Plants, Plagues, and People

I. Course Information

Course term: Spring 2026
Meeting Day/Time: Tuesday (3:00 PM – 3:50 PM) & Thursday (3:00 PM – 4:55 PM)
Location: BLRB 154
General Education Designation: Biological Sciences

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

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 **11 quizzes**, **3 exams**, a **group assignment**, a graded **Kahoot (last one)**, and an **individual self-reflection**.

1. List of Graded Work

Assignment	Description	Points
Quiz Scores	11 quizzes at 1.5 points each (n=16.5)*	13.5
Exam 1	Part individually and part in groups	20
Exam 2	Part individually and part in groups	22
Exam 3	Part individually and part in groups	24
Group assignment	In groups	12
Debate and self-reflection	Individually	6
Kahoot**	Individually (last Kahoot only)	2.5
Total points*		**100**

*The two lowest quiz grades will be dropped, therefore, the maximum grade for the quizzes you can earn is 13.5.

Only the last Kahoot will be graded based on participation. The student needs to be present in class to receive the points. If you miss a quiz, this quiz will be automatically dropped (grade = 0). If you miss *3 quizzes, all with justified reasons*, you are welcome to contact the instructor and TA for a make-up quiz. ***This is the only circumstance under which a make-up quiz will be given.*

A satisfactory grade will be earned with the equivalent of a "C-" grade or better (70-100 points). ***There will be no extra points, assignments, or rounding up for final grades. An exception is when the final grade difference to reach a whole number is ≤ 0.05%. Eg. 90.95% will be rounded up to 91. However, 90.94% will remain 90.94%.

Important note: 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 excuse can be made in case of technical/internet problems**. For the citations, you can use any style as long as it is used correctly.

2. Dates for All Assignments and Homework

Due date	Assignment*	Format	Length	Submission	Points (%)
Jan 15th	Quiz 1 (Syllabus - questions provided by the instructor)	Individual	~15 min	In-class	1.5
Jan 22nd	Quiz 2 (questions created by the students)	Individual	~15 min	In-class	1.5
Jan 29th	Quiz 3 (questions provided by the instructor)	Individual	~15 min	In-class	1.5
Jan 29th	**Homework 1**: Decide on Civilization/Empires groups (groups of 3 studetns)	Individual	5 min	No submission needed	N/A
Feb 3rd	Kahoot	Individual	15 min	In-class	N/A
Feb 5th	Exam 1	2-stages	2 h	In-class	20
Jan 29th to Feb 12th	**Homework 2**: First Group Meeting for the Civilization/Empires Assignment	In groups	Group's Discretion	No submission needed	N/A
Feb 12th	Quiz 4 (questions created by the students)	Individual	~15 min	In-class	1.5
Feb 19th	Quiz 5 (questions provided by the instructor)	Individual	~15 min	In-class	1.5
Feb 26th	Quiz 6 (questions created by the students)	Individual	~15 min	In-class	1.5
Mar 3rd	Civilization/Empires group assignment (written part)	In groups	500 to 900 words	Canvas	6
Mar 5th	Quiz 7 (questions provided by the instructor)	Individual	~15 min	In-class	1.5
Mar 5th	Debate	Individual	15- 30 min	In-class	2
Mar 10th	Kahoot	Individual	15 min	In-class	N/A
Mar 12th	Exam 2	2-stages	2 h	In-class	22
Week 11	Civilization/Empires group assignment (presentation part)	In groups	~15 min	In-class	6
Mar 26th	Quiz 8 (questions created by the students)	Individual	~15 min	In-class	1.5
April 2nd	Quiz 9 (questions provided by the instructor)	Individual	~15 min	In-class	1.5
April 9th	Quiz 10 (questions created by the students)	Individual	~15 min	In-class	1.5
April 16th	Quiz 11 (questions provided by the instructor)	Individual	~15 min	In-class	1.5
April 9th	Self-reflection on the debate topic	Individual	500 to 900 words	Canvas	4
April 21st	Kahoot	Individual	15 min	In-class	2.5
April 30th	Exam 3	2-stages	2 h	12:30 - 2:30pm	24

*Read the syllabus for questions regarding any assignemnt

Quizzes: All quizzes will happen 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, and so forth. For the student-created quizzes, students will use a Google Doc to record their questions and students are encouraged to bring a laptop, tablet, or smartphone to class every other Thursday when they are supposed to write the quiz questions in the Google Docs. If you don't have a laptop/ tablet or smartphone, that's fine too. Just communicate with me and we will find a solution.

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 quizzes will be graded and grades added to Canvas. In total, we will have 11 quizzes throughout the course, and the 2 quizzes with the lowest grades will be dropped. If you miss up to 2 quizzes it will not affect your quiz grades, *as you only need 9*.

If you miss *3 quizzes, all with justified reasons*, you are welcome to contact the instructor and TA for a make-up quiz. This is the only circumstance under which a make-up quiz will be given.

The goal of a desirable question for the quizzes:

- **Promote critical thinking**: requires you to analyze information and make connections.
- **Requires application**: use a concept to solve a problem or explain a scenario.
- **Connects to the real world**: grounds abstract concepts in tangible, relatable examples.

- **Encourages deeper understanding**: Moves beyond "what" to focus on "why" and "how.''

Additionally:

- *If a question is multiple choice, it has to have at least four options.*
- *You can't create two questions about the same specific topic.*
- *True or false questions are only allowed if you make a false statement and ask why it is wrong and how to correct it.*

Exams: The exam questions will be 1/3 compiled from the questions the students create for the quizzes, and the remaining 2/3 will be new questions created by the instructor. Students will complete an individual copy of the exam questions alone first, which will account for 70% of their exam grade. Then, students will work together in small groups (3 people) to answer the same exam questions – each group will submit one set of answers that they will collaborate and agree on, and everyone in each group will receive the same score, which accounts for 30% of the exam grade.

During the second stage of the 2-stage exams students are required to take turns physically writing the answers. Everyone is expected to practice active listening and respect their peers' points of view in interpreting the question and results. Before starting the second stage of the exam, students should discuss how they will proceed in case of a disagreement on an answer. For example, one solution could be that the majority's opinion will be the final answer and in case of an even disagreement (eg. two members believe the correct answer is A and 2 other students think that the correct answer is B), the student who is holding the paper and pen/pencil will decide on the final response.
For the exam, you are welcome to bring a paperback or hardcover book (not related to the class subject and not textbooks) to read between stages 1 (individual part) and 2 (collaborative part) of the exam.

Self-Reflection

Organic vs. Conventional Farming

After our class debate on organic and conventional farming, you will write a self-reflection essay (minimum 500 words, maximum 900 words). This assignment is not about having a "right" or "wrong" perspective. Instead, your grade will be based on the quality of your justifications and the points you present. You should not feel pressured to take a specific stance.

Please submit your assignment individually via Canvas.

Your self-reflection should cover at least the following points:

- Which side of the debate do you lean toward? (e.g., are you pro-organic or pro-conventional farming?)
- What is the primary reason for your perspective?
- Provide a real-world example that supports your viewpoint on this issue.
- Present at least two additional reasons for your perspective, supported by examples.
- What are the potential short-term and long-term consequences of adopting your chosen side? Consider the implications for both sides of the issue. For instance, if you support organic farming, discuss the consequences of a world without it and vice-versa.

For citations, you may use any style, as long as you use it consistently and correctly.

Group Assignment: During the third portion 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.

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 are 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:

- Contribution of each member of the group for the written part.*
- 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 highly recommended.

* All members of the group are expected to help with the written part as well as present some part during the presentation. To unsure fair grading please include a short paragraph at the top of your assignment describing how each group member contributed to the final product. **Example:**

- **Mary Jones:** Conducted research on the civilization (intro section), wrote 30% of the assignment (sections 1-3).

- **John Smith:** Wrote 20% of the assignment (section 4), double checked the references, and submitted the final document.

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.

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 5 points 2 days after the deadline, your submission will earn a maximum of 4 points. **Therefore, plan to submit your assignment early. No excuse can be made in case of technical/internet problems**. *For the citations, you can use any style as long as it is used correctly*.

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. Therefore, absences should be reserved for justifiable reasons, such as illness or personal emergencies.

3. Weekly Course Schedule

Week/ Date	Activity	Topic/Assignment (Question/Subject)
Week 1	Topic	Introductions & Course Overview Geologic time and the Human Speck Organic molecules: life's building blocks
	Elective Online Readings	• 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)
Week 2	Topic	Origins of life Reading DNA, Writing Proteins Mistakes in the code (Good news? Bad news? Who knows?) Mutations and Populations
	Elective Online Readings	Video: How Life Began (11 min) Life On Earth (8 page) Genetic Code (3 page) Reading the Genetic Code (1 page) Lactose Tolerance (1 page) Genes Involved In Tomato Color And Flavor (3 page) Video: Natural Selection (7 min)
Week 3	Topic	Prokaryotes: Base model and optional features Eukaryotes: cells get organized & the invention of sex
	Elective Online Readings	Endosymbiotic Hypothesis (1 page) Eukaryotic Cells (4 page) Chromosomal Abnormalities: Aneuploidies (2 page)
Week 4	Topic	Energy production and transfer: making and breaking bonds Energy storage and use: food chains to fossil fuels Sea of Life: Cells get together and make critters

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)
Week 5	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)
Week 6	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)
Week 7	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)
Week 8	Topic	Mechanisms of speciation and extinction
	Elective Online Readings	No Readings For This Week
Week 9	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
Week 10	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	The Tangled Roots of Agriculture (3 page) Exponential and Logistic Growth Population Dynamics Lesson (4 page) The World's First Big City (5 page) Five Things I Learned About Sumerian Beer (3 page) The Fall of the Egyptian Old Kingdom (4 page) Statue of Ramesses II (1 page)
Week 11	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	Account of the Murder of Hypatia (1 page) Measles May Have Emerged When Large Cities Rose, 1500 Years Earlier Than Thought (2 page) From Poisoning to Pharmacy: a Tale of Two Ergots (4 page) *Phytophthora infestans* (4 page) Clues and Evidence (1 page)
Week 12	Topic	The Middle Ages: Shifting Climates, Shifting People Black Death
	Elective Online Readings	The Black Death May Have Transformed Medieval Societies In Sub-Saharan Africa (2 page)
Week 13	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	The "Muslim Curtain" (1 page) William Bradford, 1633, describes the effects of smallpox on the Native Americans (1 page) Olive Tree (11 page)
Week 14	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	The Day We Discovered The Cause Of The 'White Death Potato Bright And Irish Famine (2 page) Louis Pasteur: Scientist, Beer Brewer, Zit-Popper (2 page) Friederich Engels, excerpts from "The Condition of the Working-Class in England in 1844" (1 page) Frogs: The Thin Green Line (1 page)

Week/ Date	Activity	Topic/Assignment (Question/Subject)
	Elective Online Readings	No Readings For This Week
Week 16		

III. Grading

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

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.

V. Academic Policies and Resources

Academic policies for this course are consistent with university policies. See https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/

Campus Health and Wellness Resources

Visit https://one.uf.edu/whole-gator/topics for resources that are designed to help you thrive physically, mentally, and emotionally at UF.
Please contact UMatterWeCare for additional and immediate support.

Software Use

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.

Privacy and Accessibility Policies

- Instructure (Canvas)
  - Instructure Privacy Policy
  - Instructure Accessibility
- Zoom
  - Zoom Privacy Policy
  - Zoom Accessibility