

M/BIOLOGY 318, HEALTH AND THE DEVELOPING WORLD

SYLLABUS, FALL, 2021

INSTRUCTOR INFORMATION

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Office hours: TBA

Mondays 2:30-3:45, Wednesday 1:00-2:15 (drop-in hours) and Fridays (9:00-10:15; appointment slots), and additional times by appointment. Here is the [appointment page for my calendar](#); times will be available through the week but at varying times other than Friday morning. Office hours can be in person or via Zoom; the Zoom link is

<https://geneseo.zoom.us/j/82688143666?pwd=aG1SVXJ0a3VMNG56dVpRcU9jbGh6dz09>

COURSE FORMAT

For the Fall of 2021, this course is face-to-face. Classes meet from 4:00-5:15 Mondays and Wednesdays in Newton 209.

COURSE DESCRIPTION

Students in this course will examine the biology of health and disease by focusing on public health in Africa, Asia, Latin America and the Caribbean. This course will explore the biology of infectious diseases and their influences on history and culture in these regions as well as the social and economic impact of public health for contemporary societies. Topics addressed also include global change and the global shift to non-communicable disease. Topics addressed will also include prospects for change through collaborative scientific research. Prerequisites: BIOL 117 and BIOL 119. Offered every fall. Credits: 3

TEXTS, OTHER READINGS AND OTHER COURSE MATERIALS

REQUIRED TEXT: Jacobsen, K H. Introduction to Global Health, third edition. Sudbury, MA: Jones & Bartlett. 2018. Any format is acceptable. Use of earlier editions is not advised because of extensive organizational changes. We will not use the online supplements.

CANVAS: Additional articles, case studies, links to videos and other valuable resources, and lecture notes will be available on Canvas. In addition to the syllabus, a weekly announcement provides specific

information about readings required each week including any updates or changes. You will need to bring copies (either electronic or paper) of some of these with you to class. In addition, you may have some printing and copying costs for the writing assignments.

LEARNING OUTCOMES

FOR THIS COURSE:

STUDENTS WHO ARE ACTIVE PARTICIPANTS AND COMPLETE ALL COURSE REQUIREMENTS WILL BE ABLE TO:

1. Define health, and describe and explain multiple models of health and disease.
2. Describe and compare health outcomes across populations using appropriate statistics, and understand limitations in estimating and representing these data.
3. Demonstrate an understanding of the biology of infectious and non-communicable diseases.
4. Describe and explain the interrelationships among biological, historical, social and cultural factors affecting transmission, treatment and prevention of infectious diseases.
5. Demonstrate understanding of the biological basis of aging and its relationship to health transitions across societies.
6. Describe the interrelationship of health with culture and human rights, particularly pertaining to issues of ethical scientific inquiry and equitable access to the products of scientific inquiry.
7. Describe some non-western models of inquiry, and efforts to integrate western and non-western understandings of particular issues, and explore scientific discourse communities in non-western contexts.
8. Describe and explain interrelationships among science, culture and policy including responses to global change and transnational threats.

MULTICULTURAL CORE LEARNING OUTCOMES:

STUDENTS WHO ARE ACTIVE PARTICIPANTS AND COMPLETE ALL COURSE REQUIREMENTS WILL BE ABLE TO:

1. an understanding of knowledge held outside the Western tradition;
2. an understanding of history, ideas, and critical issues pertaining to non-western societies;
3. an understanding of significant social and economic issues pertaining to Non-western societies;
4. an understanding of the symbolic world coded by and manifest in Non-western societies;
5. an understanding of traditional and/or contemporary cultures of Latin America, Africa, and/or Asia and the relationship of these to the modern world system;
6. an ability to think globally

WHAT MAKES THIS COURSE MULTICULTURAL?

THIS COURSE EMPHASIZES FOUR AREAS RELEVANT TO THE MULTICULTURAL CORE. THESE ARE:

1. Examination of non-Western examples of science including models of health and disease, non-western scientific knowledge and approaches, and non-western attitudes to nature (multicultural learning outcomes 1, 4)
2. Examination of contemporary issues in Asia, Africa and Latin America for which scientific knowledge is relevant (learning outcomes 3, 5, 6)
3. Examination of bias and power relations in western science in the choice of topics for investigation as well as the methods used (learning outcomes 2, 3, 5, 6)
4. Examination of contemporary science and scientific communities in Asia, Africa and Latin America (learning outcomes 2, 3, 5 and 6)

EVALUATION – SUMMARY

25%: Day-to-day (quizzes, reflections, discussions)

25%: Portfolio assignment and final

50%: Tests (3, 20% each with lowest score dropped)

ADDITIONAL INFORMATION ABOUT EVALUATION

OVERVIEW:

Below is a brief description of the quizzes, homework, exams, and writing assignment that contribute to your grade. Additional information about the presentations and paper will be provided in separate documents on Canvas.

DAY-TO-DAY:

Small assignments provide an essential foundation for success on both the tests and final. You will typically have a quiz and a reflective homework weekly. The day-to-day activities are intended to deepen your understanding of topics from the reading and class discussion. It is helpful to think of these as pacing your studying and .

TESTS:

Tests will consist primarily of short answer and short essay questions, but also can include multiple choice, multiple select, or justified true/false questions. Many questions will test your ability to apply concepts learned to the context of particular global health crises. Some questions will require you to analyze data or evaluate evidence. Tests will be given online, and you will be able to use your book and notes. However, success will require studying as you would for any test because you will not have time to look up all of the relevant information.

FINAL PORTFOLIO AND REFLECTION:

There will be a final exam at the end of the semester. You will prepare a portfolio of smaller assignments throughout the semester that you will turn in as part of your final. These will focus on an additional global health crisis, COVID19 in India. In addition, you will take a brief test during the final exam time slot. There will be some flexibility and choice in the assignments you complete. Early assignments will be turned in for feedback.

TENTATIVE SCHEDULE OF TOPICS WITH READINGS

The overall organization will consist of short blocks of two to four weeks. These will each be organized a public health issue or crisis. Most weeks, you will have a reading assignment that consists of most or all of one chapter of the text, plus short readings. Some weeks, the reading assignment will consist of several small sections of the text. A few weeks, there will be other longer readings, particularly in the first three weeks.

TENTATIVE SCHEDULE OF TOPICS AND READINGS

MONDAYS	WEDNESDAYS	READINGS
Aug. 30 Getting started	Sept. 1 Unit 1: Ebola in West Africa	Chapter 1 Outside reading: Piot
9/6 Labor Day -- no class	9/8 Library	Chapter 2 Outside reading: WHO
9/13	9/15 Library	Chapter 3 Case study
9/20	9/22 Unit 2: Earthquake and cholera in Haiti	Outside reading: Sapolsky Chapter 17
9/27	9/29 Test 1	Chapter 4
10/4	10/6	Chapter 4; Chapter 9
10/11 -- Fall Break	10/13	Outside reading: Orata et al.

TENTATIVE SCHEDULE OF TOPICS AND READINGS, CONT'D

10/18 Unit 3: HIV and Tuberculosis in Southern Africa	10/20	Chapter 8 Case study
10/25	10/27	Case study
11/1 Unit 4: Malaria and Neglected Tropical Diseases in Brazil	11/3 Test 2	Chapter 10
11/8	11/10	Outside reading: Lowe Case study
11/15	11/17	Outside readings: Hotez
11/22 Unit 5: Non-Communicable Diseases in Southeast Asia	11/24 Thanksgiving Break, no classes	Chapter 13
11/29	12/1	Chapter 14
12/6	12/8 Test 3	Chapter 15
12/13 -- last day of classes	12/15, 3:30 Final exam and submit final portfolio	

IMPORTANT NOTES:

This schedule is tentative and subject to change. Check the announcements on Canvas each week to see what is required. Test dates will not change but content covered on a test may change with any schedule changes. The direction of change is likely to be dropping topics, not adding. Note that test dates do not align with the ends of units.

LIBRARY INSTRUCTION

Our research librarian for this class is Jonathan Grunert (grunert@geneseo.edu).

Students, faculty, and staff are able to schedule research consultations with librarians via Zoom or another medium, using this link: geneseo.edu/library/researchconsultations

Instead of in-person drop-in hours, librarians are staffing LibChat, a service that allows for online, chat-based synchronous communication. LibChat is available Mondays–Fridays. Access it by clicking on the green owl icon, which is located throughout the library website.

While electronic resources will continue to be accessible, Milne's physical collection will have limited access. Faculty, staff, and students are encouraged to use IDS to borrow materials from other libraries. For information about IDS and library services as a whole, see geneseo.edu/library/library-service-information

IMPORTANT POLICIES

COMMUNICATION:

Set up Canvas to provide daily updates via email or text message in order to ensure that you receive any updates or changes to the schedule. Check the announcements section regularly. Besides office hours, the fastest way to get in touch with me is via e-mail. Please include your name (not just your Geneseo email address) and the course name or number in all e-mails. To preserve my work-life balance, I may delay answering emails sent after 5 pm or on the weekends until the start of the next business day.

COVID

Due to the dynamic nature of the COVID19 pandemic, it is possible that changes to the schedule, assignments and content delivery mode will be necessary after the semester has started. If this is the case, be assured that I will prioritize student success, course continuity and open lines of communication.

ATTENDANCE AND EXPECTATIONS FOR CLASS:

This class is face-to-face, and attendance at class sessions is expected. Discussion figures prominently in class, and your unique mix of experiences and perspective contributes to the learning environment of others in the class. Missing class is sometimes necessary, and for this reason there will be asynchronous participation options available. However, a key role for discussion is in constructing a deeper understanding of the issues we examine, and this is not easily replaced with individual study.

ACADEMIC INTEGRITY:

Breaches of academic integrity devalue the work of other students. Cheating on exams is a serious breach of trust and will be treated accordingly. In this class, you are free to look up information during tests, but communication and collaboration are prohibited. Plagiarism is the misrepresentation of the originality of your work. Either of these will result in a failing grade for the test or assignment, and may result in a failing grade for the course. Claiming ignorance of the policy or of the definitions of cheating or plagiarism will not serve as an excuse.

APPEALING GRADES:

Any graded work may be submitted for re-evaluation along with a written appeal. Appeals must be submitted promptly, within one week of when the work is returned to you. The appeal should contain a brief written explanation of your concerns, including your understanding of the test question or assignment directions and why you believe your work meets the requirements. At the time that you turn in the work for appeal, we will schedule a conference to go over my response.

COPYRIGHTED MATERIALS:

Many of the materials that are provided to students in this course have been created by your instructor, by the textbook publisher, or by authors of published sources excerpted under educational fair use. You should assume that all course materials are protected by legal copyright. Copyright protection means that reproduction of this material is prohibited without the author's consent. Thus, you are prohibited from sharing or posting copyrighted material to any websites outside our course Canvas site. Students are also prohibited from reproducing material to be shared with other more limited groups (e.g., sorority/fraternity test bank). Be aware that UUP (Union of University Professionals, the union representing faculty on this campus) is seeking to take legal action against sites that provide instructor materials, and that posting or selling copies of materials to such sites may put you in legal jeopardy.

MISSING TESTS:

If you are sick or have an emergency arise the day of a test, I can modify the deadline for a test for you, particularly if you can take the test within a few days of the rest of the class. Because you may drop one test, one option is that you may also simply skip a test if you are sick or have an emergency. This can often help reduce your stress during a difficult time. If you are unable to complete a test for a longer period of time, you will receive a modified test or assignment in order for me to be able to return tests to other students.

EXTENSIONS ON THE GROUP PROJECTS:

Extensions on projects are more complex because you are working with other people. It may be necessary to separate your project from the group project and modify the requirements for both. Because the portfolio project is due at the end of the semester, an extension may require assigning an incomplete grade initially. If you are unable to complete your portions of a project in a timely manner, or if you have a partner who is not contributing to the group project, please contact me to discuss the situation as soon as you are aware of a problem. This will give us more flexibility and choices for responding.

MISSING DAY-TO-DAY ASSIGNMENTS:

The day-to-day assignments function to help you keep up with the reading and process class work in preparation for the tests, final and project. The benefits of completing the online assignments are greatest if you complete them in a timely way. If you will be unable to complete

course work for a week or more, please contact me along with the Dean of Students, Dr. Sancilio. Similarly, if you are working with the Accessibility Services Office and have accommodations related to due dates, please meet with me early in the semester to discuss your accommodations, and notify me if you will be unable to complete assignments for a week or more, or if you need additional flexibility.

EXPLANATION OF FINAL GRADES:

Grades are determined using the scale presented below almost always without any adjustment or curve. There are no quotas for particular letter grades. Helping others can only help you, and cannot hurt your grade in any way. Scores will be rounded up or down to the nearest whole number. The point distribution is the standard Geneseo distribution; Canvas is set to display this. The distribution is as follows: A: (93%), A- (90-92%), B+ (87-89%), B (83-86%), B- (80-82), C+ (77-79), C (73-76), C- (70-72), D (60-69), E (<60%)

ACCOMMODATIONS

DISABILITIES AND PREGNANCY OR PARENTING:

SUNY Geneseo will make reasonable accommodations for persons with documented physical, emotional, or cognitive disabilities. Accommodations will also be made for medical conditions related to pregnancy or parenting. Students should consult with the Office of Accessibility Services and see me regarding any needed accommodations as early as possible in the semester.

ACCOMMODATIONS FOR ENGLISH LANGUAGE LEARNERS:

individuals who have been using English as a primary language of instruction for 6 years or fewer and are actively working to improve English fluency may receive extra time on in-class tests and online quizzes. Please see me for assistance early in the semester if this applies.

DIVERSITY AND INCLUSION

Global health is about people as well as about diseases, and the use of inclusive language contributes to creating an environment conducive to learning for everyone. This will include use of individuals' preferred names and pronouns, use of group descriptors preferred by members of that group, and using language that is people-centered, non-judgmental and non-discriminatory. Inclusive language is dynamic and socially constructed, and requires communication and living with tension as individuals learn from each other.

FOR YOUR CONSIDERATION

DIFFICULT DISCUSSION TOPICS:

In this class, you will see some graphic and disturbing images. These are selected carefully to provide a deeper understanding of the issues. Understanding disease transmission requires discussing bodily functions and behaviors that you may not normally discuss with others. Treating others with respect, both those present in the room, and those portrayed in images, videos and case studies, is essential for learning.

EVOLUTION:

The Theory of Evolution provides the central explanatory framework in biology, and will be an important theme running throughout the Parasitology course. I welcome the opportunity to discuss any questions or concerns you may have about evolution, including those related to religious belief.

DIVERSE VIEWPOINTS:

Our class will encompass a wide variety of viewpoints, and people will not always agree. Some class activities will require you to consider perspectives you may find unappealing. In the words of the late Supreme Court Justice Ruth Bader Ginsberg, you can disagree without being disagreeable. Most importantly, to quote a former senator of this state, Daniel Patrick Moynihan, you are entitled to your own opinion, but you are not entitled to your own facts. Finally, in science, no claim is immune to challenge, no matter how much you may wish for it to be true.

ANTI-RACISM

This course has significant anti-racist content. Of the six crises in global health that we will be studying, four involve countries with a significant history of structural racism that contributed to both the origin and magnitude of the crisis. Preventing and responding to future crises will require a scientific community committed to equity and justice.

This course also contains anti-racist pedagogy. We will look at the intersection of human rights and science and medicine in multiple ways throughout the semester. A particular area of focus will be ethical research on human subjects, especially where there are asymmetries of wealth and power as well as cultural differences.

BIOLOGY LEARNING OUTCOMES:

STUDENTS WHO ARE ACTIVE PARTICIPANTS AND COMPLETE ALL COURSE REQUIREMENTS WILL BE ABLE TO:

1. **Critical Thinking and Problem Solving:** Students will have the knowledge base and intellectual (conceptual) framework to use reasoning and problem-solving skills to: (1) read critically; (2) evaluate support for competing hypotheses; and (3) critique experimental design.
2. **Laboratory Inquiry and Technique:** Students will have the laboratory and inquiry skills and technical ability to formulate hypotheses, design and run experiments using instruments to test their hypotheses, and analyze and interpret the results. They will be able to build on earlier work to design further experiments.
3. **Communication:** Students will be able to communicate biological ideas from literature or their own laboratory investigations to audiences of biologists and non-biologists in a variety of formats including written reports, poster and oral presentations.
4. **Attitudes and Personal and Professional Development:** Students will recognize the importance of scientific integrity and ethical research and applications of biology to science policy. They will be able to work independently and in teams for life-long learning.
5. Students will be able to demonstrate a broad and diverse background in biology and related sciences and a strong foundation for graduate and professional programs of study or employment.
6. Students will recognize evolution as the central tenet of biology which explains the unity and diversity of life and interrelatedness of levels of biological organization.

All of the Biology learning outcomes are addressed in this course to varying degrees, but those emphasized in this course are critical thinking and problem solving, attitudes and personal and professional development, and diverse biological content.

RELEVANT GLOBE LEARNING OUTCOMES:

STUDENTS WHO ARE ACTIVE PARTICIPANTS AND COMPLETE ALL COURSE REQUIREMENTS WILL BE ABLE TO:

1. Students in this course will demonstrate critical thinking through an understanding of research design, and through a close and critical reading of primary literature for the solutions assignment.
2. Likewise, close reading of data and drawing conclusions on the basis of quantitative evidence is found throughout, and partially meets the quantitative, computational and symbolic reasoning learning outcome.
3. The collaborative projects require demonstration of effective communication about complex scientific ideas as well as information literacy, particularly as related to locating and evaluating information online.
4. Through these collaborative projects and through studying ethical collaboration, students obtain skills relevant to the leadership and collaboration learning outcome.
5. A major focus of the course is addressing diversity and pluralism by recognizing and understanding different beliefs, backgrounds, and life choices, and their relationship to health.
6. Students also demonstrate global awareness and engagement throughout the course, including exploration of the importance of historical contexts and power relations in science, and applying global perspectives in addressing global health challenges.