

# IDS2935: WHAT ARE PLANTS TALKING ABOUT?

## Quest 2

### I. General Information

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#### Class Meetings



- Spring of each year
- T10:40 AM – 11:30 AM, R10:40 AM – 12:35 PM
- TBD

#### Instructor

- Samuel Martins – [sj.martins@ufl.edu](mailto:sj.martins@ufl.edu)
- Office: 2413 Fifield Hall; Box 110680
- 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

- Noah G. Benschler
- Office hours: by appointment ([noah.benschler@ufl.edu](mailto:noah.benschler@ufl.edu))

#### Course Description

Plants are essential for the survival of most life forms on Earth as they provide us oxygen, wood, food, fiber, medicine and other resources. In the movie *The Martian*, one of the first approaches that Matt Damon took on the new planet was to engineer a way to grow potatoes to survive on the hostile planet. We tend to think of plants as passive organisms, but plants have been inhabiting this planet for hundreds

of millions of years, way before us humans, and have developed sophisticated adaptation mechanisms to sense their environment and to cope with biotic and abiotic stresses. In the last decades surprising discoveries have been made in the plant science field, and there are still many more waiting to be made, as our society still faces challenges like hunger and malnutrition, desertification, soil erosion, pests and plant diseases. Moreover, emerging pathogens and pests are threatening our plants, killing trees and reducing crop yields. Are plants crying out for help and we can't hear? This and other intriguing and scientifically pressing questions will be addressed in this course through the lenses of how we can better understand plants and what we can do to mitigate the aforementioned issues, creating a better place to live and preserving our resources for future generations. This is a multi-disciplinary course within plant science and addresses topics about plant physiology, plant pathology, entomology, and microbiology.

### Quest and General Education Credit

- Quest 2
- Biological Sciences

*This course accomplishes the [Quest](#) and [General Education](#) objectives of the subject areas listed above. A minimum grade of C is required for Quest and General Education credit. Courses intended to satisfy Quest and General Education requirements cannot be taken S-U.*

### Required Readings and Works

[What a Plant Knows: A Field Guide to the Senses by Daniel Chamovitz \(2017\)](#). Additional readings will be distributed in class or added on the course site in Canvas.

Materials and Supplies Fees: n/a

## II. Graded Work

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### Description of Graded Work

**There will be 10 quizzes, 2 tests (two-stage style), 2 group assignments, 1 experiential learning assignment, 1 self-reflection and multiple participation opportunities.** The grading scale is built on a point-based system, with “extra credit” points built in.

#### Quizzes

Groups with 4 or 5 students will be formed, depending on the number of students. Ideally, we will have groups with 4 students each. Groups will work collaboratively on quizzes and assignments.

In your collaborative quiz groups, you will be responsible for selecting a question theme and creating:

- 1 question based on the Tuesday class
- 1 question based on the Thursday class
- Complete answers to both questions

Use the Google Doc to create the questions.

<https://drive.google.com/drive/u/1/folders/1JCar8NGrcejEC3g3wPOrpG90r2UPiFrG>

Even though the two questions can be related, they should not be rephrased to ask the same thing. Quiz 1 will be provided by the instructor and TA and offer a good example of the types of quality questions you should be creating with your group. Subsequent quizzes will include three questions

created by other groups. 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 13 quizzes throughout the course, and the two quizzes with the lowest grades will be dropped. If you miss up to three 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 13 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

The test questions will be 50% compiled from the questions the students create for the quizzes, and the remaining 50% 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 test grade. Then, students will work together in small groups (4-5 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.

### Experiential Learning

Searching for Signs of Plant Interactions: By the end of week 9, students are expected to be familiar with plant senses and some of the interactions (the good and bad ones) that plants have with the environment and other organisms.

Students will present their findings during class via PowerPoint and show the interaction that they identified (signs of plant responses or interactions with biotic and abiotic factors). Students will need to show a picture (*taken by the student*) of the plant and explain the plant's responses and/or interaction, location, and why the interaction is happening. My expectation for the assignment is that you would use materials from class, including the book *What a Plant Knows*, but if you would also like to include outside sources you are welcome to. For the citations, you can use any style as long as it is used correctly.

This is an individual assignment and is worth a total of 10 points. The presentation will be during class and students will need upload their presentation to the class Google Drive folder (<https://drive.google.com/drive/u/1/folders/1JCar8NGrcejEC3g3wPOrpG90r2UPiFrG>). The top 5 best presentations will receive an additional participation point. Students will vote on the best presentations.

### Self-Reflection

#### Genetically modified food: Pros vs Cons

After debating in class about the use of biotechnological approaches to grow and manage plants, students will be asked to write a self-reflection essay about their point of view on the use of biotechnological approaches in agriculture (min 500 words; max 900 words). There is no right or wrong side. You won't be evaluated based on your point of view. The justifications and points you make will be assessed in the self-reflection. Students are supposed to submit the assignment individually via Canvas. The self-reflection should cover at least the following points:

- Are you pro or anti GMOs?
- What is the main reason that makes you pro or anti GMO?

- Give a real example that justifies your perspective on this issue.
- Present at least 2 more reasons that make you pro or anti GMO and give examples.
- What are the possible consequences in the short and long term with or without GMOs, depending on the side you defend? If you are pro GMO you will talk about the consequences without it and vice-versa.

## Group Assignments

### Group Assignment I: Plants Can Save the World!

A group of 3 to 4 students will identify a plant/tree or *agricultural innovation*\* that can be used to mitigate a problem that our society faces.

A few examples of problems that can be remediated by using plants are, but are not limited to:

- Plants used to control human or plant parasites (nematodes)
- Phytoremediation: the use of plants to remediate contaminated soils
- Plants that mitigate soil erosion
- Plants and human health (e.g. anxiety, Alzheimer, Parkinson's disease, etc.)
- Plants and air pollution mitigation
- Plant disease control with other plants
- Hidden hunger solved with plants
- Plants used to solve crimes
- The use of plants as biofuels (corn, sugarcane, other, if any)
- Plants used to store carbon dioxide and slow climate change
- *Urban agriculture*\*
- *Vertical farming*\*
- *Precision agriculture*\*
- *Synthetic microbial community used for plant health*\*
- Others

Students are welcome to identify other environmental, agricultural, human, etc. issues and select a specific plant or agriculture innovation to develop their work. Once the topic is identified, each group needs to send this information to the instructor/TA two weeks after the first day of class. A google doc was created (<https://drive.google.com/drive/u/1/folders/1JCar8NGrcejEC3g3wPOrpG90r2UPiFrG>), and each group is encouraged to take a look at the doc before choosing their plant (or agricultural innovation), to prevent topic overlap from happening, by January 24<sup>th</sup>.

Each group will have 8 to 12 minutes to present about their topic on February 23rd. Students will have the option between recording the presentation on YouTube to be presented in class or presenting live in class. The presentation can be in the format of music, a play, PowerPoint presentation, poster or combination of these. If a musical or theatrical form is chosen, the presenters are encouraged to provide a script of the song or play.

In addition to the presentation, a written report (min 500 words; max 900 words using Times New Roman 12 and 1" of margins) should be submitted via Canvas by February 16th. The following subtopics should be part of the written report and presentations:

- What is the problem that your group selected, and what impact does the problem have on our society?
- Are there methods used to mitigate the problem that you selected? If yes, is there any drawback about using these method(s)?

- Common name and scientific name of the plant that your group chose and/or agricultural innovation
- Origin and distribution of the plant or period when the agricultural innovation started to be utilized
- Ideal conditions to grow the plant or to use the agricultural innovation
- Include some special characteristics of the plant (e.g. it is used for decoration because of the beauty of the flower, the wood is highly valuable in the marketplace, etc.) or how the agricultural innovation was invented
- How can the plant or agricultural innovation mitigate the problem that you selected? If possible, explain the mechanism(s)
- How widely the plant or agricultural innovation is/can be used/applied?
- Is it economically viable to use the plant compared to other methods?
- What is your opinion about the use of the plant or agricultural innovation? Do you have an opinion on something that needs to be changed/improved?

**Students will need to upload their presentation to the Google Drive link**

**(<https://drive.google.com/drive/u/1/folders/1JCar8NGrcejEC3g3wPOrpG90r2UPiFrG>) before 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 10 points 2 days after the deadline, your submission will earn a maximum of 9 points.

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

- *Written part:*
  - Were all subtopics present? Yes=100%; missing some=80%; less than half=50%
  - Is the written part less than 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 the presentation fit within the time scheduled? Yes=100%; no=80%; double=50%
  - Did everyone in the group present? Yes=100%; no=70%; just one person=50%

### Group Assignment II: Jigsaw Activities

During some classes students will be divided in groups of 3 to 4 students and given a specific topic related to the lecture. The students in each group will work together to understand the topic thoroughly. Then the students from each group will be reconfigured into new groups that include one member of each of the original student groups. In these new groups, each student will explain their topic to the members of the new group. In the end, the objective is to give out the main points of the lecture as “jigsaw pieces” to the first student groupings, and to then rearrange students to complete the “puzzle” of material being covered, with the intention of a deeper understanding and engagement from the students. The Jigsaw activity is an efficient way to learn the course material in a cooperative learning style, and it encourages listening, engagement, and empathy by giving each member of the group an essential part to play in the academic activity.

## **Grading Scale**

For information on how UF assigns grade points, visit: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

A	94 – 100%		C	74 – 76%
A-	90 – 93%		C-	70 – 73%
B+	87 – 89%		D+	67 – 69%
B	84 – 86%		D	64 – 66%
B-	80 – 83%		D-	60 – 63%
C+	77 – 79%		E	<60

## Grading Rubric(s)

### List of Graded Work

Assignment	Description	Type	Date	Points
Quizzes	10 quizzes at 3 points each (total=30)*	In Group	On Thursdays	21
Test 1	Non-cumulative (first half)	2-stage	Feb. 2 <sup>nd</sup>	15
Group Assignment II	Plants Can Save the World! (written part)	In Group	Feb. 16 <sup>th</sup>	10
Group Assignment II	Plants Can Save the World! (presentation: 8-12 min)	In Group	Feb. 23 <sup>rd</sup>	10
Experiential Learning	Searching for Signs of Plant Interactions (presentation: 3 min)	Individual	March 30 <sup>th</sup>	10
Self-reflection	Genetically modified food: Pros vs Cons	Individual	April 20 <sup>th</sup>	10
Test 2	Non-cumulative (second half)	2-stage	Final Week	14
Participation	See Rubric for More Details	Individual	Tue/Thur	10
<b>**Total points</b>				<b>100</b>

\*The 3 lowest grades will be dropped

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

### Participation Rubric

Participation Activity	High Quality	Average	Needs Improvement
Provide class feedback on paper at the end of each class	Provide feedback at the end of each class on paper. You can miss 2. (=3 points)	Provide 70% of the total feedback (=2.5 points)	Provide less than 70% of the total feedback (=1 point)
Participating in Trivia (Kahoot)	Participating in 2 kahoots (=3 points)	Participating in 1 kahoot (=1.5 points)	Missing both kahoots (=0 points)
Jigsaw activity during class	Participating in all the Jigsaw activities, except 1 (=2 points)	Participating in 70% of the Jigsaw activities (=1.5 points)	Participating in less than 70% of the Jigsaw activities (=1 points)
Ask or Answer Questions, Make	Being at top 70% of the group (=2 points)	Being between 70% and 40% of the group	Being below 40% (= 1 points)

Comments, Other Activities		(=1.5 points)	
<b>Total points</b>	<b>10</b>	<b>6</b>	<b>3</b>

### III. Annotated Weekly Schedule

Week/ Date	Activity	Topic/Assignment (Question/Subject)
<b>MODULE I – Setting the Stage</b>		
Week 1 Jan 10 - 12	Topic	<ul style="list-style-type: none"> <li>• Introductions</li> <li>• Collaborative Learning Environment</li> <li>• Course Overview</li> <li>• Why Do Plants Matter? Are Plants Aware?</li> </ul>
	Summary	This first week you will get to know me (instructor and the TA) and your classmates and become familiar with the course structure. We will also discuss the importance of plants to our planet and learn how plants are acutely aware of the world around them.
	Readings/Works	Course Syllabus <a href="#">Why Humans Couldn't Exist Without Plants</a> (1 page) Epilogue: The Aware Plant (from page 157 to 163). Charmovitz D, 2017.
	Assignment	Think-Pair-Share
Week 2 Jan 17 - 19	Topic	<ul style="list-style-type: none"> <li>• What is the Scientific Method?</li> <li>• Organic Molecules</li> <li>• DNA &amp; Mutations: The Raw Material for New Features</li> </ul>
	Summary	This week we will begin to talk about the steps of the scientific method. We will also identify the types of organic molecules, their structural components and functions, which will help us to understand the signaling molecules that plants use to interact with their surroundings and communicate. We will talk about the impact of mutations on creating different types of cells, organisms, and populations, ranging for example from photosynthetic to carnivorous plants.
	Readings/Works	<a href="#">How are gene mutations involved in evolution?</a> (1 page) <a href="#">Plants turn caterpillars into cannibals</a> (2 pages) <a href="#">Science at FMNH - Early Land Plants</a> (5:35 min video)
	Assignment	Quiz 1 & Quiz 2; Online poll



Week/ Date	Activity	Topic/Assignment (Question/Subject)
Week 3 Jan 24 - 26	Topic	<ul style="list-style-type: none"> <li>• Scientific Method: Step 1: Research Step (Guest Lecture: Suzanne Stapleton)</li> <li>• The Plant Cell Structure</li> <li>• The Plant Structure</li> </ul>
	Summary	This week we will learn at Marston Library how to do a research search, gaining hands-on experience guided by a librarian. We will also explore the inside of a plant cell and understand the cell components and their functions as well as different plant structures, some of them used in plant communication.
	Readings/Works	<a href="#">Plant Cell Structure</a> (2 pages) <a href="#">Plants and Their Structures</a> (4 pages)
	Assignment	Quiz 3; Online poll
Week 4 Jan 31 – Feb 2	Topic	<ul style="list-style-type: none"> <li>• Plant Signaling Molecules</li> <li>• Kahoot &amp; Test 1</li> </ul>
	Summary	This week we will talk about the signaling molecules that plants use to interact with their surroundings and to communicate among themselves.
	Readings/Works	<a href="#">Plants Have Hormones, Too, and Tweaking Them Could Improve Food Supply</a> (3 pages)
	Assignment	Online poll
<b>MODULE II – Plant Senses</b>		
Week 5 Feb 7 - 9	Topic	<ul style="list-style-type: none"> <li>• Scientific Method: From Observation to Hypothesis</li> <li>• Do Plants See?</li> <li>• Do Plants Smell?</li> </ul>
	Summary	This week we will focus on explaining the first steps of the scientific method and will also start talking about plant senses. We will start with sight and smell and discuss ways that plants communicate with one another and with other organisms from different kingdoms.
	Readings/Works	What a Plant Sees (pages 9 to 26). Chapter 1, Charmovitz D, 2017. What a Plant Smells (pages 27 to 48). Chapter 2, Charmovitz D, 2017. <a href="#">Climate Change May Make Plants More Fragrant</a> (2 pages)

Week/ Date	Activity	Topic/Assignment (Question/Subject)
	Assignment	Quiz 4
Week 6 Feb 14 - 16	Topic	<ul style="list-style-type: none"> <li>• Scientific Method: Data Analysis</li> <li>• Do Plants Feel?</li> <li>• Do Plants Remember?</li> </ul>
	Summary	This week we will talk about data analysis for the scientific method part. We will also continue to talk about plant senses and will explain the ways that plants can remember by responding differently to the same event, including touch, that happened in the past.
	Readings/Works	<p>What a Plant Feels (pages 69 to 90). Chapter 3, Charmovitz D, 2017.</p> <p>What a Plant Remembers (pages 135 to 156). Chapter 6, Charmovitz D, 2017.</p> <p><a href="#">Plants Can Sense Animal Attacks Coming</a> (2:34 min audio)</p> <p><a href="#">Do Plants Think?</a> (3 pages)</p>
	Assignment	Quiz 5; Online poll
Week 7 Feb 21 - 23	Topic	<ul style="list-style-type: none"> <li>• Student Presentations for Group Assignment II: Plants Can Save the World!</li> </ul>
	Summary	This week students will present in groups (15 min each presentation) about a solution to a current problem by using a plant.
	Readings/Works	No Readings This Week
	Assignment	Student Presentations for Group Assignment II: Plants Can Save the World!
Week 8 Feb 28 – Mar 2	Topic	<ul style="list-style-type: none"> <li>• Scientific Method: Data Analysis (Part II) – Report &amp; Conclusion</li> <li>• Do Plants Hear?</li> <li>• Do Plants Taste?</li> <li>• Proprioception: The Plant’s 6<sup>th</sup> Sense</li> </ul>
	Summary	This week we will talk about the final steps of the scientific method. Students will have hands-on experience in data analysis. We will also look at plants’ sense of hearing and learn how plants know where things are. We will examine the plant’s response to gravity and look at some examples such as the sunflower, which daily responds to the sunlight.

Week/ Date	Activity	Topic/Assignment (Question/Subject)
	Readings/Works	What a Plant Hears (pages 91 to 112). Chapter 4, Charmovitz D, 2017. Do Plant Taste? (pages 49 to 68) Chapter 3, Charmovitz D, 2017. How Does a Plant Know Where It Is? (pages 91 to 113). Chapter 6, Charmovitz D, 2017. <a href="#">Plants May Let Out Ultrasonic Squeals When Stressed</a> (2 pages)
	Assignment	Quiz 6; Online poll
Week 9 Mar 7 - 9	Topic	<ul style="list-style-type: none"> <li>• Kahoot</li> <li>• Test 2</li> </ul>
	Summary	This week we will do a review using trivia (kahoot) and do the second test for the first half of the course.
	Readings/Works	No readings for this week
	Assignment	Kahoot; Test 1
Mar 13 - 18		----- <b>Spring Break</b> -----
<b>MODULE III – Plant Interactions</b>		
Week 10 Mar 21 - 23	Topic	<ul style="list-style-type: none"> <li>• Plant Domestication &amp; Plant Taxonomy</li> <li>• The Bad Interactions: Weeds (Guest Lecture: Carlene A. Chase)</li> <li>• The Bad Interactions: Plant Diseases</li> </ul>
	Summary	Now that we have seen the plant senses, we will explore plants' interactions with the world around them. First, we will learn how plant domestication impacted the way plants interact with the environment (good and bad interactions) and the importance of classifying and giving names to plants (plant taxonomy). We also will talk about diseases and weeds, which are part of the bad interactions.
	Readings/Works	<a href="#">Where Did Agriculture Begin? Oh Boy, It's Complicated</a> (2 pages) <a href="#">Monoculture Farming in Agriculture Industry</a> (7 pages) <a href="#">The Plant Disease Doughnut, a Simple Graphic to Explain What is Disease and What is a Pathogen</a> (2 pages) <a href="#">What are Weeds and Why do we Care?</a> (2 pages) <a href="#">Hungry Planet: Stories of Plant Diseases</a> (3 pages)
	Assignment	Quiz 7
Week 11	Topic	<ul style="list-style-type: none"> <li>• The Bad Interactions: Pests (Guest Lecture: Morgan Byron)</li> </ul>

Week/ Date	Activity	Topic/Assignment (Question/Subject)
Mar 28 - 30		<ul style="list-style-type: none"> <li>• Experiential Learning Presentations: Signs of Plant Interactions</li> </ul>
	Summary	This week we will finalize the bad interactions with talking about pests. Students will present their experiential learning assignments.
	Readings/Works	<a href="#">Plants Turn Caterpillars into Cannibals</a> (2 pages)
	Assignment	
Week 12 Apr 4 - 6	Topic	<ul style="list-style-type: none"> <li>• The Good Interactions: Do Plants Cooperate Among Themselves? Plants and Beneficial Microbes</li> <li>• Plants and Soil Health (Guest Lecture: Dr. Yang Lin)</li> </ul>
	Summary	<p>This week we will look at the relationship between plants and beneficial microbes, such as bacteria and fungi, as well as viruses. We will explain where these microbials and viruses are found in the plant and what the benefits are for the plant to have them around. We will also see ways that plants cooperate with their neighbors.</p> <p>We will discuss the benefits that modern agricultural systems have brought us, but also some ecologically destructive impacts and other challenges that we currently face when dealing with plants in food production. We will go over the factors that make up healthy soil, which will help grow healthier and stronger plants.</p>
	Readings/Works	<a href="#">Tiny Microbes, Big Yields: Enhancing Food Crop Production With Biological Solutions</a> (3 pages) <a href="#">Healthy soil is the foundation of productive, sustainable agriculture</a> (1 page & 2 min videos)
	Assignment	Quiz 8; Online poll
Week 13 Apr 11 - 13	Topic	<ul style="list-style-type: none"> <li>• Plants and Pesticides</li> <li>• Plants, GMOs, CRISPR, and Food Security</li> </ul>
	Summary	This week we will explore and debate on the use of biotechnological approaches used in agriculture, such as genetically modified organisms (GMOs) and clusters of regularly interspaced short palindromic repeats (CRISPR). Are they friends or foes? We will also discuss the impact that pesticides have had on agriculture.
	Readings/Works	<a href="#">Potential Health Effects of Pesticides</a> (5 pages) <a href="#">GMOs – Top 3 Pros and Cons</a> (2 pages) <a href="#">These Charts Show Every Genetically Modified Food People Already Eat in the U.S.</a> (4 pages) <a href="#">The Food of the Future</a> (51:44 min video) <a href="#">CRISPR in Agriculture: An Era of Food Evolution</a> (6 pages)

Week/ Date	Activity	Topic/Assignment (Question/Subject)
	Assignment	Quiz 9, Debate
Week 14 Apr 18 - 20	Topic	<ul style="list-style-type: none"> <li>• Biofortification: Fighting the “Hidden Hunger” (Guest Lecture)</li> <li>• Growing and Managing Plants with AI (Guest Lecture)</li> </ul>
	Summary	This week we will discuss the role of biofortification in bringing food with more nutritional value home and the impact of “hidden hunger,” or micronutrient deficiency, on the human population. We will end the week talking about how artificial intelligence has transformed the way we grow and manage plants.
	Readings/Works	<a href="#">Biofortification: It All Starts with A Seed</a> (2:42 min video) <a href="#">The Futuristic Farms That Will Feed the World</a> (6:19 min video) <a href="#">Agriculture’s Improving Image: Drones, satellites &amp; data analysis drive a new agricultural revolution</a> (2 pages)
	Assignment	Self-Reflection Assignment Due Quiz 10
Week 15 Apr 25 (Tue)	Topic	<ul style="list-style-type: none"> <li>• Are Plants Crying out for Help?</li> <li>• Final Message</li> </ul>
	Summary	In this final week we will go over the journey we have been on discussing the plant senses. We will identify the benefits and issues that the advent of agriculture brought us as well as the new technologies currently being used to mitigate the challenges we face while growing plants. We will discuss the evidence that plants have given that we need to change the course of our actions in order to preserve our planet.
	Readings/Works	<a href="#">New Research On Plant Intelligence May Forever Change How You Think About Plants</a> (23:48 min audio) <a href="#">When plants cry out for help, their neighbors start screaming, too</a> (2 pages) <a href="#">Are Giant Sequoia Trees Succumbing to Drought?</a> (10 pages)
Week 16	Assignment	Exam 2

## IV. Student Learning Outcomes (SLOs)

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At the end of this course, students will be expected to have achieved the [Quest](#) and [General Education](#) learning outcomes as follows:

**Content:** *Students demonstrate competence in the terminology, concepts, theories and methodologies used within the discipline(s).*

- Students will be able to identify, describe, and explain:
  - the importance of plants to our planet.
  - the similarities of human senses and plant senses.
- **(Quest 2 SLOs:** Identify, describe, and explain the cross-disciplinary dimensions of a pressing societal issue or challenge as represented by the social sciences and/or biophysical sciences incorporated into the course.)
- **Assessment:** Student competencies will be assessed through class participation, jigsaw activity, quizzes, and test 1

**Critical Thinking:** *Students carefully and logically analyze information from multiple perspectives and develop reasoned solutions to problems within the discipline(s).*

- Students will be able to analyze and evaluate:
  - how plants interact with their surroundings: the good and bad interactions.
  - the impact of monoculture on plant health and on the environment.
  - how we can better understand plants and what can we do to mitigate issues associated with plants (e.g. pests, diseases, pesticide overuse, soil erosion, etc.) in order to preserve our planet.
- **(Quest 2 SLOs:** Critically analyze quantitative or qualitative data appropriate for informing an approach, policy, or praxis that addresses some dimension of an important societal issue or challenge.)
- **Assessment:** Student competencies will be assessed through class participation, quizzes, test 2, and experiential learning

**Communication:** *Students communicate knowledge, ideas and reasoning clearly and effectively in written and oral forms appropriate to the discipline(s).*

- Students will be able to develop and present:
  - the importance of a selected plant in mitigating an important environmental issue.
  - solutions to the negative impact that modern forms of growing and managing plants have brought us.
  - parts of the course material in a cooperative learning style in a small group of students (3 to 4 students).
- **(Quest 2 SLOs:** Develop and present, in terms accessible to an educated public, clear and effective responses to proposed approaches, policies, or practices that address important societal issues or challenges.)
- **Assessment:** Student competencies will be assessed through class participation and group projects

**Connection:** *Students connect course content with meaningful critical reflection on their intellectual, personal, and professional development at UF and beyond.*

- Students will be able to connect course content with their own personal beliefs and behaviors regarding the pros and cons of modern technological approaches used to grow plants in our society.
- **(Quest 2 SLOs:** Connect course content with critical reflection on their intellectual, personal, and professional development at UF and beyond.)
- **Assessment:** Student competencies will be assessed through discussion (debate) and self-reflection

## V. Required Policies

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### **Attendance Policy**

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/ugrad/current/regulations/info/attendance.aspx>

### **Students Requiring Accommodation**

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. 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.

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

### **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.

## **Counseling and Wellness Center**

Contact information for the Counseling and Wellness Center: <http://www.counseling.ufl.edu/> , 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

## **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.

## **In-Class Recordings**

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.