

Term Information

Effective Term Autumn 2022
Previous Value Autumn 2020

Course Change Information

What change is being proposed? (If more than one, what changes are being proposed?)

Syllabus updated and GE status change to match the new GE for Foundations Natural Sciences. Goals and Topic list has been updated as course content was slightly adjusted to accommodate the newly created lab that works in partnership with this course. All campuses added.

What is the rationale for the proposed change(s)?

This is to meet the new GE Foundations Natural Sciences requirements

What are the programmatic implications of the proposed change(s)?

(e.g. program requirements to be added or removed, changes to be made in available resources, effect on other programs that use the course)?

None

Is approval of the request contingent upon the approval of other course or curricular program request? Yes

Please identify the pending request and explain its relationship to the proposed changes(s) for this course (e.g. cross listed courses, new or revised program)

HCS 2200 will be a Foundations Natural Sciences course with the approval of HCS 2203 Introduction to Plant Science Laboratory. Combined these courses will meet the 4 credit hour requirement for a Foundations GE.

Is this a request to withdraw the course? No

General Information

Course Bulletin Listing/Subject Area	Horticulture and Crop Science
Fiscal Unit/Academic Org	Horticulture & Crop Science - D1127
College/Academic Group	Food, Agric & Environ Science
Level/Career	Undergraduate
Course Number/Catalog	2200
Course Title	The World of Plants
Transcript Abbreviation	World of Plants
Course Description	Study of the cultivation, environmental, genetic, and social/cultural factors which influence the sustainable production of plants for food, fiber, ornamental and recreational uses.
Semester Credit Hours/Units	Fixed: 3

Offering Information

Length Of Course	14 Week, 12 Week
Flexibly Scheduled Course	Never
Does any section of this course have a distance education component?	Yes
Is any section of the course offered	100% at a distance Greater or equal to 50% at a distance Less than 50% at a distance
Grading Basis	Letter Grade
Repeatable	No

Course Components	Lecture, Recitation
Grade Roster Component	Lecture
Credit Available by Exam	Yes
Exam Type	EM Tests via Office of Testing
Admission Condition Course	No
Off Campus	Never
Campus of Offering	Columbus, Lima, Mansfield, Marion, Newark, Wooster
<i>Previous Value</i>	<i>Columbus, Wooster</i>

Prerequisites and Exclusions

Prerequisites/Corequisites

Exclusions

Electronically Enforced No

Cross-Listings

Cross-Listings

Subject/CIP Code

Subject/CIP Code	01.1103
Subsidy Level	Baccalaureate Course
Intended Rank	Freshman, Sophomore, Junior, Senior

Requirement/Elective Designation

Required for this unit's degrees, majors, and/or minors

General Education course:

Biological Science; Natural Sciences

The course is an elective (for this or other units) or is a service course for other units

Previous Value

Required for this unit's degrees, majors, and/or minors

General Education course:

Biological Science

The course is an elective (for this or other units) or is a service course for other units

Course Details

Course goals or learning objectives/outcomes

- Goal 1: Successful students will engage in theoretical and empirical study within the natural sciences, while gaining an appreciation of the modern principles, theories, methods, and modes of inquiry used generally across the natural sciences.
- Outcome: Explain basic facts, principles, theories and methods of modern natural sciences; describe and analyze the process of scientific inquiry.
- Outcome: Identify how key events in the development of science contribute to the ongoing and changing nature of scientific knowledge and methods.
- GOAL 2: Successful students will discern the relationship between the theoretical and applied sciences, while appreciating the implications of scientific discoveries and the potential impacts of science and technology
- Outcome: Analyze the inter-dependence and potential impacts of scientific and technological developments.
- Outcome: Evaluate social and ethical implications of natural scientific discoveries.
- Outcome: Critically evaluate and responsibly use information from the natural sciences.

Previous Value

- *Analyze and describe the fundamental concepts of successfully growing plants.*
- *Evaluate how environmental, economic, social, and other factors interact and influence why and how plants are grown.*
- *Describe how the interactions of the components of stable natural ecosystems can be used to create successful, sustainable ecosystems of crops, landscapes, golf courses, and athletic fields.*
- *Evaluate the role plants play in our lives and describe many of the specific plants that fill those roles.*
- *Be able to apply what is learned in this class to other classes and toward success in their careers or for greater enjoyment of an avocation.*

Content Topic List

- Introduction to The World of Plants
- The Scientific Method and Natural Science Literacy
- Plant Origins, Classification and Use
- Plants: The Good, the Bad and the Ugly
- Plant: Climate Relations - Solar radiation & moisture
- Plant: Climate Relations - Temperature & air
- Plant & Soils Interaction
- Plant Structure, Growth & Development
- Plant Reproduction, Propagation and Genetics
- Mineral Nutrition & Water
- Integrated Pest Management (IPM)

Previous Value

- *Introduction to "The World of Plants" & group formation*
- *Where do plants grow? Plant Biomes of the World*
- *Growing plants & turf for human use*
- *Plants: The Good, the Bad and the Ugly*
- *Plant: Climate interactions - Solar radiation & moisture*
- *Plant: Climate interactions - Temperature & air*
- *Ohio Veggies!*
- *Plant structure, growth & development*
- *Plant origins, diversity & preservation*
- *Plant reproduction, breeding & propagation*
- *Plant genetics*
- *Soils*
- *Plant mineral nutrition*
- *Native plants & their use*
- *Plant cropping systems: (organic, conventional, sustainable, resilient)*
- *Integrated pest management (IPM)*

Sought Concurrence

No

Attachments

- sherrattGE.docx: New GE Application
(GEC Course Assessment Plan. Owner: Luikart, Meredith Marie)
- Tues_HCS 2200_ In-PersonAU22-Sherratt_7_6_21[89].docx: In-Person Syllabus
(Syllabus. Owner: Luikart, Meredith Marie)
- HCS 2200_Online_AU22-Sherratt_7_23_21.docx: Online Syllabus
(Syllabus. Owner: Luikart, Meredith Marie)

Comments

- Please check off all campuses (as requested by OAA for all new GE courses) or provide rationale why a campus should be left out. *(by Vankeerbergen, Bernadette Chantal on 08/20/2021 03:02 PM)*
- This is an existing Natural Sciences GE Course. There is no change to the course other than adjusting the GE Learning Goals and Outcomes to those of the new Natural Sciences GE, and minor changes to the topic list to align with the new GE ELOs. This course is grandfathered into the new GE; and combined with HCS 2203 that is submitted as a new course request, will be a 3 + 1 credit hour Natural Sciences GE. Both courses must be taken to satisfy the Natural Sciences GE requirement.

Revise as per COAA via email 22 July 2021

Revise as per email 15 July 2021 *(by Osborne, Jeanne Marie on 07/27/2021 02:56 PM)*

COURSE CHANGE REQUEST
2200 - Status: PENDING

Last Updated: Osborne, Jeanne Marie
08/24/2021

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Luikart, Meredith Marie	07/09/2021 04:49 PM	Submitted for Approval
Approved	Gardner, David Sean	07/09/2021 10:27 PM	Unit Approval
Revision Requested	Osborne, Jeanne Marie	07/15/2021 03:12 PM	College Approval
Submitted	Luikart, Meredith Marie	07/21/2021 09:56 AM	Submitted for Approval
Approved	Gardner, David Sean	07/21/2021 09:57 AM	Unit Approval
Revision Requested	Osborne, Jeanne Marie	07/22/2021 03:42 PM	College Approval
Submitted	Luikart, Meredith Marie	07/22/2021 10:39 PM	Submitted for Approval
Approved	Gardner, David Sean	07/23/2021 07:59 AM	Unit Approval
Approved	Osborne, Jeanne Marie	07/27/2021 02:59 PM	College Approval
Revision Requested	Vankeerbergen, Bernadette Chantal	08/20/2021 03:03 PM	ASCCAO Approval
Submitted	Luikart, Meredith Marie	08/23/2021 10:57 AM	Submitted for Approval
Approved	Barker, David John	08/23/2021 11:13 AM	Unit Approval
Approved	Osborne, Jeanne Marie	08/24/2021 02:13 PM	College Approval
Pending Approval	Cody, Emily Kathryn Jenkins, Mary Ellen Bigler Hanlin, Deborah Kay Hilty, Michael Vankeerbergen, Bernadette Chantal Steele, Rachel Lea	08/24/2021 02:13 PM	ASCCAO Approval

SYLLABUS

HCS 2200 THE WORLD OF PLANTS AUTUMN 2022 ONLINE

COURSE OVERVIEW

Instructor

Instructor: Pam Sherratt

Email address: sherratt.1@osu.edu (preferred method of communication)

Phone/text number: 614-292-7457

Office location: 240C Howlett Hall

Office hours: By appointment through Zoom, Skype, or other videoconferencing tools. Contact instructor to set up a meeting and choose which tool to use.

Course Organization

Credits: 3

Prerequisites (or concurrent): None

Students will be required to participate at least once per week in an activity, such as discussion response, group assignment etc.

Course description

Study of the cultural, environmental, genetic, and social/cultural factors which influence the sustainable production of plants for food, fiber, ornamental, and recreational uses.

HCS 2200 fulfills 3-credits of the General Education (GE) Category GE Foundations: Natural Sciences. It is intended to be taken with the 1-credit GE Foundations: Natural Sciences laboratory titled "Introduction to Plant Science Laboratory" (HCS 2203). Together the HCS 2200 lecture (3 credits) and HCS 2203 laboratory (1 credit) fulfill 4-credits of the General Education (GE) Category: GE Foundations, Natural Sciences.

HCS 2200, fulfills 3-credits of the General Education (GE) Category Foundations: Natural Sciences. Students will engage in theoretical and empirical study within the natural sciences. Students will gain an appreciation of modern principles, theories, methods and modes of inquiry used generally across the natural sciences. Students will discern the relationship between science and technology, while appreciating the implications of scientific discoveries

and the potential impacts of science and technology to address problems of the contemporary world.

HOW HCS 2200 FULFILLS THESE GE NATURAL SCIENCES LEARNING GOALS AND OUTCOMES

This course fulfills the General Education (GE) rationale for the GE Foundations: Natural Sciences category. HCS 2200 fulfills Natural Sciences Goals 1 and 2 and Expected Learning Outcome 1.1, 1.2, 2.1, 2.2 and 2.3.

When this 3-credit HCS 2200 lecture is taken in combination with the 1-credit HCS 2203 laboratory, together these 4-credits (i.e., 3-credit lecture + 1-credit laboratory) fulfill ALL Goals (i.e., Goals 1 and 2) and ALL Expected Learning Outcomes (i.e., ELOs 1.1, 1.2, 1.3, 2.1, 2.2, 2.3) for the Foundations, Natural Science GE category.

HCS 2200 GE FOUNDATIONS: NATURAL SCIENCES GOALS AND LEARNING OUTCOMES

GOAL 1: Successful students will engage in theoretical and empirical study within the natural sciences, while gaining an appreciation of the modern principles, theories, methods, and modes of inquiry used generally across the natural sciences.

- Expected Learning Outcome 1.1: Successful students are able to explain basic facts, principles, theories and methods of modern natural sciences; describe and analyze the process of scientific inquiry.
- Expected Learning Outcome 1.2: Successful students are able to identify how key events in the development of science contribute to the ongoing and changing nature of scientific knowledge and methods.

GOAL 2: Successful students will discern the relationship between the theoretical and applied sciences, while appreciating the implications of scientific discoveries and the potential impacts of science and technology.

- Expected Learning Outcome 2.1: Successful students are able to analyze the inter-dependence and potential impacts of scientific and technological developments.
- Expected Learning Outcome 2.2: Successful students are able to evaluate social and ethical implications of natural scientific discoveries.
- Expected Learning Outcome 2.3: Successful students are able to critically evaluate and responsibly use information from the natural sciences.

How the course learning objectives address departmental learning objectives: HCS 2200 integrates fundamentals of physical and biological sciences in the context of sustainable plant systems (Dept. Objective 2), introduces concepts in translational plant science (Dept. Objective 3), introduces students to the ecological basis of sustainability and sustainable

practices (Dept. Objective 4), and instills an appreciation for the necessity of life-long learning and using evaluation and synthesizing skills (Dept. Objective 7).

HOW THIS COURSE WORKS

Mode of delivery: This course is 100% online. There are no required sessions when you must be logged in to Carmen at a scheduled time.

Group work: In week one, you will be assigned a group. Group projects and discussions will be assigned throughout the course and can be accessed on Carmen. Each group will have a discussion forum within the course.

Pace of online activities: This course is divided into **weekly modules** that are released one week ahead of time. Students are expected to keep pace with weekly deadlines but may schedule their efforts freely within that time frame.

Credit hours and work expectations: This is a **3-credit-hour course**. According to [Ohio State policy](#), students should expect around 3 hours per week of time spent on direct instruction (instructor content and Carmen activities, for example) in addition to 6 hours of homework (reading and assignment preparation, for example) to receive a grade of (C) average.

Attendance and participation requirements: Because this is an online course, your attendance is based on your online activity and participation. The following is a summary of everyone's expected participation:

- **Participating in online activities for attendance: AT LEAST ONCE PER WEEK**
You are expected to log in to the course in Carmen every week. (During most weeks you will probably log in many times.) If you have a situation that might cause you to miss an entire week of class, discuss it with me *as soon as possible*.
- **Office hours: OPTIONAL**
Office hours, are optional and by appointment.
- **Participating in discussion forums: 3+ TIMES PER WEEK**
As part of your participation, each week you can expect to post at least three times on Packback as part of our substantive class discussion on the week's topics.

COURSE MATERIALS AND TECHNOLOGIES

TEXTBOOK

OPTIONAL

- Plant Science: Growth, Development, and Utilization of Cultivated Plants 6th Edition (2019), Margaret McMahon

OTHER FEE

- Packback fee \$25.00

Course technology

All course materials are distributed via Carmen <http://carmen.osu.edu>, and grades can be viewed there. For help with your password, university email, Carmen, or any other technology issues, questions, or requests, contact the OSU IT Service Desk. Standard support hours are available at <https://ocio.osu.edu/help/hours>, and support for urgent issues is available 24/7.

- **Self-Service and Chat support:** <http://ocio.osu.edu/selfservice>
- **Phone:** 614-688-HELP (4357)
- **Email:** 8help@osu.edu
- **TDD:** 614-688-8743

BASELINE TECHNICAL SKILLS FOR ONLINE COURSES

- Basic computer and web-browsing skills
- Navigating Carmen: for questions about specific functionality, see the [Canvas Student Guide](#).

REQUIRED TECHNOLOGY SKILLS SPECIFIC TO THIS COURSE

- CarmenConnect text, audio, and video chat
- Recording a slide presentation with audio narration
- Recording, editing, and uploading video

REQUIRED EQUIPMENT

- Computer: current Mac (OS X) or PC (Windows 7+) with high-speed internet connection
- Webcam: built-in or external webcam, fully installed and tested
- Microphone: built-in laptop or tablet mic or external microphone
- Other: a mobile device (smartphone or tablet) or landline to use for BuckeyePass authentication

REQUIRED SOFTWARE

- [Microsoft Office 365](#): All Ohio State students are now eligible for free Microsoft Office 365 ProPlus through Microsoft's Student Advantage program. Full instructions for downloading and installation can be found [at go.osu.edu/office365help](https://go.osu.edu/office365help).

You will need to use [BuckeyePass](#) multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you take the following steps:

- Register multiple devices in case something happens to your primary device. Visit the [BuckeyePass - Adding a Device](#) help article for step-by-step instructions.
- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click "Enter a Passcode" and then click the "Text me new codes" button that appears. This will text you ten passcodes good for 365 days that can each be used once.
- Download the [Duo Mobile application](#) to all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service.

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357 (HELP) and the IT support staff will work out a solution with you.

PACKBACK

Participation is a requirement for this course, and the Packback Questions platform will be used for online discussion about class topics. Packback Questions is an online curiosity community where you can be fearlessly curious and ask BIG questions about how what we're studying relates to life and the real world.

Your participation on Packback will count towards 10 percent of your final grade.

In order to receive your points per week, you must post **1 question and 2 answers relevant to our class subject matter** per week, starting 09/01/20. This will equate to 14 questions and 28 answers over the semester, so the grade will be based on that data.

Before you start posting, be sure to read the [Community Guidelines](#) found in the tutorial on Packback. If your post doesn't follow the Packback Community Guidelines, there is a chance it will be removed, and you won't receive points for that post.

There will be a **Sunday 11:59 PM deadline** for submissions in your community each week.

Each week, we will spend time in Carmen highlighting discussions from Packback, encouraging feedback and recognizing top students!

To start posting on Packback Questions:

1. Navigate to <https://Packback.co/questions> and click “Register as a new student”.
Note: If you already have an account on Packback you can login with your credentials.
2. Make sure to register with your SCHOOL email address and real first name and last name.
3. Enter our class community’s access code into the “Join a new Community” module on your dashboard. Our Community access code: **CAF463AB-D1B5-0DFA-E632-92CDB43F3CFB** <- This code will be updated with current code once semester starts.
4. Follow the instructions on your screen to finish your registration.

For a brief introduction to Packback Questions and why we are using it in class, watch this video: vimeo.com/packback/Welcome-to-Packback-Questions

Packback Accessibility

Information can be found here: <https://www.packback.co/product/accessibility/>

Packback Support

Technical support for Packback can be found here: <https://packback.zendesk.com/hc/en-us/requests/new>

GRADING AND FACULTY RESPONSE

How your grade is calculated

ASSIGNMENT CATEGORY	POINTS
4 Quizzes (10 points each)	40
Plants in My Life	15
Aloe Vera Branching Activity	5
Diversity in Plant Science Assignment	10
Video Critiques	5
Packback (class participation)	20
Self-assessment	5

Total	100
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BONUS POINTS (5) ALSO OFFERED

See course schedule below for due dates.

Assignments

4 Quizzes: (40 points) Four quizzes will be offered during the course. The quizzes will be evenly weighted to make up 40 points of the overall grade. There are typically 25 questions per quiz. Quizzes will cover current material outlined in the study guide and will not be comprehensive.

Academic Integrity Policy: Quizzes are completed via Carmen and are timed and open-book. Weekly quizzes are included as self-checks without points attached. You must complete the quizzes yourself, without any external help or communication. If you miss a quiz, you will receive a grade of zero. Make up quizzes will be given only if the student has a legitimate reason for missing the quiz and it is discussed and approved by the instructor prior to the date of the quiz. If an emergency arises and the student misses a quiz, a note from a doctor, clergyman, etc. will need to be provided to schedule a makeup quiz. The instructor reserves the right to verify the authenticity of the document provided by the students for makeup quizzes.

Plants in My Life (15) Over the 15-week period, students will take a photo each week of any plant in their life or their community and try to identify that plant. Students will collect photos each week and post them in Carmen along with a brief description of the plant and its use. This will encourage collaboration amongst classmates as they work together to identify mystery plants.

Academic Integrity Policy: Discussion posts must be your own original work. You are encouraged to engage with classmates on the pictures that each of you post, but no one else should revise or rewrite your work.

Aloe Vera Activity: (5) Why do plants go brown and die? How do you diagnose a plant problem? Developing diagnostic skills is one area of plant science that is very important. Looking for signs of disease, insect attack, or inadequate care can be challenging, but can also be rewarding. It's a lot like detective work! This assignment will guide you through a scenario & highlight a couple of diagnostic skills, using our senses (mainly sight, touch, and smell) to look for clues and make a diagnosis.

Academic Integrity Policy: The branching activity must be completed on your own.

Diversity in Plant Science (10) For this assignment, I want you to do some research about people in the plant science industry who have made contributions, discoveries, scientific breakthroughs etc. and tell me about them. I want to see diversity among the people you pick.

Details:

- Do some research online to find a person in plant science who interests you. Ideas - plant explorer, scientist, grower, teacher, author etc.
- Scroll through your classmates' posts to make sure you do not pick the same person. I do not want duplicate posts. If there is a duplicate post, the student who posted first will get the grade and the 2nd poster will have to re-do.
- Post a picture, video or link to the person you have chosen in Carmen, and tell me a little about them (1-2 paragraphs).

Academic Integrity Policy: Discussion posts must be your own original work. You are encouraged to engage with classmates about the plant scientist you have chosen, but no one else should revise or rewrite your work.

Plant Genetics Video Critiques: (5) You will be asked to watch 2 videos in relation to plant genetics and answer questions on those videos in the discussion forum.

Academic Integrity Policy: Discussion posts must be your own original work. You are encouraged to ask a trusted person to proof-read your posts before you turn them in, but no one else should revise or rewrite your work.

Packback Questions (20) This forum will be used as our main place to discuss topics and engage with each other. There will be a weekly **Sunday at 11.59pm** deadline for submissions. In order to receive your points per week, you should submit the following per each deadline period:

- 1 open-ended Question per week with a minimum Curiosity Score of 55, each worth 33.33% of each assignment grade
- 2 Responses per week with a minimum Curiosity Score of 55, each worth 66.67% of each assignment grade
- Half credit will be provided for questions and responses that do not meet the minimum curiosity score.

Academic Integrity Policy: Packback discussion posts must be your own original work. You are encouraged to ask a trusted person to proof-read your posts before you turn them in, but no one else should revise or rewrite your work.

Self-Assessment: (5) At the end of the class, students are required to complete a self-assessment. This is a 250-word essay where students are asked to reflect upon their personal effort in the class and how well they worked with the class community.

Academic Integrity Policy: The self-assessment must be your own original work. You should follow [MLA/APA] style to cite the ideas and words of your research sources. You are encouraged to ask a trusted person to proof-read your assignments before you turn them in, but no one else should revise or rewrite your work.

Student participation requirement

Because this is a distance-education course, your attendance is based on your online activity and participation. The following is a summary of everyone's expected participation:

- **Logging in:**
Be sure you are logging in to the course in Carmen at least one time per week, including weeks with holidays or weeks with minimal online course activity. (During most weeks you will probably log in many times.) If you have a situation that might cause you to miss an entire week of class, discuss it with me *as soon as possible, and no less than one week prior to the anticipated absence*.
- **Participation in discussion forums:**
You can expect to post an entry to the discussion forum at least one time (sometimes more) per week as part of our class discussion on the week's topics.
- **Lengthy Absences:** The instructor understands that there are extenuating circumstances that pop up unexpectedly and will be dealt with on a case by case basis. Students are responsible for reaching out to the instructor either via email, phone, or text. Examples of a lengthy excused absence: sickness, computer difficulties, family emergencies.

Late assignments

All assignments are due by 11:59pm on the designated due date. You can find the actual due dates in Carmen website under the syllabus/assignment sections. There are no extensions of due dates without documented, extenuating circumstances subject to the approval of the instructor. All requests for extensions must be received by the instructor no less than 1 week prior to the due date; in the case of a documented emergency, you must contact the instructor within 24 hours to request an extension. Make-up quizzes are permitted with permission of instructor. Students must communicate with instructor to establish a day/time for make-up quiz.

GRADING SCALE

Letter Grade	%	Mastery
A	93.00–100.0	Demonstrates complete mastery of all learning outcomes as demonstrated on assessments; participates in all aspects of the lab in a positive and timely manner.
A-	90.00–92.99	
B+	87.00–89.99	Demonstrates mastery of at least two learning outcomes as demonstrated on assessments; participates in all aspects of the lab in a positive and timely manner.
B	83.00–86.99	
B-	80.00–82.99	
C+	77.00–79.99	Demonstrates mastery of at least one learning outcome as demonstrated on assessments; participates in some aspects of the lab in a positive and timely manner. A minimum grade of “C-“ will be earned by a student making a good faith effort on all aspects of the lab and demonstrated engagement.
C	73.00–76.99	
C-	70.00–72.99	
D+	67.00–69.99	Fails to meet mastery of any learning outcome such that student will not be successful in higher-level course; did not complete assessments; demonstrated lack of engagement, did not participate in lab, did not complete assessment in a timely fashion.
D	60.00–66.99	
E	00.00–59.99	

Faculty feedback and response time

I am providing the following list to give you an idea of my intended availability throughout the course. (Remember that you can call **614-688-HELP** at any time if you have a technical problem.)

GRADING AND FEEDBACK

For large weekly assignments, you can generally expect feedback within **7 school days**. For exams, you can generally expect feedback within **2 weeks**.

E-MAIL

Email sent to sherratt.1@osu.edu will receive a reply within **24 hours on school days**.

DO

- Include a descriptive statement in the subject line.
- Use proper salutations when beginning an e-mail.
- Be concise in the body of the e-mail, use complete sentences and proper grammar.
- Use an appropriate closure at the end of each e-mail followed by your first and last name.
- If replying to an e-mail, reference the original e-mail and its content.

- Be selective of your choice of words. Emotions are difficult to convey in text and without the benefit of facial expressions your sentiment can be lost in the words you choose to write.

DON'T

- Use all capital letters; this conveys a tone of ANGER.
- Use e-mail as a format to criticize other individuals.
- Ask for your grade via e-mail. Grades will not be discussed by e-mail. If you need to discuss a graded item make an appointment to do so in my office.
- E-mail to inquire when grades will be posted. We will work toward submitting grades promptly, however, recognize that grading assignments and exams requires considerable time to ensure uniformity and fairness.
- Send an e-mail out of frustration or anger. Learn to save the e-mail as a draft and review at a later time when emotions are not directing the content.

DISCUSSION BOARD

The Carmen discussion section will be used for assignments and not as a primary means for asking questions. Students are encouraged to email questions to sherratt.1@osu.edu or call 614-292-7457.

OTHER COURSE POLICIES

Discussion and communication guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Writing style:** While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. A more conversational tone is fine for non-academic topics.
- **Tone and civility:** Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online.
- **Citing your sources:** When we have academic discussions, please cite your sources to back up what you say. (For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.)
- **Backing up your work:** Consider composing your academic posts in a word processor, where you can save your work, and then copying into the Carmen discussion.
- **For accessibility** – avoid using the colors red and green in presentations and coursework.

ACADEMIC INTERGITY POLICY

POLICIES FOR THIS ONLINE COURSE

- **Quizzes:** You must complete the quizzes yourself, without any external help or communication. Quizzes are completed via Carmen and are timed and open-book. Weekly quizzes are included as self-checks without points attached.
- **Written assignments:** Your written assignments, including discussion posts, should be your own original work. In formal assignments, you should follow **[MLA/APA]** style to cite the ideas and words of your research sources. You are encouraged to ask a trusted person to proofread your assignments before you turn them in—but no one else should revise or rewrite your work.
- **Reusing past work:** In general, you are prohibited in university courses from turning in work from a past class to your current class, even if you modify it. If you want to build on past research or revisit a topic you've explored in previous courses, please discuss the situation with me.
- **Falsifying research or results:** All research you will conduct in this course is intended to be a learning experience; you should never feel tempted to make your results or your library research look more successful than it was.
- **Collaboration and informal peer-review:** The course includes many opportunities for formal collaboration with your classmates. While study groups and peer-review of major written projects is encouraged, remember that comparing answers on a quiz or assignment is not permitted. If you're unsure about a particular situation, please feel free just to ask ahead of time.

OHIO STATE'S ACADEMIC INTEGRITY POLICY

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University's *Code of Student Conduct*, and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the University, or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University's *Code of Student Conduct* is never considered an excuse for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by University Rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the University's *Code of Student Conduct* (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the University.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- The Committee on Academic Misconduct web pages ([COAM Home](#))
- *Ten Suggestions for Preserving Academic Integrity* ([Ten Suggestions](#))
- *Eight Cardinal Rules of Academic Integrity* (www.northwestern.edu/uacc/8cards.htm)

UNIVERSITY RESOURCES

Your Mental Health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life Counseling and Consultation Services (CCS) by visiting ccs.osu.edu or calling (614) 292- 5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on-call counselor when CCS is closed at (614) 292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-(800)-273-TALK or at suicidepreventionlifeline.org

David Wirt, wirt.9@osu.edu, is the CFAES embedded mental health counselor. He is available for new consultations and to establish routine care. To schedule with David, please call 614-292-5766. Students should mention their affiliation with CFAES when setting up a phone screening.

Advising

Students are encouraged to speak with their academic or major advising for scheduling issues, degree audit questions or other concerns. Academic advising models vary by department and major. Overview and contact information for advising services offered on main campus can be found at: <https://advising.osu.edu>

Student Services

Overview and contact information for student services (Buckeyelink) on main campus can be found at: <https://contactbuckeyelink.osu.edu> (formerly ssc.osu.edu)

Copyright disclaimer

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Intellectual Property (covered by copyright) includes Course materials (Text, Audio, Video, Multimedia, Sims, Apps, etc.), and Student Generated materials

Creating an environment free from harassment, discrimination, and sexual misconduct

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

1. Online reporting form at equity.osu.edu,
2. Call 614-247-5838 or TTY 614-688-8605,
3. Or Email equity@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

- All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.
- The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.

Diversity Statement

The Ohio State University affirms the importance and value of diversity of people and ideas. We believe in creating equitable research opportunities for all students and to providing programs and curricula that allow our students to understand critical societal challenges from diverse perspectives and aspire to use research to promote sustainable solutions for all. We are committed to maintaining an inclusive community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among all members; and encourages each individual to strive to reach their own potential. The Ohio State University does not discriminate on the basis of age, ancestry, color, disability, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, race, religion, sex, gender, sexual orientation, pregnancy, protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment.

To learn more about diversity, equity, and inclusion and for opportunities to get involved, please visit:

- <https://odi.osu.edu/>
- [https://odi.osu.edu/racial-justice-resources\](https://odi.osu.edu/racial-justice-resources/)
- <https://odi.osu.edu/focus-on-racial-justice>
- <http://mcc.osu.edu/>

In addition, this course adheres to The Principles of Community adopted by the College of Food, Agricultural, and Environmental Sciences. These principles are located on the Carmen site for this course; and can also be found at <https://go.osu.edu/principlesofcommunity>. For additional information on Diversity, Equity, and Inclusion in CFAES, contact the CFAES Office for Diversity, Equity, and Inclusion (<https://equityandinclusion.cfaes.ohio-state.edu/>). If you

have been a victim of or a witness to a bias incident, you can report it online and anonymously (if you choose) at <https://studentlife.osu.edu/bias/report-a-bias-incident.aspx>.

Grievance Procedure

According to University Policies, if you have a problem with this class, you should seek to resolve the grievance concerning a grade or academic practice by speaking first with the instructor or professor. Then, if necessary, take your case to the department chairperson, college dean or associate dean, and to the provost, in that order. Specific procedures are outlined in Faculty Rule 3335-7-23. Grievances against graduate, research, and teaching assistants should be submitted first to the supervising instructor, then to the chairperson of the assistant's department.

ACCESSIBILITY ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Disability Accommodations

The university strives to make all learning experiences as accessible as possible. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's request process, managed by Student Life Disability Services. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let me know immediately so that we can privately discuss options.

To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

Accessibility of course technology

This online course requires use of Carmen (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.

- [Carmen \(Canvas\) accessibility](#)
- Streaming audio and video
- Synchronous course tools
- [Definition OSU](#)
- [Overview of Accessibility at OSU](#)
- If you require specific software for the course list or provide a link to the software's accessibility privacy statements
 - [Adobe Connect \(Carmen Connect\) Accessibility](#) [Adobe Privacy Policy](#)
 - [MediaSite Accessibility Statement](#)
 - [Microsoft Office Accessibility](#) [Microsoft Office 365 Privacy](#)

COURSE SCHEDULE (TENTATIVE)

	Topics	Assessments
1	Introduction to The World of Plants. The Scientific Method and Natural Science Literacy	Bonus 1: Who are you? Plants in My Life Post
2	Plant Origins, Classification and Use	Packback* Plants in My Life Post
3	Plant Origins, Classification and Use NPR: The Columbus Exchange Plants: The Good, the Bad and the Ugly	Diversity in Plant Science Plants in My Life Post
4	Plant: Climate Relations - Solar radiation & moisture	Quiz 1 Plants in My Life Post
5	Plant: Climate Relations - Temperature & air	Plants in My Life Post

6	Plant & Soils Interaction	Plants in My Life Post
7	Plant & Soils Interaction	Plants in My Life Post
8	Plant Structure, Growth & Development	Quiz 2 Plants in My Life Post
9	Plant Structure, Growth & Development	Plants in My Life Post
10	Plant Reproduction, Propagation and Genetics	Plants in My Life Post
11	Plant Reproduction, Propagation and Genetics	Video critiques Plants in My Life Post
12	Mineral Nutrition & Water	Quiz 3 Plants in My Life Post
13	Integrated Pest Management (IPM)	Bonus 2 Plants in My Life Post
14	Integrated Pest Management (IPM)	Plants in My Life Post
15	Wrap-up Turn in self-assessment	Aloe vera activity Plants in My Life Post
16	Final - Quiz 4	

*Packback requires weekly interaction (1 question and 2 responses per week, due Sunday at 11.59pm)



SYLLABUS

HCS 2200 THE WORLD OF PLANTS AUTUMN 2022

COURSE OVERVIEW

Instructor

Instructor: Pam Sherratt

Email address: sherratt.1@osu.edu (preferred method of communication)

Phone number: 614-292-7457

Office location: 240C Howlett Hall

Office hours: Wednesdays at noon, or by appointment

Course Organization

Credits: 3

Distribution of class time: Tuesdays and Thursday

Prerequisites (or concurrent): None

Meeting times: Tuesday and Thursdays, 3:55 PM – 5:15 PM

Course description

Study of the cultural, environmental, genetic, and social/cultural factors which influence the sustainable production of plants for food, fiber, ornamental, and recreational uses.

HCS 2200 fulfills 3-credits of the General Education (GE) Category: GE Foundations: Natural Sciences. It is intended to be taken with the 1-credit GE Foundations: Natural Sciences laboratory titled "Introduction to Plant Science Laboratory" (HCS 2203). Together the HCS 2200 lecture (3 credits) and HCS 2203 laboratory (1 credit) fulfill 4-credits of the General Education (GE) Category: GE Foundations: Natural Sciences.

HCS 2200, fulfills 3-credits of the General Education (GE) Category GE Foundations: Natural Sciences. Students will engage in theoretical and empirical study within the natural sciences. Students will gain an appreciation of modern principles, theories, methods and modes of inquiry used generally across the natural sciences. Students will discern the relationship between science and technology, while appreciating the implications of scientific discoveries and the potential impacts of science and technology to address problems of the contemporary world.

HOW HCS 2200 FULFILLS THESE GE NATURAL SCIENCE LEARNING GOALS AND OUTCOMES

This course fulfills the General Education (GE) rationale for the Foundations: Natural Sciences category. HCS 2200 fulfills Specific Goals 1 and 2 Natural Sciences and Expected Learning Outcome 1.1, 1.2, 2.1, 2.2 and 2.3.

When this 3-credit HCS 2200 lecture is taken in combination with the 1-credit HCS 2203 laboratory, together these 4-credits (i.e., 3-credit lecture + 1-credit laboratory) fulfill ALL Goals (i.e., Goals 1 and 2) and ALL Expected Learning Outcomes (i.e., ELOs 1.1, 1.2, 1.3, 2.1, 2.2, 2.3) for the Foundations, Natural Science GE category.

HCS 2200 GE NATURAL SCIENCES GOALS AND LEARNING OUTCOMES

GOAL 1: Successful students will engage in theoretical and empirical study within the natural sciences, while gaining an appreciation of the modern principles, theories, methods, and modes of inquiry used generally across the natural sciences.

- Expected Learning Outcome 1.1: Successful students are able to explain basic facts, principles, theories and methods of modern natural sciences; describe and analyze the process of scientific inquiry.
- Expected Learning Outcome 1.2: Successful students are able to identify how key events in the development of science contribute to the ongoing and changing nature of scientific knowledge and methods.

GOAL 2: Successful students will discern the relationship between the theoretical and applied sciences, while appreciating the implications of scientific discoveries and the potential impacts of science and technology.

- Expected Learning Outcome 2.1: Successful students are able to analyze the inter-dependence and potential impacts of scientific and technological developments.
- Expected Learning Outcome 2.2: Successful students are able to evaluate social and ethical implications of natural scientific discoveries.
- Expected Learning Outcome 2.3: Successful students are able to critically evaluate and responsibly use information from the natural sciences.

How the course learning objectives address departmental learning objectives: HCS 2200 integrates fundamentals of physical and biological sciences in the context of sustainable plant systems (Dept. Objective 2), introduces concepts in translational plant science (Dept. Objective 3), introduces students to the ecological basis of sustainability and sustainable practices (Dept. Objective 4), and instills an appreciation for the necessity of life-long learning and using evaluation and synthesizing skills (Dept. Objective 7).

HOW THIS COURSE WORKS

Mode of delivery: This course is an in-person course and attendance in class is required. There are no required sessions when you must be logged in to Carmen at a scheduled time.

Group work: In week one, you will be assigned a group. Group projects and discussions will be assigned throughout the course and accessed through Carmen. Each group will have a discussion forum within the course.

Pace of activities: This course is divided into **weekly modules** that are released one week ahead of time. Students are expected to keep pace with weekly deadlines but may schedule their efforts freely within that time frame.

Credit hours and work expectations: This is a **3-credit-hour course**. According to [Ohio State policy](#), students should expect around 3 hours per week of time spent on direct instruction (instructor content and Carmen activities, for example) in addition to 6 hours of homework (reading and assignment preparation, for example) to receive a grade of (C) average.

Attendance and participation requirements: Your attendance is based on your class activity and interaction, as well as your group participation.

COURSE MATERIALS AND TECHNOLOGIES

TEXTBOOK

OPTIONAL

- Plant Science: Growth, Development, and Utilization of Cultivated Plants 6th Edition (2019), Margaret McMahon

Class Tours

During the class, students will have the opportunity to visit several horticultural facilities on the agriculture campus: Chadwick Arboretum, phenology garden, learning gardens, green roof, Ohio Plant Germplasm Center, and the Howlett greenhouse. Some of these experiences are ‘hands-on’, some are self-guided, and some are assessed by working with the tour guide and filling in a worksheet.

Other fees or requirements

- Packback fee \$25.00

Course technology

All course materials are distributed via Carmen <http://carmen.osu.edu>, and grades can be viewed there. For help with your password, university e-mail, Carmen, or any other technology issues, questions, or requests, contact the OSU IT Service Desk. Standard support hours are available at <https://ocio.osu.edu/help/hours>, and support for urgent issues is available 24x7.

- **Self-Service and Chat support:** <http://ocio.osu.edu/selfservice>
- **Phone:** 614-688-HELP (4357)
- **Email:** 8help@osu.edu
- **TDD:** 614-688-8743

BASELINE TECHNICAL SKILLS NECESSARY FOR IN-PERSON COURSE

- Basic computer and web-browsing skills
- Navigating Carmen

REQUIRED EQUIPMENT

- Computer: current Mac (latest Mac OS) or PC (Windows 7 or higher) with high-speed internet connection

REQUIRED SOFTWARE

- **Microsoft Office 365:** All Ohio State students are now eligible for free Microsoft Office 365 ProPlus through Microsoft's Student Advantage program. Full instructions for downloading and installation can be found [at go.osu.edu/office365help](http://go.osu.edu/office365help).

You will need to use **BuckeyePass** multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you take the following steps:

- Register multiple devices in case something happens to your primary device. Visit the [BuckeyePass - Adding a Device](#) help article for step-by-step instructions.
- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click "Enter a Passcode" and then click the "Text me new codes" button that appears. This will text you ten passcodes good for 365 days that can each be used once.
- Download the [Duo Mobile application](#) to all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service.

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357 (HELP) and the IT support staff will work out a solution with you.

PACKBACK

Participation is a requirement for this course, and the Packback Questions platform will be used for online discussion about class topics. Packback Questions is an online curiosity community where you can be fearlessly curious and ask BIG questions about how what we're studying relates to life and the real world.

Your participation on Packback will count towards 10 percent of your final grade.

In order to receive your points per week, you must post **1 question and 2 answers relevant to our class subject matter** per week, starting 09/01/20. This will equate to 14 questions and 28 answers over the semester, so the grade will be based on that data.

Before you start posting, be sure to read the [Community Guidelines](#) found in the tutorial on Packback. If your post doesn't follow the Packback Community Guidelines, there is a chance it will be removed, and you won't receive points for that post.

There will be a **Sunday 11:59 PM deadline** for submissions in your community each week.

Each week, we will spend time in Carmen highlighting discussions from Packback, encouraging feedback and recognizing top students!

To start posting on Packback Questions:

1. Navigate to <https://Packback.co/questions> and click "Register as a new student".
Note: If you already have an account on Packback you can login with your credentials.
2. Make sure to register with your SCHOOL email address and real first name and last name.
3. Enter our class community's access code into the "Join a new Community" module on your dashboard. Our Community access code: **CAF463AB-D1B5-0DFA-E632-92CDB43F3CFB** <- This code will be updated with current code once semester starts.
4. Follow the instructions on your screen to finish your registration.

For a brief introduction to Packback Questions and why we are using it in class, watch this video: vimeo.com/packback/Welcome-to-Packback-Questions

Packback Accessibility

Information can be found here: <https://www.packback.co/product/accessibility/>

Packback Support

Technical support for Packback can be found here: <https://packback.zendesk.com/hc/en-us/requests/new>

GRADING AND FACULTY RESPONSE

How your grade is calculated

ASSIGNMENT CATEGORY	POINTS
4 Quizzes (10 points each)	40
Plants on Campus Assignment	15
Aloe Vera Branching Activity	5
Diversity in Plant Science Assignment	10
Video Critiques	5
Packback (class participation)	20
Self-assessment	5
Total	100

BONUS POINTS (5) ALSO OFFERED

See course schedule below for due dates.

Assignments

4 Quizzes: (40 points) Four quizzes will be offered during the course. The quizzes will be evenly weighted to make up 40 points of the overall grade. There are typically 25 questions per quiz. Quizzes will cover current material outlined in the study guide and will not be comprehensive. You must complete the quizzes yourself, without any external help or communication. If you miss a quiz, you will receive a grade of zero. Make up quizzes will be given only if the student has a legitimate reason for missing the quiz and it is discussed and approved by the instructor prior to the date of the quiz. If an emergency arises and the student misses a quiz, a note from a doctor, clergyman, etc. will need to be provided to schedule a makeup quiz. The instructor reserves the right to verify the authenticity of the document provided by the students for makeup quizzes.

Plants on Campus (15) Over the 15-week period, students will take a photo each week of any plant on campus and try to identify that plant. Students will collect photos each week and post them in Carmen along with a brief description of the plant and its use. This will encourage collaboration amongst classmates as they work together to identify mystery plants. Posts should be your own original work. You are encouraged to engage with classmates on the pictures that each of you post, but no one else should revise or rewrite your work.

Aloe Vera Activity: (5) Why do plants go brown and die? How do you diagnose a plant problem? Developing diagnostic skills is one area of plant science that is very important. Looking for signs of disease, insect attack, or inadequate care can be challenging, but can also be rewarding. It's a lot like detective work! This assignment will guide you through a scenario & highlight a couple of diagnostic skills, using our senses (mainly sight, touch, and smell) to look for clues and make a diagnosis. The branching activity should be completed on your own.

Diversity in Plant Science (10) For this written assignment, I want you to do some research about people in the plant science industry who have made contributions, discoveries, scientific breakthroughs etc. and tell me about them. I want to see diversity among the people you pick.

Details:

- Do some research online to find a person in plant science who interests you. Ideas - plant explorer, scientist, grower, teacher, author etc.
- Scroll through your classmates' posts to make sure you do not pick the same person. I do not want duplicate posts. If there is a duplicate post, the student who posted first will get the grade and the 2nd poster will have to re-do.
- Post a picture, video or link to the person you have chosen, and tell me a little about them (1-2 paragraphs).

Your written assignment be your own original work. You should follow [MLA/APA] style to cite the ideas and words of your research sources. You are encouraged to ask a trusted person to proofread your assignments before you turn them in, but no one else should revise or rewrite your work.

Plant Genetics Video Critiques: (5) You will be asked to watch 2 videos in relation to plant genetics and answer questions on those videos in the Carmen discussion forum. Discussion posts should be your own original work. You are encouraged to ask a trusted person to proofread your posts before you turn them in, but no one else should revise or rewrite your work.

Packback Questions (20) This forum will be used as our main place to discuss topics and engage with each other. There will be a weekly **Sunday at 11.59pm** deadline for submissions. In order to receive your points per week, you should submit the following per each deadline period:

- 1 open-ended Question per week with a minimum Curiosity Score of 55, each worth 33.33% of each assignment grade

- 2 Responses per week with a minimum Curiosity Score of 55, each worth 66.67% of each assignment grade
- Half credit will be provided for questions and responses that do not meet the minimum curiosity score.

Packback discussion posts should be your own original work.

Self-Assessment: (5) At the end of the class, students are required to complete a self-assessment. This is a 250-word essay where students are asked to reflect upon their personal effort in the class and how well they worked with the class community. The self-assessment should be your own original work.

Student participation requirement

Your attendance and participation is essential for the success of this course. The following is a summary of everyone's expected participation:

- In Class Participation: Students are expected to attend in-person course lecture, tour sessions, and guest speaker events. Course material will be uploaded to Carmen for students to review.
- Excused Absences: Students are responsible for reaching out to the instructor in a timely manner, ideally 24 hours before the next class. The instructor understands that there are extenuating circumstances that pop up unexpectedly and will be dealt with on a case by case basis. Students are responsible for reaching out to the instructor either via email, phone, or text. An example of an excused absence: sickness, transportation difficulty, job/internship interview, family emergencies.

Late assignments

All assignments are due by 11:59pm on the designated due date. You can find the actual due dates in the Carmen website under the syllabus/assignment sections. There are no extensions of due dates without documented, extenuating circumstances subject to the approval of the instructor. All requests for extensions must be received by the instructor no less than 1 week prior to the due date; in the case of a documented emergency, you must contact the instructor within 24 hours to request an extension. Make-up quizzes are permitted with permission of instructor. Students must communicate with instructor to establish a day/time for make-up quiz.

GRADING SCALE

Letter Grade	%	Mastery
A	93.00–100.0	

A-	90.00–92.99	Demonstrates complete mastery of all learning outcomes as demonstrated on assessments; participates in all aspects of the lab in a positive and timely manner.
B+	87.00–89.99	Demonstrates mastery of at least two learning outcomes as demonstrated on assessments; participates in all aspects of the lab in a positive and timely manner.
B	83.00–86.99	
B-	80.00–82.99	
C+	77.00–79.99	Demonstrates mastery of at least one learning outcome as demonstrated on assessments; participates in some aspects of the lab in a positive and timely manner. A minimum grade of “C-“ will be earned by a student making a good faith effort on all aspects of the lab and demonstrated engagement.
C	73.00–76.99	
C-	70.00–72.99	
D+	67.00–69.99	Fails to meet mastery of any learning outcome such that student will not be successful in higher-level course; did not complete assessments; demonstrated lack of engagement, did not participate in lab, did not complete assessment in a timely fashion.
D	60.00–66.99	
E	00.00–59.99	

Faculty feedback and response time

I am providing the following list to give you an idea of my intended availability throughout the course. (Remember that you can call **614-688-HELP** at any time if you have a technical problem.) In general:

GRADING AND FEEDBACK

For large weekly assignments, you can generally expect feedback within **7 school days**. For exams, you can generally expect feedback within **2 weeks**.

E-MAIL

Email sent to sherratt.1@osu.edu will receive a reply within **24 hours on school days**.

DO

- Include a descriptive statement in the subject line.
- Use proper salutations when beginning an e-mail.
- Be concise in the body of the e-mail, use complete sentences and proper grammar.
- Use an appropriate closure at the end of each e-mail followed by your first and last name.
- If replying to an e-mail, reference the original e-mail and its content.
- Be selective of your choice of words. Emotions are difficult to convey in text and without the benefit of facial expressions your sentiment can be lost in the words you choose to write.

DON'T

- Use all capital letters; this conveys a tone of ANGER.
- Use e-mail as a format to criticize other individuals.
- Ask for your grade via e-mail. Grades will not be discussed by e-mail. If you need to discuss a graded item make an appointment to do so in my office.
- E-mail to inquire when grades will be posted. We will work toward submitting grades promptly, however, recognize that grading assignments and exams requires considerable time to ensure uniformity and fairness.
- Send an e-mail out of frustration or anger. Learn to save the e-mail as a draft and review at a later time when emotions are not directing the content.

DISCUSSION BOARD

The Carmen discussion section will be used for assignments and not as a primary means for asking questions. Students are encouraged to email questions to sherratt.1@osu.edu or call 614-292-7457.

OTHER COURSE POLICIES

Discussion and communication guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Writing style:** While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. A more conversational tone is fine for non-academic topics.
- **Tone and civility:** Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online.
- **Citing your sources:** When we have academic discussions, please cite your sources to back up what you say. (For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.)
- **Backing up your work:** Consider composing your academic posts in a word processor, where you can save your work, and then copying into the Carmen discussion.
- **For accessibility** – avoid using the colors red and green in presentations and coursework.

ACADEMIC INTEGRITY POLICY

Policies for this course

- **Quizzes:** You must complete the quizzes yourself, without any external help or communication. If you miss a quiz, you will receive a grade of zero. Make up quizzes

will be given only if the student has a legitimate reason for missing the quiz and it is discussed and approved by the instructor prior to the date of the quiz. If an emergency arises and the student misses a quiz, a note from a doctor, clergyman, etc. will need to be provided to schedule a makeup quiz. The instructor reserves the right to verify the authenticity of the document provided by the students for makeup quizzes.

- **Written assignments:** Your written assignments, including discussion posts, should be your own original work. In formal assignments, you should follow **[MLA/APA]** style to cite the ideas and words of your research sources. You are encouraged to ask a trusted person to proofread your assignments before you turn them in--but no one else should revise or rewrite your work.
- **Reusing past work:** In general, you are prohibited in university courses from turning in work from a past class to your current class, even if you modify it. If you want to build on past research or revisit a topic you've explored in previous courses, please discuss the situation with me.
- **Falsifying research or results:** All research you will conduct in this course is intended to be a learning experience; you should never feel tempted to make your results or your library research look more successful than it was.
- **Collaboration and informal peer-review:** The course may include opportunities for formal collaboration with your classmates. While study groups and peer-review of major written projects is encouraged, remember that comparing answers on a quiz or assignment is not permitted. If you're unsure about a particular situation, please feel free just to ask ahead of time.
- **Classroom Etiquette:** Interruptions from either unrelated idle conversation during class or from incoming cell phone calls are distracting to learning and inconsiderate to fellow classmates and the instructors. Please keep cell phones **OFF** or in **Etiquette Mode** during class. Exceptions will be granted only for extreme circumstances and with my prior consent.

OHIO STATE'S ACADEMIC INTEGRITY POLICY

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University's [Code of Student Conduct](#), and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the University, or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another

student, and possession of unauthorized materials during an examination. Ignorance of the University's *Code of Student Conduct* is never considered an excuse for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by University Rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the University's *Code of Student Conduct* (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the University.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- The Committee on Academic Misconduct web pages ([COAM Home](#))
- *Ten Suggestions for Preserving Academic Integrity* ([Ten Suggestions](#))
- *Eight Cardinal Rules of Academic Integrity* (www.northwestern.edu/uacc/8cards.htm)

UNIVERSITY RESOURCES

Advising

Students are encouraged to speak with their academic or major advising for scheduling issues, degree audit questions or other concerns. Academic advising models vary by department and major. Overview and contact information for advising services offered on main campus can be found at: <https://advising.osu.edu>

Student Services

Overview and contact information for student services (Buckeyelink) on main campus can be found at: <https://contactbuckeyelink.osu.edu> (formerly ssc.osu.edu)

Copyright disclaimer

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes

associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Intellectual Property (covered by copyright) includes Course materials (Text, Audio, Video, Multimedia, Sims, Apps, etc.), and Student Generated materials

Creating an environment free from harassment, discrimination, and sexual misconduct

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

1. Online reporting form at equity.osu.edu,
2. Call 614-247-5838 or TTY 614-688-8605,
3. Or Email equity@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

- All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.
- The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.

Diversity Statement

The Ohio State University affirms the importance and value of diversity of people and ideas. We believe in creating equitable research opportunities for all students and to providing programs and curricula that allow our students to understand critical societal challenges from diverse perspectives and aspire to use research to promote sustainable solutions for all. We are committed to maintaining an inclusive community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among all members; and encourages each individual to strive to reach their own potential. The Ohio State University does not discriminate on the basis of age, ancestry, color, disability, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, race, religion, sex, gender, sexual orientation, pregnancy, protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment.

To learn more about diversity, equity, and inclusion and for opportunities to get involved, please visit:

- <https://odi.osu.edu/>
- <https://odi.osu.edu/racial-justice-resources>
- <https://odi.osu.edu/focus-on-racial-justice>
- <http://mcc.osu.edu/>

In addition, this course adheres to The Principles of Community adopted by the College of Food, Agricultural, and Environmental Sciences. These principles are located on the Carmen site for this course; and can also be found at <https://go.osu.edu/principlesofcommunity>. For additional information on Diversity, Equity, and Inclusion in CFAES, contact the CFAES Office for Diversity, Equity, and Inclusion (<https://equityandinclusion.cfaes.ohio-state.edu/>). If you have been a victim of or a witness to a bias incident, you can report it online and anonymously (if you choose) at <https://studentlife.osu.edu/bias/report-a-bias-incident.aspx>.

Your Mental Health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life Counseling and Consultation Services (CCS) by visiting ccs.osu.edu or calling (614) 292- 5766. CCS is located

on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on-call counselor when CCS is closed at (614) 292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-(800)-273-TALK or at suicidepreventionlifeline.org

David Wirt, wirt.9@osu.edu, is the CFAES embedded mental health counselor. He is available for new consultations and to establish routine care. To schedule with David, please call 614-292-5766. Students should mention their affiliation with CFAES when setting up a phone screening.

Grievance Procedure

According to University Policies, if you have a problem with this class, you should seek to resolve the grievance concerning a grade or academic practice by speaking first with the instructor or professor. Then, if necessary, take your case to the department chairperson, college dean or associate dean, and to the provost, in that order. Specific procedures are outlined in Faculty Rule 3335-7-23. Grievances against graduate, research, and teaching assistants should be submitted first to the supervising instructor, then to the chairperson of the assistant's department.

ACCESSIBILITY ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Disability Accommodations

The university strives to make all learning experiences as accessible as possible. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's request process, managed by Student Life Disability Services. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let me know immediately so that we can privately discuss options.

To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your

accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

Accessibility of course technology

This online course requires use of Carmen (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.

- [Carmen \(Canvas\) accessibility](#)
- Streaming audio and video
- Synchronous course tools
- [Definition OSU](#)
- [Overview of Accessibility at OSU](#)
- If you require specific software for the course list or provide a link to the software's accessibility privacy statements
 - [Adobe Connect \(Carmen Connect\) Accessibility](#) [Adobe Privacy Policy](#)
 - [MediaSite Accessibility Statement](#)
 - [Microsoft Office Accessibility](#) [Microsoft Office 365 Privacy](#)

COURSE SCHEDULE (TENTATIVE)

	Topics	Assessments
1	Introduction to The World of Plants. The Scientific Method and Natural Science Literacy	Bonus 1: Who are you? Plants in My Life Post
2	Plant Origins, Classification and Use	Packback* Plants in My Life Post
3	Plant Origins, Classification and Use NPR: The Columbus Exchange Plants: The Good, the Bad and the Ugly	Diversity in Plant Science Plants in My Life Post

4	Plant: Climate Relations - Solar radiation & moisture	Quiz 1 Plants in My Life Post
5	Plant: Climate Relations - Temperature & air	Plants in My Life Post
6	Plant & Soils Interaction	Plants in My Life Post
7	Plant & Soils Interaction	Plants in My Life Post
8	Plant Structure, Growth & Development	Quiz 2 Plants in My Life Post
9	Plant Structure, Growth & Development	Plants in My Life Post
10	Plant Reproduction, Propagation and Genetics	Plants in My Life Post
11	Plant Reproduction, Propagation and Genetics	Video critiques Plants in My Life Post
12	Mineral Nutrition & Water	Quiz 3 Plants in My Life Post
13	Integrated Pest Management (IPM)	Bonus 2 Plants in My Life Post
14	Integrated Pest Management (IPM)	Plants in My Life Post
15	Wrap-up Turn in self-assessment	Aloe vera activity Plants in My Life Post
16	Final - Quiz 4	

*Packback requires weekly interaction (1 question and 2 responses per week, due Sunday at 11.59pm)

Application for GE Foundations, Natural Science: 4 credits

1. HCS 2200 - The World of Plants Lecture (3 credits)
2. HCS 2203 - Introduction to Plant Science Laboratory (1 credit)

A. Foundations

Please explain in 50-500 words why or how this course is introductory or foundational in the study of Natural Science.

HCS 2200 and HCS 2203 are taught by the Department of Horticulture and Crop Science (HCS). When taken together (HCS 2200 + HCS 2203) will fulfill 4 credits of the GE Foundations, Natural Science category. The World of Plants Lecture (HCS 2200) is a 3-credit course that is currently taught at Ohio State as a Natural Science, Biological Science GE course. Introduction to Plant Science Lab (HCS 2203) is a brand new 1-credit online laboratory. Both HCS 2200 and HCS 2203 follow a similar sequence in topics that introduce a wide breadth of study within this highly interdisciplinary field.

HCS 2200 will fulfill Natural Science Goals 1 and 2, and Expected Learning Outcomes (ELOs) 1.1, 1.2, 2.1, 2.2, and 2.3. HCS 2203 will fulfill Natural Science Goal 1 and ELO 1.3. When the 1-credit HCS 2203 laboratory is taken in combination with the 3-credit HCS 2202 lecture, together these 4-credits (i.e., 1-credit lab + 3-credit lecture) fulfills all Goals (i.e., Goals 1 and 2) and all ELOs (i.e., ELOs 1.1, 1.2, 1.3, 2.1, 2.2, 2.3) for the Foundations, Natural Science GE category.

HCS will offer HCS 2200 and HCS 2203 separately as a 3-credit lecture and 1-credit laboratory, rather than combining them together as a 4-credit course. We want to do this because (1) it will allow for greater flexibility for students when scheduling courses, (2) HCS 2203 will be offered exclusively online each semester, while HCS 2200 will be offered as both an in-person synchronous course Spring semester and an online asynchronous course each semester so that students can choose to take HCS 2200 in-person or online.

HCS 2200 and HCS 2203 will foster an understanding of the principles, theories, and methods of modern science, the relationship between science and technology, the implications of scientific discoveries and the potential of science and technology to address problems of the contemporary world. Students will develop a foundational knowledge and understanding of natural sciences to evaluate the economic, social and ethical implications of scientific discoveries and new found technologies. Students will learn that plant science is a multifaceted field of study,

which combines practices, technology, and methods from the biological sciences. Students will develop an understanding for the complex nature of plant ecosystems, how humans are part of and rely on these natural systems, the importance of plants and plant systems, and how different technology and methods can create new uses for plants. Developing scientific literacy skills to encourage life-long learning, will be emphasized throughout the course with high-impact readings, documentaries and the opportunity for students to practice and apply these skills through writing assignments and the creation and presentation of a scientific poster on contemporary topics in environmental science.

HCS 2200 and HCS 2203 will focus on similar topics and follow similar course designs. Course topics will be divided into 8 learning modules (see list below). One module will be taught approximately every two weeks of the semester. Course materials for HCS 2200 and HCS 2203 will be completely free to all students and consist of lecture slides, lecture presentations, lecture transcripts, closed-caption lecture videos, study guides, self-check quizzes, journal articles, book chapters, documentaries, software, technical reports, grading rubrics, and data sets. Course materials will be provided to students through Carmen, the Ohio State Libraries, academic, professional or government websites and online open-source textbooks. Course materials have gone through extensive testing and usage to ensure that they meet accessibility guidelines required by the Ohio State Digital Accessibility Policy. Students who receive accommodations through Student Life Disability Services will receive all required accommodations.

Course Modules for HCS 2200 and HCS 2203:

1. The Scientific Process and Natural Science Literacy
2. Plant Origins, Classification & Use
3. Plant:Climate Relations
4. Plant & Soil Interaction
5. Plant Structure, Growth & Development
6. Plant Reproduction, Proagation and Genetics
7. Mineral Nutrition & Water Requirements
8. Intergrated Pest Management (IPM)

B. Specific Goals for Natural Sciences

GOAL 1: Successful students will engage in theoretical and empirical study within the natural sciences, gaining an appreciation of the modern principles, theories, methods, and modes of inquiry used generally across the natural sciences.

GOAL 1 will be fulfilled in HCS 2200 (Lecture) and HCS 2203 (Laboratory)

Course Modules for HCS 2200 and HCS 2203:

1. The Scientific Process and Natural Science Literacy
2. Plant Origins, Classification & Use
3. Plant:Climate Relations
4. Plant & Soil Interaction
5. Plant Structure, Growth & Development
6. Plant Reproduction, Propagation and Genetics
7. Mineral Nutrition & Water Requirements
8. Integrated Pest Management (IPM)

Expected Learning Outcome 1.1: Successful students are able to explain basic facts, principles, theories and methods of modern natural sciences; describe and analyze the process of scientific inquiry. Please link this ELO to the course goals and topics and indicate specific activities/assignments through which it will be met. (50-700 words)

ELO 1.1 will be fulfilled in HCS 2200 (Lecture)

HCS 2200 - Quizzes (4 quizzes per semester, 10% each, 40% total): Students will complete a total of 4 quizzes each semester. Each exam will consist of 25 questions that focus on 3 weekly course modules. Quizzes will be completed using Carmen and open for 7 days to accommodate all students. Each exam will be unique and worth 10% of a student's Final Grade for HCS 2200. Students will have two attempts and we will keep the highest score between both attempts. Each attempt will contain new questions and answers. Exams will focus on readings, lecture slides and lecture presentations. Exams are open-book, however, students must complete the work on their own without help from peers.

HCS 2200 - Objectives of exams:

1. Evaluate student learning at the end of weekly course modules.
2. Assess reading comprehension, problem solving skills, critical thinking and vocabulary usage.
3. Assess understanding of key concepts principles, theories, and methods.

HCS 2200 - For each exam, students will be required to:

1. Answer multiple-choice, true/false, matching and fill-in-the-blank questions. These questions will be based on lecture slides and presentations given by the instructor.
2. Analyze and interpret data presented in figures, graphs and tables.
3. Use reasoning skills to solve problems using mathematics and statistics.
4. Make quantitative comparisons of data presented in graphs and tables.

Expected Learning Outcome 1.2: Successful students are able to identify how key events in the development of science contribute to the ongoing and changing nature of scientific knowledge and methods. Please link this ELO to the course goals and topics and indicate specific activities/assignments through which it will be met. (50-700 words)

ELO 1.2 will be fulfilled in HCS 2200 (Lecture)

HCS 2200 – Class Discussion (Packback Questions Discussion Forum, 20% total): This forum will be the course discussion platform, to discuss plant science topics relevant to the weekly module and for students to engage with each other. There will be a weekly Sunday at 11.59pm deadline for submissions. In order to receive full credit, students will submit 1 open-ended question per week with a minimum curiosity score of 55 (each worth 33.33% of each assignment grade) and 2 responses per week with a minimum curiosity score of 55 (each worth 66.67% of each assignment grade).

HCS 2200 - Objectives of Packback Questions Discussion Forum:

1. Understand how data is collected by scientists, why replication is important in experiments. Analyze the process of scientific inquiry, principles, theories and methods of natural science.
2. Critically evaluate and responsibly use information from the natural sciences. Analyze data using statistics.
3. Learn how our knowledge and understanding about a scientific discipline has changed over time through the generation of testable explanations and predictions, newfound knowledge, new techniques and new instrumentation.
4. Recognize social and ethical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.

HCS 2200 - For each discussion post, students will be required to:

1. Read articles, book chapters and/or technical reports provided by instructor on Carmen or Ohio State Libraries. Watch short documentaries or instructional videos.
2. Ask open-ended, relevant and topical questions each week, and answer questions submitted by their peers. Questions and answers will be based on the articles and book chapters students read, documentaries and instructional videos students watch and data that students collect and analyze.

Expected Learning Outcome 1.3: Successful students are able to employ the processes of science through exploration, discovery, and collaboration to interact directly with the natural world when feasible, using appropriate tools, models, and analysis of data.

Please explain the 1-credit hour equivalent experiential component included in the course: e.g., traditional lab, course-based research experiences, directed observations, or simulations. Please note that students are expected to analyze data and report on outcomes as part of this experiential component. *(50-1000 words)*

ELO 1.3 will be fulfilled in HCS 2203 (Laboratory)

HCS 2203 - Weekly Participation Activities (15 activities per semester, 1% each, 15% total):

Each student will complete a total of 15 weekly participation assignments this semester (1 activity per week), all of which will be submitted on Carmen. Each activity will be open for 7 days to accommodate all students. Each activity will be unique and worth 1% of the student's Final Grade for HCS 2203. These assignments are open-book, however, a student must complete the work on their own without help from peers. A student who demonstrates good faith effort on all aspects of the weekly participation activity and demonstrated engagement in the activity will receive full credit.

HCS 2203 - Objectives of weekly participation activities:

1. To introduce students to each week's lab through readings, instructions or activities.
2. To serve as a formal weekly check-in that promotes and encourages two-way communication between student and instructor.
3. To graph data or organize data in a table. How to calculate mean, standard deviation, range. To compare data between different scientific studies.

HCS 2203 - For each weekly participation activity, students will be required to:

1. Complete a small 15–20-minute task (e.g., graph data, identify unknown samples, construct a scientific table, analyze and/or interpret data) that will be paired with topics contained in weekly modules.

Laboratory Assignments & Quizzes (8, 6.25% each, 50% total): Each student will complete a total of 8 laboratory assignments over 8 labs during the semester, all of which will be submitted on Carmen and due on Sundays at 11:59PM. Each lab will be conducted over one-two weeks and comprise of two related laboratory assignments. For example, Lab Assignment 1 will pertain to the first lab on the Scientific Method (see course schedule below). Within the first lab assignment, students will collect and report data. Within the second lab assignment students will summarize and analyze class data collected in the first lab assignment. Each assignment will be unique and worth 6.25% of the Final Grade for the course. These assignments are open-book, however, students must complete the work on their own without help from peers. Assignments will be available on Carmen for 7 days to accommodate all students. Readings, data sets, and instructional videos that are required for laboratory assignments will all be free and provided through Carmen.

Objectives of laboratory assignments:

1. Describe common instruments, equipment, techniques and methods used by scientists to collect data. Learn about protocols, operation, benefits and limitations of each.
 - A. Use described methods to collect data and report standardized data to me and to your peer group.
 - B. Analyze consolidated peer group data through calculations (i.e., mean, p-value, standard deviation).
 - C. Summarize consolidated peer group data through visualizations (i.e., graphs, charts, tables).

Each laboratory assignment will consist of two parts:

1. Part 1 - Learn about the lab procedure and how scientists have used the technique or methods in the peer-reviewed literature. Execute the experiment and report standardized data to peer groups on Carmen. Create, analyze and interpret graphs and tables using Microsoft Word and Microsoft Excel.
2. Part 2 - Answer short-answer, multiple choice, matching pairs and T/F quiz questions. These quiz questions will be based on the data that you collect and analyze, and experiments that you conduct on your own at home. Some questions will require you to complete calculations, plot data, analyze tables, and describe procedures and experimental approaches.

HCS 2203 - Scientific Poster Assignments (5 assignments per semester, 4% each, 20% total): Students will complete a total of 5 scientific poster assignments this semester, all of which will be submitted on Carmen. Each assignment will be unique and worth 4% of a student's Final Grade for HCS 2203. These assignments are open-book, however, students must complete the work on their own without help from peers. An open textbook titled "Scientific Posters, A Learners Guide" will serve as a reference as students complete poster assignments: <https://ohiostate.pressbooks.pub/scientificposterguide/>. This textbook is free to all students.

HCS 2203 - Objectives of scientific poster assignments:

1. Locate primary source journal article using Web of Science, PubMed or another search engine.
2. Understand how journal articles are organized (e.g., abstract, introduction, results) and how to read an article, find information, interpret data and become proficient at reading and understanding figures, graphs and tables.
3. Become familiar with scientific writing and how to effectively communicate results, information, data, and technical material in a scholarly work (e.g., poster, journal article, technical report).
4. Conduct peer review and understand its importance to the scientific process.
5. Create scientific figure and tables. Write a caption for each figure and table.

HCS 2203 - Five scientific poster assignments that students will complete each semester:

1. Poster Assignment 1: Find, download and read 6 primary source journal articles using Ohio State University Libraries' free online resources (<https://library.osu.edu/>). These articles should all focus on the same topic and/or issue of a student's choice. Find, read or watch 4 secondary sources on this same topic and/or issue. Write a concise 200–300-word summary of the information found in sources.
2. Poster Assignment 2: Write a title, abstract and introduction section for scientific poster.
3. Poster Assignment 3: Use Microsoft PowerPoint and Excel to create a total of 4 figures and/or tables for poster. Figures can be charts, diagrams, graphs, illustrations, images, maps, photographs. Using data from journal articles, students will create at least 1 original graph and 1 original table for their poster.
4. Poster Assignment 4: Create a scientific poster using PowerPoint from a template that is provided by instructor. This poster will contain a title, author information, introduction, materials and methods, results, discussion, references, figures and tables.
5. Poster Assignment 5: Students will record a 5-minute poster presentation and upload the audio file and a PDF file of their poster to the Virtual Poster Event on Carmen. Students will conduct peer reviews for 2 of their classmates' poster presentations.

GOAL 2: Successful students will discern the relationship between the theoretical and applied sciences, while appreciating the implications of scientific discoveries and the potential impacts of science and technology.

GOAL 2 will be fulfilled in HCS 2200 (Lecture)

Course Modules for HCS 2200 and HCS 2203:

1. The Scientific Process and Natural Science Literacy
2. Plant Origins, Classification & Use
3. Plant:Climate Relations
4. Plant & Soil Interaction
5. Plant Structure, Growth & Development
6. Plant Reproduction, Propagation and Genetics
7. Mineral Nutrition & Water Requirements
8. Integrated Pest Management (IPM)

Expected Learning Outcome 2.1: Successful students are able to analyze the inter-dependence and potential impacts of scientific and technological developments. Please link this ELO to the course goals and topics and indicate specific activities/assignments through which it will be met. (50-700 words)

ELO 2.1 will be fulfilled in HCS 2200 (Lecture)

HCS 2200 - Quizzes (4 quizzes per semester, 10% each, 40% total): Students will complete a total of 4 quizzes each semester. Each exam will consist of 25 questions that focus on 3 weekly course modules. Quizzes will be completed using Carmen and open for 7 days to accommodate all students. Each exam will be unique and worth 10% of a student's Final Grade for HCS 2200. Students will have two attempts and we will keep the highest score between both attempts. Each attempt will contain new questions and answers. Exams will focus on readings, lecture slides and lecture presentations. Exams are open-book, however, students must complete the work on their own without help from peers.

HCS 2200 - Objectives of exams:

4. Evaluate student learning at the end of weekly course modules.
5. Assess reading comprehension, problem solving skills, critical thinking and vocabulary usage.
6. Assess understanding of key concepts principles, theories, and methods.

HCS 2200 - For each exam, students will be required to:

5. Answer multiple-choice, true/false, matching and fill-in-the-blank questions. These questions will be based on lecture slides and presentations given by the instructor.
6. Analyze and interpret data presented in figures, graphs and tables.
7. Use reasoning skills to solve problems using mathematics and statistics.
8. Make quantitative comparisons of data presented in graphs and tables.

Expected Learning Outcome 2.2: Successful students are able to evaluate social and ethical implications of natural scientific discoveries. Please link this ELO to the course goals and topics and indicate specific activities/assignments through which it will be met. (50-700 words)

ELO 2.2 will be fulfilled in HCS 2200 (Lecture)

HCS 2200 – Writing Assignments (4 assignments per semester, 30% total): Students will complete a total of 4 writing assignments each semester, all of which will be submitted on Carmen. Each assignment will be unique and worth from 5% to 15% of a student's Final Grade in HCS 2200. Assignments will be open on Carmen for 14 days to accommodate all students. Readings, data sets, documentaries that are required for writing assignments will all be free and provided through Carmen or links to these materials will be provided on Carmen. These assignments are open-book, however, a student must complete the work on their own without help from peers.

HCS 2200 - Objectives of writing assignments:

1. Locate primary source journal article using Web of Science, PubMed or another search engine. Understand how journal articles are organized (e.g., abstract, introduction, results) and how to read an article, find information, interpret data and become proficient at reading and understanding figures, graphs and tables.
2. To make informed decisions and develop potential solutions to environmental issues based on published scientific articles, results and data.
3. Develop skills and gain experience in plant identification and scientific writing, and how to effectively present data using pictures, figures and tables.
4. Gain an appreciation for how discoveries in natural science often requires collaboration between many scientists from many different specializations and from many different cultural backgrounds.

HCS 2200 - For each writing assignment, students will be required to:

1. Answer short-answer and essay-style questions. These questions will be based on readings, documentaries or data provided by academic or governmental institutions. Some questions will require students to use formulas and equations, complete calculations, calculate statistical values, plot data, produce tables, and describe procedures and experimental approaches.
2. Use reasoning skills to propose method, protocol or technique that could be utilized to solve an environmental problem.
3. Evaluate the economic, social and ethical implications of scientific discoveries and new technologies.

Expected Learning Outcome 2.3: Successful students are able to critically evaluate and responsibly use information from the natural sciences. Please link this ELO to the course goals and topics and indicate specific activities/assignments through which it will be met. (50-700 words)

ELO 2.3 will be fulfilled in HCS 2200 (Lecture)

HCS 2200 - Quizzes (5 quizzes per semester, 5% each, 25% total): Students will complete a total of 5 quizzes each semester, all of which will be completed using Carmen. Quizzes will be open for 7 days to accommodate all students. Each quiz will contain 10-20 questions that focuses on 1-2 weekly course modules. Students will have two attempts and we will keep the highest score between both attempts. Each attempt will contain new questions and answers. Each quiz will be unique and worth 5% of the Final Grade for HCS 2200. These quizzes are open-book, however, students must complete the work on their own without help from peers. Quizzes will focus on readings and course materials.

HCS 2200 - Objectives of quizzes:

1. Understand how data is collected by scientists, why replication is important in experiments. Analyze the process of scientific inquiry, principles, theories and methods of natural science.
2. Critically evaluate and responsibly use information from the natural sciences. Analyze data using statistics.
3. Learn how our knowledge and understanding about a scientific discipline has changed over time through the generation of testable explanations and predictions, newfound knowledge, new techniques and new instrumentation.
4. Recognize social and ethical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.

HCS 2200 - For each quiz, students will be required to:

1. Read articles, book chapters and/or technical reports provided by instructor on Carmen or Ohio State Libraries. Watch short documentaries or instructional videos. There will be no cost to the student, all readings and videos will be free.
2. Answer multiple-choice, true/false, matching and fill-in-the-blank questions. These questions will be based on the articles and book chapters that students read, documentaries and instructional videos that students watch and data that students collect and analyze.