

Intro to Plant Science

Course Syllabus

Fall 2023

AGRO 1110G and HORT 1115G



Course Description

Introduction to the physical, biological, and chemical principles underlying plant growth and development in managed ecosystems. In the laboratory portion of the class, students perform experiments demonstrating the principles covered in lecture. The course uses economic plants and agriculturally relevant ecosystems to demonstrate basic principles. Appropriate for non-science majors.



Why This Course Matters

Previous students who have completed this course have gained a newfound appreciation for the integration of plants in their everyday lives. Many of these students were initially unaware of the frequency with which they come into contact with plants. On the other hand, some students already possessed knowledge about the significance of plants through experiences such as visiting forests, cultivating vegetable gardens, enhancing their indoor and outdoor spaces, or establishing basement gardens. However, all students shared an eagerness to acquire additional resources and knowledge on these subjects.

Teaching this course is a constant source of learning for me as well. Each student brings a wealth of new knowledge, resulting in a cornucopia of insights that enrich my understanding. The course itself, along with the broader study of plant science, provides a solid foundation for comprehending our environment, presenting valuable career prospects, promoting personal well-being, satisfying intellectual curiosity, and fostering a sense of responsibility towards environmental stewardship.



Instructor

- Ryan Goss
- Email: please use Canvas Inbox messaging system on the left ribbon of this page.
- Office: N356 Skeen Hall
- Secondary Contacts: 575.646.3297 and my NMSU email <u>ryangoss@nmsu.edu</u> (https://mail.google.com/mail/?view=cm&fs=1&tf=1&to=ryangoss@nmsu.edu).

Teaching Assistants

Information will be forthcoming.

Dr. Goss' Office hours:

By appointment. Students can arrange an in-person or Zoom meeting through my online scheduler: 30-min

(https://outlook.office.com/bookwithme/user/32b6be5b3f6c4f4f9507524d59095b47@nmsu.edu/?getrequesturl=https%3a%2f%2foutlook.office.com%2fows%2fOID%3a9420dfcb-c70a-4834-a239-5b0d6810d356%40a3ec87a8-9fb8-4158-ba8f-

f11bace1ebaa%2fbeta%2fBookWithMe%2fCheckBookable%3fbookingcode%3d32d54d2d-7324-46e6-b823-

4b19b48fe5c8%26itemid%3dSVRwCe7HMUGxuT6WGxi68g2%26authtoken%3deyJhbGciOiJSUzl1NilsImtp 60hDtd5lA9K1rMAnZ-J0mDiC5s1LILnXF82sFCHmpNttdftpTWeMejKahGRzzMwK2Kx-

<u>0eBaCP6cDHh66JdWeftvv61nLQw9lzgvlBj4nb6Dlcb3U4sObXlS8_XqlopyFHJKlRe6XQH-</u>

T 1424y1YHUzB7U2A4D 9-

<u>f0glFACoXoeTpU2lqEGEJYZFrW_ls7Ox_1UBnEyLOAmsENVg53RdpBZgKSQaJwM6fl7OosYf2Xcus7P7R4</u> or <u>60-min</u>

(https://outlook.office.com/bookwithme/user/32b6be5b3f6c4f4f9507524d59095b47@nmsu.edu/?getrequesturl=https%3a%2f%2foutlook.office.com%2fows%2fOID%3a9420dfcb-c70a-4834-a239-5b0d6810d356%40a3ec87a8-9fb8-4158-ba8f-

f11bace1ebaa%2fbeta%2fBookWithMe%2fCheckBookable%3fbookingcode%3dc7712358-d8d5-4723-9bc9-

2263071ac521%26itemid%3dFufBIFkP3k6RulAokqfbWw2%26authtoken%3deyJhbGciOiJSUzl1NilsImtpZC

t_lz7TmmLdPHLb58Z1X60DVoXrZBHBchLnBUM_6s1PAl64vJ_E834Z2GXK5wShenSS7fCsD6XJyM9Ki40F4fEPumwXfrQPdR9w_Z3UTjp9ZqJtJ_a7ZRy6O12NIEd-

D0Tz9t_fc5uzJwW3LmkTnl3na5JFDOqi8uFxLSE6ySQRP30hGR5JEEo_UgMTe8JfxRzcFrmD0nPXIMOZDO(

Messaging

I will respond to your message prior to the end of the next business day (MDT). Please use the Canvas messaging system whenever possible, as these messages work best. I may not have regular access to my other emails; these should be avoided as I will not promptly respond. To access the Canvas messaging system, begin by clicking the 'INBOX' link at left ribbon of this page.

Instructor Announcements

I will send urgent and regular communication to all students using the Announcements tool in Canvas. It is a requirement in this class that you set your New Announcements in Notifications to "Right Away" to ensure that you receive any announcements. (Go to Profile>Notifications, find for new announcements and set to Right Away).



Course Objectives

Do you want to know what you will learn in this course and the foundational objectives that I used to create the course? Go to **Course Objectives**.



My Thoughts on Your Learning

I have unwavering belief in each and every one of you, and I am confident in your ability to succeed in this course. To thrive in this class, you will embark on a journey of acquiring new knowledge in the field of plant sciences and apply that knowledge through a range of engaging assignments, including both prescribed tasks and choose-your-own-adventure opportunities. We will explore these captivating course topics through various activities and enlightening lectures.

During our classroom sessions, you can expect to encounter a plant or plant-related component relevant to our discussions on a daily basis. Furthermore, I warmly encourage you to bring your own plant or plant-related item, as it will provide an excellent opportunity for us to engage in discussions and delve deeper into the subject matter.

When it comes to grading, 80% of your final grade will be based on three exams, weekly quizzes, a paper, and your laboratory assignments. The remaining portion of your points will be earned through participation in a diverse array of Plant Fun assignments. These Plant Fun assignments aim to introduce you to fascinating aspects of plant science that align with your personal interests, serving as a gateway to a new realm of exploration. You have the autonomy to choose what you want to learn and explore. I will provide a list of suggested opportunities, or you can propose your own ideas for my consideration.

Remember, this course is designed to empower you and foster a love for plant science. Together, we will cultivate a dynamic learning environment where you can flourish and take charge of your educational journey.



Textbook & Reading Materials

Boundless Biology (open source textbook; FREE) found at https://courses.lumenlearning.com/boundless-biology/

Khan Academy: Biology Sections (https://www.khanacademy.org/science/biology)

Other web-based, free readings will be assigned throughout the semester.



Reason for Course Policies

One of my primary goals is to equip every student with essential professional development skills that will benefit their future careers beyond their time at New Mexico State University. To achieve this, I am dedicated to clearly outlining the rules and expectations of the course, as detailed in this syllabus. Although this is a rather lengthy document, you should be able to answer most non-content, course questions by reviewing this syllabus. I apologies for the length though.

In previous semesters, I have encountered a few instances involving students that I believe can impact their future success. These areas include: 1) understanding and avoiding plagiarism, 2)

meeting assignment deadlines, and 3) practicing appropriate classroom etiquette and netiquette.

In order to foster a better understanding of these expectations, we will dedicate time to discussing these topics. Additionally, I will provide required materials on the Canvas platform to support your comprehension. Once we have covered these subjects, you will be asked to sign pledges affirming your commitment to avoiding plagiarism, meeting assignment deadlines, and treating all individuals with kindness and respect throughout the duration of this course. These measures are intended to set you up for success and enhance your overall learning experience.



Delivery Methods

Do you want to know how this course will be presented to you and where your laboratory sections meet? Go to Delivery Method



Grading Policy

Want to know more about how your grade will be calculated? Or how you will receive feedback from your assignments? Maybe you want to know more about these crazy, "Plant Fun" assignments? Then you need to go to the **Course Grading Policies** page.



Canvas Information

Canvas is the where course content, grades, and communication will reside for this course.

- nmsu.instructure.com
- For Canvas, Passwords, or any other computer-related technical support contact:
 - NMSU Help Desk at 575-646-1840 or help@nmsu.edu (https://mail.google.com/mail/?
 view=cm&fs=1&tf=1&to=help@nmsu.edu

NMSU Student Technology Advisor at 575-646-4857 or ict_st@nmsu.edu
 (https://mail.google.com/mail/?view=cm&fs=1&tf=1&to=ict_st@nmsu.edu) for assistance with Canvas.



Assignment Submission

Please submit all assignments through Canvas assignment submission location. I will not accept assignments sent to my email address. Late assignments will not be accepted. Once I receive your assignment, you will receive a Canvas message or assignment comment indicating I have received your assignment, usually within 24 hours. If you do not receive a confirmation message after 48 hours, then you should consider the assignment "lost" and you reach out to me or your TA. If you have questions or concerns, please arrange for a meeting as described in the "Contact Information" section above.



Tentative Course Schedule

Do you want to know what we will (attempt to) cover in the course over the semester in lecture and lab? Go to the **Tentative Course Schedule**.



Course Expectations

More information about the general expectations of this course including access to technology and necessary skills is available at the <u>Course Expectations</u> page.

In addition, the **Technology Requirements** for this course are described on a second page.



Plagiarism

Academic misconduct including plagiarism will not be tolerated in the Plant and Environmental Sciences Department. The Department follows the policies and procedures pertaining to academic misconduct and plagiarism found in the NMSU Student Code of Conduct available online at https://arp.nmsu.edu/5-20/ (https://arp.nmsu.edu/5-20/)

More of my thoughts on plagiarism and how it plays a role in this course is found here.

Academic Misconduct Class Policy:

What is **Academic Misconduct**

(https://studentlife.nmsu.edu/academic_integrity/academic_misconduct.html)?



NMSU Student Resources and Policies

Please visit https://provost.nmsu.edu/faculty-and-staff-resources/syllabus/policies.html) for university policies and student services, including Discrimination and Disability Accommodation, academic misconduct, student services, final exam schedule, grading policies and more



Syllabus Modifications Statement

Instructor can modify syllabus at any point in the semester. Deadlines changes will be given at least 5 business-days notice. Substantive changes to the syllabus will be announced through Canvas Announcements.

Course Summary:

Date	Details	Due
Wed Aug 25, 2021	Syllabus Quiz (https://nmsu.instructure.com/courses/1564485/assignments/14296394)	30pm

Course Objectives



Course Objectives

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

- 1. Describe the role plants play in everyday lives
- 2. Distinguish the career opportunities in plant and soil sciences, and related fields
- 3. Demonstrate plant science concepts of plant structure and anatomy
- 4. Discover the wide variety of plants cultivated throughout the world to further demonstrate plant science concepts.
- 5. Break down how plants work (growth, reproduction, physiology, and soil)
- 6. Characterize how plants are manipulated to feed, clothe and entertain the world



General Education (Science) Objectives

- Describe the process of scientific inquiry.
- Solve problems scientifically.
- Communicate scientific information.
- Apply quantitative analysis to scientific problems.
- Apply scientific thinking to real world problems.



Return to Syllabus

Intro Plants

Delivery Method



Delivery Method

This course is offered as a face-to-face course with some material and assignments housed in the Canvas course. Introduction to Plant Science is designed as a course driven by six sections based on the course learning objectives. Learning materials are available to you through the textbook, in-class lectures, weekly laboratories and additional online content. Most lecture quizzes and exams will be available only online through Canvas.

Lectures will occur Mondays and Wednesdays in person noon to 1:15p. You are expected to attend every lecture. Attendance may be taken and opportunities to earn course points will occur frequently in lecture.

Laboratory attendance is **mandatory** within your registered laboratory section. The lab portion of this course is one of the major reasons you are receiving general education science credit for this course. You start with one "free" unexcused absence from lab. If you are more than 5 minutes late to laboratory, you are also considered absent but may earn the points for laboratory assignments. If you miss more than two or more laboratory class and/or are more than 5 minutes late to lab you will not be eligible for extra credit in this course. If you miss three or more laboratory classes and/or are more than 5 minutes late to lab will not receive any of the 250 available laboratory points (Max grade is then 75%).

Laboratory sections are:

- Tuesdays 10:30-13:00 (M1A) in Skeen W129
- Tuesdays 13:30-16:00 (M1B) in Skeen W139
- Wednesdays 13:30-16:00 (M1C) in Skeen W139
- Thursdays 13:30-16:00 (M1D) in Skeen W129

You will be expected to meet with the instructor and other students in the course through the online and classroom environments. You are expected to visit the course site before every lecture to complete a quiz and learn other materials. Deadlines for course assignments, quizzes, exams, and group discussions will occur throughout the semester. You will need to commit time and effort through self-discipline to be successful. If you have concerns about the

amount of work required for this course, I would recommend contacting your advisor or me immediately to consider other course options.



Return to Syllabus

Course Grading Policies



Your Earned Grade

Grades will be based on quality of work and continued participation in the course work. The lecture portion of the course will comprise 75% of your grade. The laboratory section will comprise 25% of your grade. Make-up work will not be allowed except under documented extenuating circumstances (e.g., death in the family, major illness). No plus/minus grades will be given.

- A (4.0) > 90% > 900 points
- B (3.0) = 80-89.9% = 800-899 points
- C(2.0) = 70-79.9% = 700-799 points
- D (1.0) = 60-69.9% = 600-699 points
- F (0.0) < 60% < 600 points

Breakdown of Grading Scheme and Available Points.

Graded Lecture Items	550 points possible
Exam I (Fri Sep 15 - Online)	100 points
Exam II (Fri Oct 20 - Online)	100 points
Comprehensive Final Exam (Online Finals Week or Dec 06 at 10:30a)	150 points
Plant Topics Paper	100 points
Online Quizzes (highest 20 quiz scores)	100 points
Graded Laboratory Items (Three or more absences and/or tardiness will result in no	250 points possible

Grade Based on	1000 points
Total Points Available	1200 points
Extra Credit by Additional Plant Fun Assignments (Requires laboratory attendance with no more than one (1) unexcused absence or tardiness allowed).	up to 200 additional points allowed
Plant Fun Assignments (More information listed below)	200 points possible
laboratory points for the course. See TA and Laboratory Syllabus for more info)	

Grading and Feedback

All assignments will be graded within 1-week of submission under most situations. Lecture Quizzes will be released on Canvas after lecture and will close at the start of the next lecture period. Rubrics will be used to grade open-ended assignments such as papers and video presentations. Rubrics are attached to each Canvas assignment. The Rubric can serve as an excellent guide for you before you submit your assignment.

Grade Calculation

Students' grades will be calculated based on points earned out of a total of 1000 points. All points in the course have equal value. 80% of a student's grade is determined based on graded assignments including lecture exams, research paper, quizzes and laboratory assignments. 20% of a student grade is determined from earned "Plant Fun" choose-your-own-plant-adventure points.

Plant Fun Assignments

Plant Fun assignments are choose-your-own-adventure assignments designed to give students flexibility in their learning experience and reduce the impact of a poor performance on exams. These Plant Fun assignments allow students to pick and choose from a long list of possible assignments to complete. Assignments range from attending student club meetings to creating plant related videos. Every Plant Fun assignment requires a hard copy or electronic submission. Allow at least 8 business days for review of Plant Fun Assignments for grading.

Plant Fun Assignment points earned will add to a student's overall course point total. In addition, eligible students can earn up to 200 extra credit points by completing more than the

required 200 Plant Fun points. Students become eligible for extra credit if they fulfill the requirements for the laboratory section including mandatory attendance. Plant Fun assignments are graded complete/not-complete and must be submitted on or before 4:00 pm on November 19. No late Plant Fun assignments will be accepted. Plant Fun Assignments are complete if they are at least 92% complete based on each individual assignment criteria. If they are considered not complete, students may resubmit new assignments prior to the November 17 deadline. Any Plant Fun assignment turned in after November 10 cannot be resubmitted if considered not complete. Students should be creative with Plant Fun assignments and you are encouraged to create a new Plant Fun assignment idea based on your interests. Most assignments allow students to only receive Plant Fun points for one submission with a few exceptions.

For the "You Call It" Plant Fun items, student must meet with Dr. Goss to get prior approval and to determine point value. An assignment contract will be signed by both parties. Only after a signed contract is accepted should a student begin the work.

Plant Fun Assignments

Examples of Plant Fun Assignments

<u></u>		
Attend a student club meeting in Plant & Environmental Sciences (Hort Forum,		
OASIS, Turf Club, ESSO, others with	10 points each, max 60 points	
prior approval)		
Meet with Dr. Goss (Before Oct 06,	20 points	
Student must make an appointment)	20 points	
Plant Topic Paper: Topic Submission (By Oct 06 4pm)	10 points	
Wikipedia Quest	35 points	
Neighborhood Plant Swap	30 points	
Strange Plants	15 points	
Great Debates Pre-debate Facts (due 1 week before debate)	20 points	
Plant Jeopardy (I, II and Final)	15-50 points each	
Plant Person Interview & Write-up	35 points each, max 70 points	
Fun and Funny Plant Music Video	50-75 points, depending on creativity and effort	
Plant Journal (minimum 20 entries)	20 points	

Photo Plant Journal or Photo Collage with Write-Up (minimum 20 entries)	40 points
"You Call It" (preapproved, BE CREATIVE!)	Goss pre-determines point value

Six-Week Early Performance Grades

A Six-Week Early Performance Grade for this course will be posted. You will be able to access your grade through your MY.NMSU.EDU under the Student Tab: Click on Student Record / Midterm Grades. In this class the Six-Week Early Performance Grade will reflect your performance on only a portion of the total graded work in this course. If you are doing well, congratulations on your success – but be mindful that there is still a significant portion of the graded work yet to be completed. If you are doing poorly, or not as well as you would like, please meet with me to discuss how you can improve. If you have concerns about your progress in multiple courses and need to consider a schedule change, meet with your academic advisor.

Final Exam

Final Exam for this course is scheduled Friday December 06 at 10:30am. The Final Exam will also be available online during Finals Week. All students should expect to be available to take the exam at the scheduled time period. Final Exam will be cover all material from the course.

Assignment Feedback

Individual feedback on submitted assignments will be provided at the time of grading using Document Annotation tool and Assignment Comments. Here is information on how to access this feedback:

- Access Document Annotation
 ☐→ (https://community.canvaslms.com/docs/DOC-10542-4212352349)
- <u>See Assignments Comments</u> <u>□ (https://community.canvaslms.com/t5/Student-Guide/How-do-I-view-assignment-comments-from-my-instructor/ta-p/283)</u>



Return to Syllabus

Intro Plants

Tentative Course Schedule



What I Hope We Will Cover This Semester

Lecture Topics will include:

- · What is a Plant?
- Daily Contact with Plants
- Science Defined
- Plant Science Degrees
- · Careers in Plant Science
- Plant Leaves
- Plant Flowers
- Plant Fruits
- Plant Roots
- Plant Cells
- Plant Sexual Reproduction
- Plant Asexual Reproduction
- Agricultural Plants
- Horticultural Plants
- Plant Growth
- Photosynthesis
- Light and Temperature
- Plant Respiration
- · Transpiration and Water Use
- Irrigation
- Soil
- Fertility
- Pest Management
- Sustainable Ag and Horticulture
- GMO's
- Alternative Pest Management

Lab Topics will include:

- Orientation and Walking Tour
- Hoop House Planting
- Library Tour and Plagiarism Prevention
- Plant Structure and Seeds
- Plant Flowers
- Plant Sexual Reproduction
- Plant Asexual Reproduction and Vegetative Establishment
- Organic Tour
- Valley Tour
- Measuring Plant Growth and Process
- Post-Harvest Physiology
- Transpiration
- Media, Soils and Drainage
- DNA



Return to Syllabus

Intro Plants

Your and My Expectations for the Course



What I Hope We Will Cover This Semester

General Expectations

- You are required to follow the course schedule outlined in the syllabus and meet the
 deadlines as listed. Any modifications in dates for assignments will be made at least five
 days in advance.
- Make-up quizzes or any other assignment will not be given except family/health emergencies with appropriate documentation.
- Absences for NMSU sponsored activities will also require a letter from the advisor.
- You can and should use technology (cell phones, computers, GroupMe, ChatGPT, etc.) to enhance your learning in this course. However, the only technology permitted for use during exams is your brain (unless otherwise stated).
- You would also benefit from exposure to plants. Student knowledge should include, but is not limited to,
 - 1. math skills including unit conversion and area calculations,
 - 2. professional writing skills and the ability to formulate an argument/rebuttal paper,
 - 3. computer skills effective enough to navigate an online course in Canvas, submit assignments with attachments, take online quizzes, create word documents and presentations, watch online videos, review documents online, and
 - 4. functional use of webcams, digital cameras, and other basic video or audio recording devices.

Required Technical Skills

You will need certain technical skills to complete the course.

- You will need to be familiar and comfortable working in the Canvas learning environment.
 You will need to complete online quizzes, submit assignments online, and conduct online discussions.
- You may need to use Zoom or other teleconferencing app to have virtual meetings with your fellow classmates and me.

- You may need to view, create, and upload mp4 videos using YouTube videos.
- You may need to be able to create recordings of presentations to share with your fellow students. Presentations can be created through Microsoft Office Stream feature in conjunction with Microsoft PowerPoint, OR you may record yourself using a camera or smartphone and YouTube.
- You will need basic photography skills and a digital camera. Most smartphones are okay to
 use as long as you are able to upload your videos in Canvas.
- If you are having any difficulty with the technology that cannot be addressed in the Canvas help or Canvas student guides, please contact me directly as soon as possible.
- You should have a stable, reliable internet connection and functional computer to accomplish the above tasks.

Online Preparation

Although most of the course is face-to-face, most of the quizzes and some supporting material will be online. Online courses require a different set of skills, learning techniques and increased self-discipline compared to face-to-face courses. In order to self-assess the appropriateness of distance education for you, I recommend using the various How to Tell if Online Education is for You? websites to determine your online readiness.

Netiquette

Please be considerate with all correspondences within this course including to the instructor and fellow students. Do not personally attack someone in your correspondence. Please avoid misunderstandings by clearly explaining yourself and making your intentions clear. Words without tone and facial expressions can often lead to misunderstandings when communicating through writing. Therefore, you should be diligent in every email, message, discussion and contact with all individuals in this course. I will apply these same standards to my interactions with each of you.

Multiple Submissions

You are not permitted to submit multiple submissions of any assignment unless given permission by the instructor.

Late Work

No late submissions will be considered.

Incomplete Grades

Incomplete grades will not be offered except for extraordinary circumstances beyond the student's control and that developed after the last day to withdraw from the course. If incomplete was approved by the instructor, students have no more than one semester to complete the assignments.

Class Withdraws

It is the student's responsibility to know important academic dates. Students must withdraw from a course under NMSU Policy.



Return to Syllabus

Intro Plants

What Kind of Technology Will You Need?



Technology Requirements

Computer Hardware & Software

- Access to a Windows or Macintosh desktop computer or laptop with internet access, sound, and speakers.
- Canvas Learning Management System

 - Canvas student FAQ. → (https://learning.nmsu.edu/canvas-faq-for-students/)
- Adobe Reader.
 — (https://get.adobe.com/reader/) (for reading PDF files)
- Adobe Connect built into Canvas. No download needed.
- Digital Camera or smartphone that can record images and videos
- Screencast-o-matic or PowerPoint Software to convert presentations to videos.
- A ChatGPT (https://chat.openai.com/) Account and computer with access to the format.

Web Browsers

Use only the latest version of Google Chrome or Mozilla Firefox for Canvas. Safari, Internet Explorer, and Microsoft Edge have known issues that can interfere with performing basic tasks within Canvas. The links to download the recommended browsers as well as instructions on how to ensure you have the latest version are listed below:

- Download Google Chrome.
 ☐→ (https://www.google.com/chrome/?
 brand=CHBD&gclid=EAlalQobChMl7brQ2_2Q4QlVfh6tBh1g6glsEAAYASAAEgLU4PD_BwE&gclscr=aw.ds)
- Download Mozilla Firefox. ⇒ (https://www.mozilla.org/en-US/firefox/new/)
- How to update Mozilla Firefox.
 ⇒ (https://support.mozilla.org/en-US/kb/update-firefox-latest-version)

Canvas does not fully support mobile devices; while there is a free Canvas mobile app available through iTunes store, a lot of functionality is unavailable when using a mobile phone.

When you take this course, it is assumed you have access to a computer or laptop for full access to functionality in this course.



Return to Syllabus