Biology 105 – Contemporary Biology – Fall 2025 – Reinhardt

Instructor: Dr. Josie Reinhardt: reinhardt@geneseo.edu, **ISC349**
Office Hours: Mondays & Wednesdays at 2:00-3:30

Course meeting: 12:30 to 1:45 on Mondays and Wednesdays in Newton 209

Textbook: We will be using an online textbook, *Biology for a changing world 4th edition* by Michele Shuster and colleagues. The book and associated assignments should be purchased through the link in Brightspace. Step by step instructions for purchasing and accessing the material can be found here: https://mhe.my.site.com/macmillanlearning/s/article/Students-Register-for-Achieve-courses-via-your-school-s-LMS You may obtain a free trial for the online textbook for a limited time. This exists to ensure students who may be awaiting financial aid for textbook purchases have equal access to the course. However, it is your responsibility to ensure that you own a copy of the book before it expires so you can complete assignments on time.

Course description: Biology applied directly to contemporary personal, social, and environmental problems; the biological problems evolving from technology; and current suggestions offered by leading biologists on solving these problems.

This course is intended to help you learn how to see the world through the eyes of a scientist, in order to help you become an informed citizen able to carefully and skeptically examine claims about our living world.

This course is not a comprehensive introduction to all of Biology. For that, you'll want BIOL117 / BIOL119. While we will discuss topics from molecule to ecosystem scales, we will not cover as much content. In this course, we will touch on some topics relevant to humans and human health, but if you enjoy this course and want to know even more about humans, I encourage you to consider also taking our Human Biology course (BIOL103/104). The department also offers topics courses that can be taken after this course (Heredity BIOL271 and Nutrition BIOL210).

Learning Objectives for Scientific Reasoning

Students will demonstrate scientific reasoning applied to the natural world, including

- an understanding of the methods scientists use to explore natural phenomena, including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of data analysis or mathematical modeling; and
- application of scientific data, concepts, and models in one of the natural (or physical) sciences (Biology)

Learning Objectives for Contemporary Global Challenges PGS attribute

Students will

- understand how local and global systems depend upon one another
- apply global perspectives in addressing challenges and solving problems

Content Learning Objectives

Students will

- understand what life is and how Biologists study it

- understand how organisms interact with each other and the planet throughout the history of life
- understand how the information of life is transmitted and functions
- understand how life on this planet, including humans, has and continues to evolve

A note about this course and the GLOBE (general education) requirements: If successfully completed along with the lab (BIOL106) this course fulfills the Natural Science requirement of both Geneseo and SUNY. In addition, this course includes content fulfilling learning objectives of Geneseo's Participation in a Global Society (PGS) category Contemporary Global Challenges. In order to complete your PGS requirement, you must complete at least one additional course each in the Arts, Humanities, and Social Sciences that cover the other PGS categories. For more information please see your academic adviser and/or contact the office of academic planning (https://www.geneseo.edu/advising)

Assessment – you will be completing assignments in the following 5 categories:

Achieve adaptive quizzes and homework (14): 28%
In-class Activities (8): 16%
Tophat (join code: **914808**): 10% (5% participation, 5% correctness)
Unit Quizzes (4): 28% individual, 8% group
Biology in the news final project: 10%

Achieve adaptive quizzes and in-class activities (and half your tophat grade) are graded for satisfactory completion, so you should be able to get these points simply by attending/participating! It's extremely important you don't miss these "free" points (note: the lowest assignment in each category is dropped in case you have an unavoidable absence).

Tophat is a "clicker" software that you can access using your phone, tablet, or laptop. We will use it during class to ensure you are following key lecture concepts. Go to https://tophat.com/, log in with your **GENESEO.edu** gmail account, then find my course using the join code **914808**

Through the semester we will be discussing "Biology in the News" in groups in class. Beginning with a news article/headline, blog or social media post about recent biological or biomedical science, in groups you will analyze the quality of the coverage using criteria we learn. For your final project, after polishing these skills in class, you will be doing the same individually on any topic of your choice.

Grading Scale

Grades are based on the percentage of points you earned, rounded to the nearest 10^{th} of a percent

	B+ 87.0-89.9%	C+ 77.0-79.9%	
A 93.0-100%	B 83.0-86.9%	C 73.0-76.9%	D 60.0-69.9%
A- 90.0-92.9%	B- 80.0-82.9%	C- 70.0-72.9%	E <60%

I will also take attendance using Tophat. You won't *lose* points for missing class, but as an extra incentive for attending, I will **round UP** your final grade to the nearest percentage rather than the nearest 10^{th} of a percent as long as you miss no more than 3 classes.

Course policies & resources

- **Health and wellness:** If you have symptoms of potentially contagious disease please do not come to class. Be in communication with me as needed about making up material. If you begin feeling ill during class you can leave promptly and let me know via email, please don't worry about being rude. SUNY Geneseo welcomes mask use for anyone for any reason, and there are masks dispensers available by most restrooms.
- **Unit Quizzes:** Unit Quizzes are taken first individually, and then with a group, allowing you to immediately get feedback on your work. They will be given on paper during class and timed for 30 minutes for each part. You may prepare and bring a small notecard with you for each quiz. Use of **any other outside resource** including web searches during quizzes constitutes cheating and will result in a zero (see academic dishonesty policy below). Please note that Unit quizzes are to be taken during class time on the day they are scheduled (approved accommodations excepted), so please check your schedule carefully ahead of time and let me know if you have anything that would conflict within the first week of class. Make-up exams are allowed for unanticipated emergencies and other allowed events as described in the student handbook (e.g. religious observances, varsity sports, etc). Please reach out if you have any questions or issues as soon as possible.
- **Accessibility and Disability:** SUNY Geneseo is dedicated to providing an equitable and inclusive educational experience for all students. The Office of Accessibility (OAS) will coordinate reasonable accommodations for persons with disabilities to ensure equal access to academic programs, activities, and services at Geneseo. Students with approved accommodations may submit a **semester request** online to renew their academic accommodations. Please visit the OAS website for information on the process for **requesting academic accommodations** and contact the Office of Accessibility Services for questions related to access and accommodations: Erwin Hall 22, (585) 245-5112
- **Mental Health Policy:** I take mental health problems as seriously as I would issues with your physical health. Diminished mental health, including significant stress, mood changes, excessive worry, or problems with eating and/or sleeping can interfere with optimal academic performance. If the source of your symptoms is directly related to this class, please speak with me. However, problems with relationships, family worries, loss, or a personal struggle or crisis can also contribute to decreased academic performance. SUNY Geneseo provides mental health services to support the academic success of students. Counseling Services, a part of the Lauderdale Center for Student Health & Counseling, offers free, confidential psychological services to help you manage personal challenges that may threaten your well-being. Call 585-245-5716 to make an appointment and also see this page for **emergency resources**. If you feel more comfortable talking to peers, Geneseo students also lead a peer counseling group called Pathways. www.geneseo.edu/pathways
- **Academic Dishonesty & Plagiarism:** Presenting others' work as if it were your own, or providing such help to others constitutes academic dishonesty. The format of this inappropriate help does not matter. This is important not only due to fairness, but also so that instructors can provide feedback that is useful to improving your understanding and skills (feedback on work that is not your own is not useful to anyone!). Of course, in the case of group work the product will include input from all members. Any work that you are presenting as your own *must be original to you*. If you're struggling in class, please ask

for help rather than resorting to academic dishonesty! I'm here to assist you if you have any concerns. SUNY Geneseo has instituted policies and procedures that must be followed in the event of an occurrence of Academic dishonesty: https://www.geneseo.edu/dean_office/dishonesty). Immediate consequences include a report to the department chair and Dean of the College and a loss of points on impacted assignment(s).

- **Grading options:** Students should be aware that there are multiple grading options available to them. For example, an incomplete ("I") grade, withdrawing from a class ("W"), and taking a Pass/Fail grading mode may be options. In addition, students may choose to repeat courses in which they have earned grades of D, E, F, U, or W (however, there are limits on the number of times you can repeat a course and have it count towards your major). Up to date policies on all of these options can be found on the Academic Policies, Standards, and Information section of the Undergraduate bulletin. In addition, please reach out to me and your academic adviser as soon as possible if you are having difficulty in the course.
- **AI use:** Part of what I'm trying to teach in this course is responsible use of all types of tools, including artificial intelligence tools. AI can be helpful for doing things like summarizing material, especially highly technical material, and I am open to this type of usage when we are reading scientific papers or articles in areas new to you. However, I'd caution that part of what we learn when reading scientific papers is the ***skill*** of summarizing this type of information yourself, so there are likely tradeoffs. Any material ***written by*** generative AI such as ChatGPT etc. is by definition not written by you, so constitutes plagiarism if you present it as your own. You may provide AI generated text if you attribute it properly along with the text you used to prompt the AI tool. When AI is used to revise text that you wrote beyond grammar/spellchecking, a statement should be provided to that effect. I won't police your use of AI for online (Achieve) assignments, but these assignments are designed to help you learn the material for the Unit Quizzes and are graded based on completion. So, if you have AI do your homework for you, you're only hurting your own ability to learn and achieve a good grade.

Course Schedule – Subject to change following instructor discretion and pedagogical needs.

DoW	M	Topic	In-class Activities
M	25-Aug	Chapter 1 - Process of Science	**Achieve:** Chapter 1 (due 9/3)
W	27-Aug	Chapter 1 - Process of Science	**In-class Activity:** Statistical fallacies
M	1-Sep	LABOR DAY – NO CLASS	
W	3-Sep	Chapter 3 - Cell Structure and Function	**Achieve:** Chapter 3 (due 9/10)
M	8-Sep	Chapter 3 - Cell Structure and Function	**In-class Activity:** Biology in the News 1
W	10-Sep	Chapter 17 & 18 - Prokaryotic and Eukaryotic Diversity	**Achieve:** Chapters 17 and 18 (Due 9/17)
M	15-Sep	Chapter 17 & 18 - Prokaryotic and Eukaryotic Diversity	**UNIT QUIZ 1 review**
W	17-Sep	**UNIT QUIZ 1**	**Ch 1, 3, 17, 18**
M	22-Sep	Chapter 5 & 23 – Energy, Photosynthesis, and climate change	**Achieve:** Chapters 5 and 23 (Due 10/1)
W	24-Sep	Chapter 5 & 23 – Energy, Photosynthesis, and climate change	**In-class Activity:** Biology in the News 2
M	29-Sep	Chapter 5 & 23 – Energy, Photosynthesis, and climate change	**In-class Activity:** How much CO2 is in this tree?
W	1-Oct	Chapter 20 & 21- Ecology	**Achieve:** Chapter 20 & 21 (Due 10/8)
M	6-Oct	Chapter 20 & 21- Ecology	**UNIT QUIZ 2 review**
W	8-Oct	**UNIT QUIZ 2**	**Ch 5, 23, 20, 21**
M	13-Oct	FALL BREAK – NO CLASS	
W	15-Oct	Chapter 7 – DNA structure	**Achieve**: Chapter 7 (Due 10/20)
M	20-Oct	Chapter 8 – Gene Expression	**Achieve:** Chapter 8 (Due 10/22), **FINAL PROJECT TOPICS DUE**
W	22-Oct	Chapter 8 – Gene Expression	**In-class Activity:** Biology in the News 3
M	27-Oct	Chapter 11 - Inheritance	**Achieve:** Chapter 11 (Due 10/29)
W	29-Oct	Chapter 11 - Inheritance	**In-class Activity:** Cat genetics game
M	3-Nov	Chapter 9 - Mutations and Genetic Engineering	**Achieve in-class:** Chapter 9 (Due 11/10)
W	5-Nov	Chapter 9 - Mutations and Genetic Engineering	UNIT QUIZ 3 review
M	10-Nov	**UNIT QUIZ 3**	**Ch 7, 8, 9, 11**
W	12-Nov	Chapter 13 - Natural Selection and Adaptation	**Achieve:** Chapter 13
M	17-Nov	Chapter 13 - Natural Selection and Adaptation	**In-class Activity:** Evodots **FINAL PROJECT OUTLINE DUE**
W	19-Nov	Chapter 15 - Evidence for Evolution	**Achieve:** Chapter 15 (Due 11/19)
M	24-Nov	Chapter 15 - Evidence for Evolution	**In-class Activity:** Biology in the News 4
W	26-Nov	THANKSGIVING BREAK	
M	1-Dec	Chapter 12 - Human genetics	**Achieve:** Chapter 12 (Due 12/3)
W	3-Dec	Chapter 19 - Human Evolution	**Achieve:** Chapter 19 (Due 12/12)
M	8-Dec	Chapter 19 - Human Evolution	UNIT QUIZ 4 review, **FINAL PROJECT DUE**
Th	12-Dec	**UNIT QUIZ 4 (finals period) 3:30PM**	**Ch 13, 15, 12, 19**