

Plants, Plagues, and People

I. Course Information

Course term: [Fall 2025](#)

Meeting Day/Time: [Tuesday \(10:40 AM – 11:30 AM\) & Thursday \(10:40 AM – 12:35 PM\)](#)

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 **10 quizzes**, **3 exams**, a Virtual Exchange (**VE**) **project** (part done in individually and part done in group), a **group assignment**, and an **individual self-reflection**.

1. List of Graded Work

Assignment	Description	Points
Quiz Scores	10 quizzes at 1.5 points each (n=15)*	12
Exam 1	Part individually and part in groups	20
Exam 2	Part individually and part in groups	20
Virtual Exchange	Part individually and part in groups	13
Group project (civilizations)	In groups	10
Debate and self-reflection	Individually	5
Exam 3	Part individually and part in groups	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 12.

2. Dates for All Assignments and Homework

Due date	Assignment*	Format	Length	Submission	Points (%)
Aug 26 to Sept 9	Homework 1: VE prep module I (What is VE?)	Individual	45 min	Canvas	N/A
Aug 28th	Quiz 1 (Syllabus - questions provided by the instructor)	Individual	~15 min	In-class	1.5
Aug 26 to Sept 9	Homework 2: VE prep module II (Cultural self-awareness)	Individual	1 h 15 min	Canvas	N/A
Sept 4th	Quiz 2 (questions created by the students)	Individual	~15 min	In-class	N/A
Aug 26 to Sept 9	Homework 3: VE prep module III (Cultural factors)	Individual	55 min	Canvas	N/A
Aug 26 to Sept 9	Homework 4: VE prep module IV (Timing)	Individual	1 h 15 min	Canvas	N/A
Sept 11th	VE Quiz	Individual	~15 min	In-class	5
Sept 11th	Quiz 3 (questions provided by the instructor)	Individual	~15 min	In-class	1.5
Sept 11th	Homework 5: Decide on Civilization/Empires groups (groups of 3 students)	Individual	5 min	No submission needed	N/A
Sept 16th	Kahoot	Individual	15 min	In-class	N/A
Sept 18th	Exam 1	2-stages	2 h	In-class	20
Sept 11 to Sept 25	Homework 6: First VE group meeting	In groups	Group's Discretion	No submission needed	N/A
Sept 11 to Sept 25	Homework 7: First Civilization/Empires group assignment meeting	In groups	Group's Discretion	No submission needed	N/A
Sept 11 to Sept 25	Homework 8: Asynchronous VE Icebreaker	Individual	30 to 1 h	Pallet	4
Sept 25th	Quiz 4 (questions created by the students)	Individual	~15 min	In-class	1.5
Oct 2nd	Quiz 5 (questions provided by the instructor)	Individual	~15 min	In-class	1.5
Sept 30 to Oct 7	Homework 9: Meeting with International students for the VE project	In groups	Group's Discretion	No submission needed	N/A
Sept 30 to Oct 7	Homework 10: Meeting with International students for the Civilization/Empires group assignment	In groups	Group's Discretion	No submission needed	N/A
Oct 9th	Quiz 6 (questions created by the students)	Individual	~15 min	In-class	1.5
Oct 9th	Civilization/Empires group assignment (written part)	In groups	500 to 900 words	Canvas	5
Oct 16th	Quiz 7 (questions provided by the instructor)	Individual	~15 min	In-class	1.5
Oct 16th	Debate	Individual	15- 30 min	In-class	2
Oct 21st	Kahoot	Individual	15 min	In-class	N/A
Oct 23rd	Exam 2	2-stages	2 h	In-class	20
Oct 30th	Quiz 8 (questions created by the students)	Individual	~15 min	In-class	1.5
Week 11	Civilization/Empires group assignment (presentation part)	In groups	~15 min	In-class	5
Nov 6th	Quiz 9 (questions provided by the instructor)	Individual	~15 min	In-class	1.5
Nov 13th	Quiz 10 (questions created by the students)	Individual	~15 min	In-class	1.5
Nov 20th	Self-reflection on the debate topic	Individual	500 to 900 words	Canvas	3
Dec 2nd	Kahoot	Individual	15 min	In-class	N/A
Dec 2nd	VE Reflection on ideal civilization	In groups	~15 min	In-class	4
Dec 11th	Exam 3	2-stages	2 h	In-class	20

*Read the syllabus for questions regarding any assignment

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, quiz 4 students will create the questions, and so forth. For the student-created quizzes, students will use a Google Doc to record their questions. 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 10 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 8*.

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.

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 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 highly recommended.

This presentation is worth 5 points and the written part is worth 5 points (total 10 points). **All members of the group are expected to help with the written part as well as present some part during the presentation.**

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.

Virtual Exchange (VE) with University of Valencia (Spain)

SLOs:

- Practice providing constructive feedback and communicating across cultures using verbal and nonverbal communication
- Demonstrate openness to cultural differences when interpreting historical information about chosen civilization/empire and conveying this information to peers from a different cultural background

- Identify elements of own culture that have or may have an impact on interactions with peers from a different cultural background

Assignment Summary:

To help you complete your analysis of an ancient civilization/empire and compare and contrast societal structures, technologies, and cultural values for the group presentation assignment, we will be connecting online with a class in Valencia, Spain, to exchange information and collaborate to inform a part of your presentation assignment. Your peers at the University of Valencia are researching a historical figure from a different society and culture than your civilization/empire. Your task will be to share with each other the information you have gathered on your respective civilizations/societies and compare their strengths and weaknesses to then outline a plan for a new and improved society, which will become part of your in-class group presentation. Below is a summary of the tasks and interactions we will complete as part of this international collaboration:

- I. Complete asynchronous tasks in Canvas to prepare for this international collaboration (Through these modules, you will learn about virtual exchange and its academic and professional benefits, as well as some cultural elements that you may encounter during this project.)
- II. Take an in-class quiz on what you learned from the Canvas assignments
- III. Participate in an asynchronous icebreaker activity with Valencia peers (using Padlet)
- IV. Research your civilization/empire and prepare to share the information you have found with your Valencia peers.
- V. Meet synchronously (on your own) with Valencia peers. During the meeting, you should take turns sharing with each other the information you have gathered on your respective civilizations/historical figures and then compare the strengths and weaknesses of these societies. As a group, outline a plan for a new and improved society, and be sure to take good notes so this information can be incorporated into your in-class group presentation on your civilization (between September 30th and October 7th)
- VI. Finalize presentation on your civilization/empire that includes the new and improved society plan that you came up with together with your peers in Valencia. Be sure to include evidence of your reasoning for the way the society would be constructed. For example, you might say “the historical figure did XXX really well, so like them, we would want our society to do XXX,” or “XXX did not work for the civilization or the historical figure, so we would have our society avoid that.”
 - a. What were the causes of decline in the civilization studied, and how do these compare to the challenges faced by the society of the historical figure? Are there common themes in societal collapse or transformation?
 - b. Based on the strengths of the civilization and the historical figure’s society, what core values would your new society prioritize (e.g., justice, innovation, equality, sustainability)?

- c. Which agricultural practices from the civilization would you adopt to ensure food security and environmental sustainability? Would you modify or combine them with practices from the historical figure's society?
 - d. Which technological or scientific advances from the civilization would be foundational to your society? How would you encourage innovation like the historical figure may have done?
 - e. What strategies would your society use to avoid the decline experienced by the civilization? How would you build resilience against environmental, political, or social challenges?
 - f. If your society faced a crisis, what leadership qualities from the historical figure would be most valuable in guiding it through?
- VII. Do a final reflection on the VE experience during class

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 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.

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. For that reason, students are encouraged to only miss class if they have a justifiable reason (if they get sick, accident, etc).

3. 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	Mechanisms of speciation and extinction
	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>

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

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](#)