



Master Course Syllabus

For additional course information, including prerequisites, corequisites, and course fees, please refer to the Catalog: <https://catalog.uvu.edu/>

Semester: Spring 2025

Year: 2025

Course Prefix: BOT

Course and Section #: 2400-X01

Course Title: Plant Kingdom

Credits: 4

Course Description

Surveys of the Divisions (Phyla) traditionally studied by botanists, emphasizing structure, reproduction, systematics, and evolution. Completers should be familiar with the morphological features of the major prokaryotic, fungal, algal, and plant groups. Includes a weekly laboratory.

Course Attributes

This course has the following attributes:

- General Education Requirements
- Global/Intercultural Graduation Requirements
- Writing Enriched Graduation Requirements
- Discipline Core Requirements in Program
- Elective Core Requirements in Program
- Open Elective

Other: *Click here to enter text.*

Instructor Information

Instructor Name: Yu-Ya Liang

Student Learning Outcomes

1. Describe the processes of meiosis and mitosis;
 2. Describe how plants are named and classified;
 3. List the distinguishing attributes of the major plant groups and name some representatives of each;
 4. Discuss evolutionary trends in the morphological and reproductive attributes of members of the plant kingdom;
 5. Explain "alternation of generations" and how it occurs in each of the major plant groups;
 6. Explain sexual reproduction in flowering plants in detail;
 7. Explain the process of natural selection and how it accounts for the evolution of living organisms;
 8. Describe a general phylogeny of the plant kingdom.
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Course Materials and Texts

A photographic Atlas for the Botany Laboratory (7th edition), Rushforth, Robbins, Crawley, and Van Dr Graaff

- This is an excellent book providing great photos and illustrations that provide detail for many of the concepts we will be going over during the semester. If you are a botany major this would be a recommended text for your bookshelf (an older edition is perfectly fine and more affordable).

Seed to Seed; the Secret Life of Plants, Nicholas Harberd

- This book follows a botanist as he tries to re-align his research by taking inspiration from a wild growing plant. This book will aid in both writing your own journal about your plants you will grow as well as help on various quiz and exam questions.

Plant Growing Kit

All supplies except for plastic bottles will be given to grow spinach, Daikon radish, and morning glory. This includes soil, seeds, and fertilizer. Students will need to find a suitable place to grow these plants at home. Make sure to pay close attention to the introduction video for growing these plants as growing and monitoring the plants are a key component of the course.

Course Requirements

Course Assignments, Assessments, and Grading Policy

Assignments as percentage of overall grade:

Plant Exploration Portfolio.....	30%
Lecture & Lab Assignments.....	30%
Life of a Plant Journal.....	20%
Exams & Quizzes.....	15%
Professional Points.....	5%

Plant Exploration Portfolio (30%)

Students will be given a range of different assignments to complete at regular intervals throughout the semester. These will not carry any grade, I only expect students to turn in assignments regularly (as scheduled), respond to my feedback and re-submit these assignments, and put forth an effort that demonstrates an investment in learning. At the end of the semester a self-reflection on these assignments will be used for grading.

Lecture & Lab Assignments (30%)

Lectures and labs will have occasional assignments that will ask you to write short responses, respond using a discussion board, or complete an activity. All work assigned for a week will be due Sunday night before the start of the next weeks module. You should do your best and always make sure to submit something.

Lab assignments will mostly entail activities that may take more than one day to complete. Make sure you look ahead at what is due so you can complete the assignment. Many of these assignments will ask you to find plants, collect data, or investigate a specific question. Please be in contact with me, ahead of due dates, if you are not sure what I am asking or if you have any barriers to completing the assignment.

Life of a Plant Journal (20%)

Students will be expected to keep a journal as they grow several plants at home. Students will need to make several entries a week that discuss what is biologically happening with their plants and what the plants are doing toward finishing their life cycle. These should also have a comparison of the plants

from the book “Seed to Seed” and responses to a weekly journal prompt. Journals will be turned in for regular check ins.

Exams and Quizzes (15%)

There will be 4 exams throughout the semester. The final exam will be cumulative.

Exams are all open notes. Please limit this to only the notes you have taken during the course. Exams will include some fill in the blank, multiple choice, etc... but will be mostly essay questions asking you to synthesis information.

Each weekly module will end with a quiz. This quiz will focus heavily on the video lectures and labs from that week. These quizzes will be short and low risk but must be completed to open the next weeks module.

Professional Points (5%)

Being a good botanist, biologist, and/or citizen of the planet means working hard with an understanding for the care of those around us. Because these skills are essential to our lives, I will consider these aspects of course work as professional points. Students should communicate regularly and professionally with me and their peers. This includes simple things such as communicating in a professional tone, asking good questions when appropriate, submitting assignments that have had thought put in them, and approaching the course with an open mind. These points will also reflect the tone you take with other students in the class, particularly in discussions. All students will receive the entire points and they will be deducted at my discretion.

Required or Recommended Reading Assignments

Most readings will come from book *Seed to Seed* and the *A photographic Atlas for the Botany Laboratory*.

General Description of the Subject Matter of Each Lecture or Discussion

Module 1: Introduction to Botany and Photosynthetic Life

- Overview of plant biology, botany as a field, and the diversity of photosynthetic organisms, including cyanobacteria and non-plant photosynthetic eukaryotes.

Module 2: Fungi and Plant-Fungal Interactions

- Exploration of fungal morphology, diversity, and their ecological roles, including fungi used in human consumption and their interactions with plants.

Module 3: Algae – Diversity and Uses

- Introduction to brown and green algae, their role in ecosystems, and human applications such as food and industry.

Module 4: Bryophytes and Early Land Plants

- Examination of non-vascular plants like mosses and liverworts, their adaptations, and their role in early plant evolution.

Module 5: Lycophytes and the Evolution of Vascular Plants

- Study of lycophytes, their significance in fossil fuel formation, and lignin’s impact on plant evolution.

Module 6: Ferns and Horsetails

- Understanding fern life cycles, their reproductive strategies, and their ecological roles.

Module 7: Gymnosperms – Cycads, Ginkgo, and Conifers

- Exploration of gymnosperms, their evolutionary history, and their ecological and economic importance.

Module 8: Angiosperms – Evolution and Diversity

- Study of flowering plants, their evolutionary significance, and classification into ANA, monocots, and dicots.

Module 9: Plants and Human Society

- Examination of how plants impact human life, including food, medicine, and ecological benefits.

Assessments & Final Reflections

- Students will complete plant portfolios, journals, discussions, and exams to reflect on their learning and plant interactions.

Required Course Syllabus Statements

Generative AI

*obtained from UVU OTL and Dr. Hilary Hungerford.

AI programs are not a replacement for your human creativity, originality, and critical thinking. Writing, thinking, and researching are crafts that you must develop over time to develop your own individual voice. At the same time, you should learn how to use AI and in what instances AI can be helpful to you. The use of generative AI tools (e.g. ChatGPT, Google Bard, etc.) is permitted in this course for the following activities:

- Brainstorming and refining your ideas;
- Fine tuning your research questions;
- Finding information on your topic;
- Drafting an outline to organize your thoughts; and
- Checking grammar and style.

The use of generative AI tools is not permitted in this course for the following activities:

- Impersonating you in classroom contexts, such as by using the tool to compose discussion board prompts/responses assigned to you or content that you put into a Teams/Canvas chat.
- Completing group work that your group has assigned to you, unless it is mutually agreed upon that you may utilize the tool.
- Writing a draft of a writing assignment.
- Writing entire sentences, paragraphs or papers to complete class assignments.

You are responsible for the information you submit based on an AI query (for instance, that it does not violate intellectual property laws, or contain misinformation or unethical content). Your use of AI tools must be properly documented and cited in order to stay within university policies on academic honesty. Any student work submitted using AI tools should clearly indicate what work is the student's work and what part is generated by the AI. In such cases, no more than 25% of the student work should be generated by AI. If any part of this is confusing or uncertain, please reach out to me for a conversation before submitting your work.

Using Remote Testing Software

This course does not use remote testing software.

This course uses remote testing software. Remote test-takers may choose their remote testing locations. Please note, however, that the testing software used for this may conduct a brief scan of

remote test-takers' immediate surroundings, may require use of a webcam while taking an exam, may require the microphone be on while taking an exam, or may require other practices to confirm academic honesty. Test-takers therefore shall have no expectation of privacy in their test-taking location during, or immediately preceding, remote testing. If a student strongly objects to using test-taking software, the student should contact the instructor at the beginning of the semester to determine whether alternative testing arrangements are feasible. Alternatives are not guaranteed.

Required University Syllabus Statements

Accommodations/Students with Disabilities

Students needing accommodations due to a permanent or temporary disability, pregnancy or pregnancy-related conditions may contact UVU [Accessibility Services](#) at accessibilityservices@uvu.edu or 801-863-8747.

Accessibility Services is located on the Orem Campus in BA 110.

Deaf/Hard of Hearing students requesting ASL interpreters or transcribers can contact Accessibility Services to set up accommodations. Deaf/Hard of Hearing services can be contacted at DHHservices@uvu.edu

DHH is located on the Orem Campus in BA 112.

Academic Integrity

At Utah Valley University, faculty and students operate in an atmosphere of mutual trust. Maintaining an atmosphere of academic integrity allows for free exchange of ideas and enables all members of the community to achieve their highest potential. Our goal is to foster an intellectual atmosphere that produces scholars of integrity and imaginative thought. In all academic work, the ideas and contributions of others must be appropriately acknowledged and UVU students are expected to produce their own original academic work.

Faculty and students share the responsibility of ensuring the honesty and fairness of the intellectual environment at UVU. Students have a responsibility to promote academic integrity at the university by not participating in or facilitating others' participation in any act of academic dishonesty. As members of the academic community, students must become familiar with their [rights and responsibilities](#). In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, assessments, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Likewise, instructors are responsible to clearly state expectations and model best practices.

Further information on what constitutes academic dishonesty is detailed in [UVU Policy 541: Student Code of Conduct](#).

Equity and Title IX

Utah Valley University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, citizenship, genetic information, or other basis protected by applicable law, including Title IX and 34 C.F.R. Part 106, in employment, treatment, admission, access to educational programs and activities, or other University benefits or services. Inquiries about nondiscrimination at UVU may be directed to the U.S. Department of Education's Office

for Civil Rights or UVU's Title IX Coordinator at 801-863-7999 – TitleIX@uvu.edu – 800 W University Pkwy, Orem, 84058, Suite BA 203.

Religious Accommodation

UVU values and acknowledges the array of worldviews, faiths, and religions represented in our student body, and as such provides supportive accommodations for students. Religious belief or conscience broadly includes religious, non-religious, theistic, or non-theistic moral or ethical beliefs as well as participation in religious holidays, observances, or activities. Accommodations may include scheduling or due-date modifications or make-up assignments for missed class work.

To seek a religious accommodation, a student must provide written notice to the instructor and the Director of Accessibility Services at accessibilityservices@uvu.edu. If the accommodation relates to a scheduling conflict, the notice should include the date, time, and brief description of the difficulty posed by the conflict. Such requests should be made as soon as the student is aware of the prospective scheduling conflict.

While religious expression is welcome throughout campus, UVU also has a [specially dedicated space](#) for meditation, prayer, reflection, or other forms of religious expression.