

**Instructor:** Dr. Josie Reinhardt: [reinhardt@geneseo.edu](mailto:reinhardt@geneseo.edu), ISC349

**Office Hours:** Tu 11:30-12:30, We 12:30-1:30, Thur 1-2

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

**Textbook:** We will be using an online textbook, *Biology for a changing world 4<sup>th</sup> edition* by Michele Shuster and colleagues. The book and associated assignments are 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>

**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 as you would have had even in your high school biology class. 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 taking our Human Biology course (BIOL103/104).

### **Learning Objectives**

- Students will demonstrate an understanding of the methods biologists 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
- Students will demonstrate scientific reasoning including an application of scientific data, concepts, and models in the biological and biomedical sciences
- Students will understand how local and global biological systems depend upon one another
- Students will apply global perspectives in addressing challenges and solving problems in biology and bio-medicine
- Students will be able to identify and analyze major sustainability challenges and solutions at local to global scales
- Students will understand the interactions between political, economic, socio-cultural, and environmental systems
- Students will understand the roles of power, influence, and inequity in sustainability.

**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 two of Geneseo's Participation in a Global Society (PGS) categories: (1) Sustainability and (2) 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 three PGS categories. For more information please see your academic adviser and/or contact the office of academic planning (<https://www.geneseo.edu/dean-office>)

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

Achieve Assignments (14): 28%

Biology in the news in-class (8): 16%

Tophat in-class (**join code 481137**): 10% (5% participation, 5% correctness)

Achieve Unit Quizzes (4): 36%

Biology in the news final project: 10%

Achieve assignments and Biology in the News 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!

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** gmail account, then find my course using the join code **481137**

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. **You may submit your final project at any time throughout the semester** that you wish but ultimately it is due by the last day of class.

### **Grading Scale**

Grades are based on the percentage of points you earned, rounded to the nearest 10<sup>th</sup> 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%    E <60%

A- 90.0-92.9%    B- 80.0-82.9%    C- 70.0-72.9%

I will also take attendance. You won't *lose* points for missing class, but as an extra incentive for attending, I will **round UP** to the nearest percentage rather than the nearest 10<sup>th</sup> 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. SUNY Geneseo welcomes mask use for anyone for any reason, and there are masks dispensers available by most restrooms. Please follow the most up-to-date guidelines for COVID19 testing, vaccination, and monitoring posted on Geneseo's website: <https://www.geneseo.edu/covid>

- **Quizzes:** Will be given on Achieve during class on your laptops. 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 exams are to be taken during class time on the day they are scheduled, 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, significant 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 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](http://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](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](#)

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[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.

**Course Schedule** – Subject to change following instructor discretion and pedagogical needs. **See Brightspace** for the up to date turn in deadlines for each assignment.

DoW	M	Topic	Assignments/Activities
M	8/28	Chapter 1 - Process of Science	<b>Achieve:</b> "Do Cell Phones Cause Cancer?"
F	9/1	Chapter 1 - Process of Science	Biology in the News 1
M	9/4	LABOR DAY	
F	9/8	Chapter 3 - Cell Structure and Function	<b>Achieve:</b> "Wonder Drug"
M	9/11	Chapter 3 - Cell Structure and Function	Biology in the News 2
F	9/15	Chapter 5 - Energy and Photosynthesis	<b>Achieve:</b> "The Future of Fuel?"
M	9/18	Chapter 5 - Energy and Photosynthesis	Quiz 1 review
F	9/22	<b>QUIZ 1</b>	<b>Ch 1, 3, 5</b>
M	9/25	Chapter 17 & 18 - Prokaryotic and Eukaryotic Diversity	<b>Achieve:</b> "Invisible you", "Can Rubber save the rainforest?"
F	9/29	Chapter 17 & 18 - Prokaryotic and Eukaryotic Diversity	Biology in the News 3
M	10/2	Chapter 20 - Population Ecology	<b>Achieve:</b> "On the tracks of wolves and moose"
F	10/6	Chapter 20 - Population Ecology	Biology in the News 4
M	10/9	FALL BREAK	
F	10/13	Chapter 23 - Global Climate Change	<b>Achieve:</b> "Vital signs"
M	10/16	Chapter 23 - Global Climate Change	Quiz 2 review
F	10/20	<b>QUIZ 2</b>	<b>Ch 17,18,20,23</b>
M	10/23	Chapter 7 - DNA Structure and Replication	<b>Achieve:</b> "How DNA helped free an innocent man"
F	10/27	Chapter 8 - Genes to Proteins	<b>Achieve:</b> "Spider silk, the next indestructible superfiber?"
M	10/30	Chapter 8 - Genes to Proteins	Biology in the News 5
F	11/3	Chapter 9 - Mutations and Genetic Engineering	<b>Achieve:</b> "New Gene, New me?"
M	11/6	Chapter 9 - Mutations and Genetic Engineering	Biology in the News 6, <b>FINAL PROJECT TOPICS due</b>
F	11/10	Chapter 11 - Simple Inheritance and Meiosis	<b>Achieve:</b> "Outrunning a genetic disease"
M	11/13	Chapter 11 - Simple Inheritance and Meiosis	Quiz 3 review
F	11/17	<b>QUIZ 3</b>	<b>Ch 7, 8, 9, 11</b>
M	11/20	Chapter 13 - Natural Selection and Adaptation	<b>Achieve:</b> "Bugs that resist drugs"
F	11/24	THANKSGIVING BREAK	
M	11/27	Chapter 13 - Natural Selection and Adaptation	Biology in the News 7
F	12/1	Chapter 15 - Evidence for Evolution	<b>Achieve:</b> "A fish with fingers?"
M	12/4	Chapter 15 - Evidence for Evolution	Biology in the News 8
F	12/8	Chapter 19 - Human Evolution	<b>Achieve:</b> "Skin deep"
M	12/11	Chapter 19 - Human Evolution	Quiz 4 review, <b>FINAL PROJECT DUE</b>
F	12/13	<b>QUIZ 4 (finals period)</b>	<b>Ch 13, 15, 19</b>