly read the paper and **prepare at least three points to discuss** after the presentation is completed. These should be topics to promote discussion about the motivation, interpretation, or ramifications of the work and not simply matters of fact.

Discussion Participation

All students are expected to read each paper prior to class and be prepared to discuss them. While you may not have something to say for every paper we read, I expect that everyone will regularly contribute to our conversations, and a portion of your grade will be based on your active participation in the discussion.

Final Project

At the end of the course all students will submit a final project. The exact nature of the project will be determined during the course of the semester, with the input of the class. Requirements for the final project will be announced prior to the Thanksgiving break. Possibilities include a brief paper summarizing the current state of knowledge on a relevant topic, a research proposal, or a formal manuscript peer-review.

Grading Criteria

10% Participation in paper discussions

50% Paper presentation

20% Discussion Support



Final Project

Attendance

Unless notified by the University, we are expected to exclusively meet in person for class. That said, if you are instructed to quarantine or have COVID-related symptoms **DO NOT COME TO CLASS**. We will make arrangements to make up missed presentations or discussions.

Academic Dishonesty

Rutgers University takes academic dishonesty very seriously. By enrolling in this course, you assume responsibility for familiarizing yourself with the Academic Integrity Policy and the possible penalties (including suspension and expulsion) for violating the policy. As per the policy, all suspected violations will be reported to the Office of Community Standards.

Academic dishonesty includes (but is not limited to):

- cheating
- plagiarism
- aiding others in committing a violation or allowing others to use your work
- failure to cite sources correctly
- fabrication
- using another person's ideas or words without attribution
- re-using a previous assignment
- unauthorized collaboration
- sabotaging another student's work

If in doubt, please consult the instructor. Please review the Academic Integrity Policy at

<https://deanofstudents.camden.rutgers.edu/sites/deanofstudents/files/Academic%20Integrity%20Policy.pdf>
 (<https://deanofstudents.camden.rutgers.edu/sites/deanofstudents/files/Academic%20Integrity%20Policy.pdf>)

Based on these recommendations, cheating on an exam will automatically be punished with:

- Failing grade in the course
- Notation on your transcripts
- Suspension from the University for at least one semester

No exceptions will be made under any circumstances to this policy.

Specifically, plagiarism is a serious offense, especially in the field of the scientific research where it is usually punished with the practical end of the career of the individual that engages in it. All written materials required by the instructor will be scanned by Turnitin or similar software to search for plagiarism. Please, review the definition of plagiarism and practical examples of it at the Roberson Library website:

<http://library.camden.rutgers.edu/EducationalModule/Plagiarism/>. Plagiarism will also be punished following the Academic Integrity Policy recommendations, also in this case, no exceptions will be made to this policy, under any circumstances.



All university employees are considered "Responsible Employees" and therefore must report any disclosures that include any act of sexual misconduct, bullying, stalking or hostile environment to the Title IX Coordinator at respect.rutgers.edu.

- Allison Wisniewski- Title IX Coordinator, 856-225-6422, aemery@camden.rutgers.edu.
- Thomas DiValerio- Dean of Students, 856-225-6050, tdivaler@camden.rutgers.edu.
- Judy Ryan- Title IX Coordinator, University wide, 732-932-1084, judy.ryan@rutgers.edu.

As a resource, the Office of Violence and Victim Assistance is available to students 24/7 for instances of interpersonal violence at 856-225-2326. For additional resources, visit: vpva.camden.rutgers.edu

Accommodations for Disabilities

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation:

<https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form at:

<https://webapps.rutgers.edu/student-ods/forms/registration> [_ \(https://webapps.rutgers.edu/student-ods/forms/registration\)](https://webapps.rutgers.edu/student-ods/forms/registration).

Tentative Schedule (N.B. this may change depending on our progress)

Date	Topic	Reading	Presenters	Facilitators
02 September	Introductions, Syllabus, Course Format, Questions	none		
09 September	Intro to Integrative Biology (AG lecture)	To be posted soon		
16 September	Yom Kipur, No class			
23 September	Evolution/Ecology	2 papers will be posted to Canvas	Helen Alexa	Maria Setareh
30 September	Evolution/Ecology	2 papers will be posted to Canvas	Udari Ryan	Emily Qhawe
07 October	Genetics/Genomics/Bioinfo.	2 papers will be posted to Canvas	Maria Adam	Austin Helen
14 October	Genetics/Genomics/Bioinfo.	2 papers will be posted to Canvas	Mariadelia Nada	Nada Matthew
21 October	Genetics/Genomics/Bioinfo.	2 papers will be posted to Canvas	Sathya Qhawe	Udari Alexa
28 October	Neurobiology/Behavior	2 papers will be posted to Canvas	Chris Matthew	Lindsey Saeideh
04 November	Proteomics	2 papers will be	Regina	Mariadelia

		posted to Canvas	Austin	Chris
11 November	Proteomics	2 papers will be posted to Canvas	Abby Emily	Adam Noureen
18 November	Disease	2 papers will be posted to Canvas	Lindsey Saeideh	Abby Sathya
25 November	Thanksgiving, no class			
02 December	Disease	2 papers will be posted to Canvas	Noureen Setareh	Ryan Regina
09 December	<i>TBD</i>	<i>TBD</i>		

