

Plants, Plagues, and People

I. Course Information

Course term: Fall 2023

Meeting Day/Time: Tuesday (3:00 PM – 3:50 PM) & Thursday (3:00 PM – 4:55 PM)

Location: FIF2318

General Education Designation: Biological Sciences & History

A minimum grade of C is required to earn general education credit. More information on grades and grading policies can be found here:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Instructor

Samuel Martins – sj.martins@ufl.edu

Office: 2413 Fifield Hall

Office hours: Friday, 3:00 – 5:00 PM. Emailing for an appointment will ensure that there will be no waiting time.

Phone: (352) 273-4649

Teaching Assistant (TA)

Josie Pasche: jpasche@ufl.edu

Office hours: by appointment

This syllabus is subject to change by the instructor if needed.

Course Description

Plants, Plagues, and People is a biohistory course. Within biology we discuss the origin of life and life diversity and its interactions. We will address how life has evolved and why things are the way they are. Students will be able to reflect upon the environmental factors and life interactions that have been influencing life on Earth since its beginning and how those interactions influence and constrain human activities. Course themes include geologic times, origin of life, first forms of life on Earth, environmental pressures and resource limitations, diseases, and the roles that these factors have played in human civilization up to modern times.

Required & Recommended Course Materials (to purchase/rent)

There is no required text. Selected readings will be distributed in class. Recommended readings are provided in this syllabus within the weekly course schedule section.

II. Coursework & Schedule

There will be 12 quizzes, 2 tests, and a student presentation (in groups).

1. List of Graded Work

Assignment	Description	Points
Quiz Scores (SLOs 1-8)	12 quizzes at 3 points each (n=36)*	30
Test 1 (SLOs 1-3; 7-8)		25
Test 2 (SLOs 4-8)		25
Student presentations (in groups) (SLO 7)		20
Total points		100

A satisfactory grade will be earned with the equivalent of a “C-” grade or better (70-100 points).

*There will be 2 extra quizzes, but the maximum grade for the quizzes you can earn is 30.

Quizzes: All quizzes will be done on Thursdays (3 to 6 questions each quiz) and each week students will alternate between responding to the instructor/TA questions and creating and answering their own questions (3 to 6 questions selected by the instructor/TA). For quiz 1 the instructor/TA will provide the questions, quiz 2 students will create the questions, quiz 3 the instructor will provide the questions, quiz 4 students will create the questions, and so forth. For the student-created quizzes, students will use the Google Doc to create the questions, and the link will be provided right before our first student quiz.

Each student will create:

- 1 question based on the Tuesday class
- 1 question based on the Thursday class

Then, the instructor/TA will select 3 to 6 questions for the student quiz. We will go over all the quiz questions together immediately after the quiz. The TA will grade the quizzes later and add the grades to Canvas. We will have 12 quizzes throughout the course, and the 2 quizzes with the lowest grades will be dropped. If you miss up to two quizzes, for example, it will not affect your quiz grades, as you only need 10. However, your chances for a stellar grade improve with each quiz and you are more likely to receive a better grade if you complete all 12 quizzes. Therefore, plan to participate in class as much as you can.

Desirable Questions for the Quizzes

- The point is not to create memorization questions. Try to be creative.
- You can't create two questions about the same specific topic.
- You cannot create true or false questions, unless you make a false statement and ask why it is wrong and how to correct it.
- If a question is multiple choice, it has to have at least four options.
- Questions that correlate daily life with the topic taught in class are highly encouraged.

Tests: About 50% of the questions you and your classmates create will be used in the midterm and final exam. Students will first take the test individually (worth 70% of the total points in the test). Then individual tests will be collected, and a new sheet with the same questions will be distributed to each student. This time they will be asked to answer to the same questions in groups, and this test score will be worth 30% of the total test grade. This part will be distributed for the last 30 minutes of class or right after all the last students finish the first part.

Student presentations: During the second half of the course (history component), students will present in groups about the following Civilizations/Empires: Sumerian, Indus Valley, Egypt, Asian, American, Roman, Persian, Greek. Students should use the Google doc linked in the CANVAS assignment to choose their topics.

A week before their presentations students should submit the written part (500 to 900 words) in the form of an essay covering the same topics of the presentation. Only one student from each group needs to submit the assignment on behalf of the group.

Below the points to cover in your Civilization/Empires assignment for the second half of the course. You are welcome to include any details and interesting facts that you find about your society/civilization, but make sure to include the points below as well:

- An initial slide with the title of your presentation and the name(s) of those in your group.

- Rise and fall period (when did the civilization start and decline?)
- Location (add a map to help all of us to know the place)
- Agricultural package (what types of crops did they use to grow and animals did they raise?)
- Did they have any important river to support their agriculture? If so, add information about the river
- What types of tools did they use in their agriculture? E.g. did they have an irrigation system? Use a plow? Practice polyculture or monoculture? And so forth.
- How was their society organized? E.g. what classes did they have? What was their bureaucracy like?
- Any major/important city/cities? If so, how big were they? What is the name of the city? What did it look like? Did they have any sanitation system?
- Any major advances from this society?
- Did they have a writing system? If so, what was it like?
- Did they have any legal system? If so, give some examples.
- Any mathematic system and units of time? If so, what was it composed of?
- What was their metallurgy base?
- Examples of art and culture.
- What were the causes (or possible causes) of the decline of this society?
- Add a final slide with a summary.

Images in your presentation are encouraged.

This presentation is worth 10 points and the written part is worth 10 points (total 20 points). **All members of the group are expected to help with the written part as well as present some part during the presentation.**

For any assignment, if you submit it late, your score will be reduced by 0.5 points per day. For example, if you submit your assignment that is worth 10 points 2 days after the deadline, your submission will earn a maximum of 9 points. **Therefore, plan to submit your assignment early. No excused can be made in case of technical/internet problems.** For the citations, you can use any style as long as it is used correctly.

The below rubric will be followed to assess the group assignment:

- *Written part:*
 - Were all subtopics present? Yes=100%; missing some=80%; less than half=50%
 - Does the written part have between 500 and 900 words? Yes=100%; no=80%; double=50%
 - Is the text properly cited? Yes=100%; no=70%
- *Presentation part:*
 - Were all subtopics present? Yes=100%; missing some=80%; less than half=50%
 - Did everyone in the group present? Yes=100%; no=70%; just one person=50%

- *Students are expected to upload their presentation a day before the presentation class using the Google drive in the CANVAS assignment.

Extra Credit: There are 6 extra credit points built into the course (6%) distributed in 2 extra quizzes. These extra quiz points allow you the flexibility to “make up” missed quiz or test points by doing the two additional quizzes. **There will, however, be no “individual” extra credit opportunities offered; the only extra credit offered will be from assignments available to the entire class.**

2. Weekly Course Schedule

Week/ Date	Activity	Topic/Assignment (Question/Subject)
<u>Week 1</u>	Topic	<p>Introductions & Course Overview</p> <p>Geologic time and the Human Speck</p> <p>Organic molecules: life's building blocks</p>
	Elective Online Readings	<ul style="list-style-type: none"> • University of California Museum of Paleontology (1997). Plate Tectonics: The Rocky History of an Idea (1 page) • University of California Museum of Paleontology (1997). Plate Tectonics: The Mechanism (1 page) • Utah Geological Survey (Milligan, 2011). How do Geologists Know How Old a Rock Is? (1 page)
<u>Week 2</u>	Topic	<p>Origins of life</p> <p>Reading DNA, Writing Proteins</p> <p>Mistakes in the code (Good news? Bad news? Who knows?)</p> <p>Mutations and Populations</p>
	Elective Online Readings	<p>Video: How Life Began (11 min)</p> <p>Life On Earth (8 page)</p> <p>Genetic Code (3 page)</p> <p>Reading the Genetic Code (1 page)</p> <p>Lactose Tolerance (1 page)</p> <p>Genes Involved In Tomato Color And Flavor (3 page)</p> <p>Video: Natural Selection (7 min)</p>
<u>Week 3</u>	Topic	<p>Prokaryotes: Base model and optional features</p> <p>Eukaryotes: cells get organized & the invention of sex</p>
	Elective Online Readings	<p>Endosymbiotic Hypothesis (1 page)</p> <p>Eukaryotic Cells (4 page)</p> <p>Chromosomal Abnormalities: Aneuploidies (2 page)</p>
<u>Week 4</u>	Topic	<p>Energy production and transfer: making and breaking bonds</p> <p>Energy storage and use: food chains to fossil fuels</p> <p>Sea of Life: Cells get together and make critters</p>

Week/ Date	Activity	Topic/Assignment (Question/Subject)
		Sea of Life: Diversity of Life
	Elective Online Readings	Overview of Metabolism (4 page) Food Chains & Food Webs (6 page) How CO2 Moves Among Different Carbon Pools (1 page) Volvox, Chlamydomonas, and the Evolution of Multicellularity (4 page) Homeotic Genes (6 page) Expanded Gallery Of Animal Phyla (14 page)
<u>Week 5</u>	Topic	Land Invasion, I: Plants Land Invasion, II: Fungi and Stramenopiles
	Elective Online Readings	Evolution of Plants (3 page) World of Fungi (2 page) Florida Museum Article (2 page)
<u>Week 6</u>	Topic	Land Invasion, III: Animals, the Arthropods Land Invasion, IV: The Cheaters, part 1 (protozoans and flatworms) Land Invasion, V: The Cheaters, part 2 (roundworms of plants & people)
	Elective Online Readings	African Sleeping Sickness (Trypanosomiasis) (1 page) Chagas Disease (1 page) Chagas Disease More Prevalent in US Than Thought (2 page) Leishmaniasis (1 page) Malaria (1 page) Schistosomiasis (1 page) Liver Flukes (1 page) Tapeworms (1 page) Documentary: NOVA Wonders What's Living in You? (54 min)
<u>Week 7</u>	Topic	I'm an Amniote, and I'm ok Mammals: from belly buttons to nipples Primate Primer From Primates to People (Lucy's got a big ol' butt)
	Elective Online Readings	Introduction to the Amniotes (1 page) How The Earliest Mammals Thrived Alongside Dinosaurs (7 page)

Week/ Date	Activity	Topic/Assignment (Question/Subject)
<u>Week 8</u>	Topic Test 1	Mechanisms of speciation and extinction Test 1 (Oct 19 th)
	Elective Online Readings	No Readings For This Week
<u>Week 9</u>	Topic Student's presentations	Hunting and Gathering to the Advent of Agriculture Early Agriculture and Domestications Human Populations: Carrying Capacities and Malthusian Limits The Rise (and fall and rise and fall ...) of Civilization: Sumerian The Rise (and fall and rise and fall ...) of Civilization: Harrapan The Rise (and fall and rise and fall ...) of Civilization: Egyptian
	Elective Online Readings	Reading(s) are available on Canvas
<u>Week 10</u>	Topic Student's presentations	Meanwhile, on other parts of the planet... Asia Peopling and Civilizations of the Americas Back in the Fertile Crescent: from States to Empires Greeks and Science
	Elective Online Readings	<u>The Tangled Roots of Agriculture (3 page)</u> <u>Exponential and Logistic Growth</u> <u>Population Dynamics Lesson (4 page)</u> <u>The World's First Big City (5 page)</u> <u>Five Things I Learned About Sumerian Beer (3 page)</u> <u>The Fall of the Egyptian Old Kingdom (4 page)</u> <u>Statue of Ramesses II (1 page)</u>
<u>Week 11</u>	Topic Student's presentations	Roman Rise, and Roman Science The Decline and Fall of Rome: Logistics & Disease Civilization and Human Diseases Density-dependent Diseases: 8 diseases that love a crowd Civilization and Plant Diseases: Infecting your food

Week/ Date	Activity	Topic/Assignment (Question/Subject)
	Elective Online Readings	<u>Account of the Murder of Hypatia (1 page)</u> <u>Measles May Have Emerged When Large Cities Rose, 1500 Years Earlier Than Thought (2 page)</u> <u>From Poisoning to Pharmacy: a Tale of Two Ergots (4 page)</u> <u>Phytophthora infestans (4 page)</u> <u>Clues and Evidence (1 page)</u>
<u>Week 12</u>	Topic	The Middle Ages: Shifting Climates, Shifting People Black Death
	Elective Online Readings	<u>The Black Death May Have Transformed Medieval Societies In Sub-Saharan Africa (2 page)</u>
<u>Week 13</u>	Topic	The Columbian Exchange I: Race for Resources The Columbian Exchange II: The Unintended Exchanges Fuel for a Renaissance: Imperialism & Slavery Renaissance Culture & Science
	Elective Online Readings	<u>The “Muslim Curtain” (1 page)</u> <u>William Bradford, 1633, describes the effects of smallpox on the Native Americans (1 page)</u> <u>Olive Tree (11 page)</u>
<u>Week 14</u>	Topic	Industrial Revolution I: Power and Invention Industrial Revolution II: Biology and Medicine Industrial Revolution II: Culture and Consequences Global Economics and Resource Conflicts in the Modern Era Green Revolution
	Elective Online Readings	<u>The Day We Discovered The Cause Of The ‘White Death</u> <u>Potato Bright And Irish Famine (2 page)</u> <u>Louis Pasteur: Scientist, Beer Brewer, Zit-Popper (2 page)</u> <u>Friederich Engels, excerpts from "The Condition of the Working-Class in England in 1844" (1 page)</u> <u>Frogs: The Thin Green Line (1 page)</u>
<u>Week 15</u>	Topic	Tying it All Together

Week/ Date	Activity	Topic/Assignment (Question/Subject)
Tuesday (Dec 5 th) Tuesday (Dec 12 th)		Kahoot Test 2
	Elective Online Readings	No Readings For This Week
<u>Week 16</u>		

III. Grading

3. Statement on Attendance and Participation

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

Disability Accommodations: are made as soon as possible upon receipt of an accommodation letter from the Disability Resource Center <https://disability.ufl.edu/students/get-started/>. If you are submitting a letter, it is your responsibility to communicate which specific accommodations you will need in order to fully participate in the course. We are more than happy to provide accommodations so that every student can get the most out of this course, but we rely on you to communicate your needs in a timely manner so that we may meet them fairly and appropriately. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Academic Integrity standards will be upheld vigilantly at all times in this class. Upon registering at the University of Florida, you signed the following statement: "I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University." On all work submitted for credit by students 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." You will be expected to keep these commitments in every aspect of your participation in this class.

4. Grading Scale

For information on how UF assigns grade points, visit:

<https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

Letter Grade	Percentage	Points
A	92-100	92-100
A-	90-91.99	90-91.99
B+	88-89.99	88-89.99
B	82-87.99	82-87.99
B-	80-81.99	80-81.99
C+	78-79.99	78-79.99
C	72-77.99	72-77.99
C-	70-71.99	70-71.99

D+	68-69.99	68-69.99
D	62-67.99	62-67.99
D-	60-61.99	60-61.99
E	0-57.99	0-57.99

IV. Learning Experiences

5. This Course's Student Learning Outcomes (SLOs)

By the end of this course, you should be able to:

1. Explain how life appeared on the planet and what environmental conditions were necessary for its appearance;
2. describe the progression of life forms on Earth and explain how environmental pressures affect populations of living organisms;
3. explain the value of plants to human beings and describe the impacts that the development of agriculture and the use of fossil fuels have had on human populations and societies;
4. discuss the effects of biological resource limitations on major historical events and cultural trends;
5. distinguish between density-independent and crowd diseases, and describe how various diseases have affected humans and their civilizations;
6. give examples of human activities that have led to increases in human, animal, and plant diseases;
7. communicate and collaborate to solve problems in groups.
8. Identify key points from the course content by creating quiz questions

Biological Sciences

Biological science courses provide instruction in the basic concepts, theories and terms of the scientific method in the context of the life sciences. Courses focus on major scientific developments and their impacts on society, science and the environment, and the relevant processes that govern biological systems. Students will formulate empirically-testable hypotheses derived from the study of living things, apply logical reasoning skills through scientific criticism and argument, and apply techniques of discovery and critical thinking to evaluate outcomes of experiments.

Humanities

Humanities courses provide instruction in the history, key themes, principles, terminology, and theory or methodologies used within a humanities discipline or the humanities in general. Students will learn to identify and to analyze the key elements, biases and influences that shape thought. These courses emphasize clear and effective analysis and approach issues and problems from multiple perspectives.

V. Required Policies

6. Attendance Policy

This class is 100% in-person; therefore, students are expected to be physically present in the classroom. For most of the classes, we will have collaborative work and active learning activities, where students will be graded for participating in groups. For that reason, students are encouraged to only miss class if they have a justifiable reason (if they get sick, accident, etc).

7. UF Evaluations Process

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.bluer.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

8. University Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code.” On all work submitted for credit by students 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.” The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

9. Counseling and Wellness Center

UF Counseling Services provides resources on campus for students having difficulties which may interfere with their academic performance. Programs are available for general therapy, stress management, anger management, math confidence, career counseling, LGBTQ support, and many other specific needs. Resources available to you include:

- 1) University Counseling Center**, 301 Peabody Hall, 392-1575
- 2) Student Mental Health Center**, 392-1171
- 3) Sexual Assault Recovery Services (SARS), Student Health Care Center**, 392-1161
- 4) Career Resource Center**, Reitz Union, 392-1601

10. The Writing Studio

The writing studio is committed to helping University of Florida students meet their academic and professional goals by becoming better writers. Visit the writing studio online at <http://writing.ufl.edu/writing-studio/> or in 2215 Turlington Hall for one-on-one consultations and workshops.

11. Software Use and Copyright

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.

12. Recording Policy

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted

by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

VI. Contacting the Instructor

13. Individual Questions, Problems, or Appointments

Please use the email function in Canvas to communicate with the instructor and TA during the semester, rather than regular university email, except in extreme emergencies. Email delivered on weekdays (M-F) will generally receive a reply within two business days. Messages may not be checked between 5:00 pm Friday and 8:00 am Monday; messages received over the weekend will generally receive a response on Monday. If I plan to be out of the office or otherwise unavailable, I will post an announcement on Canvas.

14. Canvas Technology Requirements & Technical Support

Computers, Internet, and Web browsers: Canvas runs on Windows, Mac, Linux, iOS, Android, or any other device with a modern web browser. It is recommended to use a computer less than five years old with at least 1GB of RAM. It is recommended to have a minimum Internet speed of 512kbps.

Canvas currently supports the following browsers: Chrome, Safari, Firefox, Edge. Canvas supports the last two versions of most browsers. It is highly recommend updating to the newest version of whatever browser you are using. Note that your computer's operating system may affect browser function. Failure to use one of these browsers will cause problems.

For more information on approved computers and browsers please visit: <https://community.canvaslms.com/t5/Canvas-Basics-Guide/What-are-the-browser-and-computer-requirements-for-Canvas/ta-p/66> On this web page there is an area titled "Is My Browser up to Date?" Use it to check each computer and browser you may use in this course. There is another important area on "Browser Privacy Settings." Read the section(s) for any browser intended for use. For example, Note that: In browsers such as Safari, insecure content will never be displayed in the browser. Return to the page to check for updates on technology issues in Canvas.

If you encounter technical difficulties in this course, contact the UF Computing Help Desk right away to troubleshoot. <https://helpdesk.ufl.edu/> or (352) 392-HELP. If the problem cannot be fixed immediately, notify your instructor, and provide them with the Help Desk ticket number and a description of the problem and steps taken to resolve it.