

Agriscience II: Sustaining Human Life

COURSE DESCRIPTION

Agriscience II: Sustaining Human Life

Science and technology are revolutionizing many areas of our lives, and agriculture is no exception! From aquaculture to genetic engineering, agriscience is finding new ways to better produce and manage plants, from the field to the garden. In Agriscience II, you'll build on your existing knowledge of plant science and delve deeper into important areas such as soil science and weed management. You'll learn more about horticulture and plant science trends from creating hybrid species to growing edible plants in unlikely places.

COURSE METHODOLOGY

- This is an inquiry-based course. Students will generate knowledge through online readings, asynchronous discussions with students and their instructor, interactions with online tutorials, and online and hands-on simulations.
- The instructor will act as a guide, a facilitator, an events planner, and a resource advisor. He/she will always be available through course message.
- The student must actively construct and acquire knowledge by being intrinsically motivated to succeed. To succeed, students must participate and complete all readings and activities. This course requires the student's active participation.
- Both formal and informal assessment methods will be used in the course. Informal assessment will include an evaluation of the quality and timeliness of participation in class activities. Formal assessment may include multiple-choice quizzes, tests, discussion board participation, and written assignments. A final exam will be given at the end of the course.

COURSE PARTICIPATION OBJECTIVES

This course for which you are registered is a college preparatory, academically rigorous course that covers an entire semester's worth of material. As such, it is important that you adhere to the following guidelines as you manage your time and commit to successfully completing all required coursework:

1. The requirements for this course are equivalent to completion of minimum of 90+ hours of class instruction at a traditional on-site high school
2. Assignments must be submitted for each unit as they are completed so that the teacher may review and assess your performance. Do not hold your work, you must submit each unit's homework as it is completed, demonstrating weekly assignment completions
3. You must log in regularly to your course to demonstrate continued participation, and completion of all course requirements, including assignments, assessments and discussion forums
4. You must complete your individual work and any incident of suspected cheating, plagiarism or collaboration on assignments violates the academic integrity expectations outlined at the time of your enrollment and can result in failure of the course or further action as deemed appropriate

Citizenship

Students are expected to conduct themselves in a responsible manner that reflects sound ethics, honor, and good citizenship. It is the student's responsibility to maintain academic honesty and integrity and to manifest their commitment to the goals of NUVHS through their conduct and behavior. Students are expected to abide by all NUVHS policies and regulations. Any form of academic dishonesty, or inappropriate conduct by students or applicants may result in penalties ranging from warning to dismissal, as deemed appropriate by NUVHS.

Communication

Throughout this course students will need to be in close contact with their instructor and fellow students. Students are expected to communicate via course message and electronic discussion boards. Therefore, students should plan on checking their course messages at least three times a week and participate in the discussion boards during the weeks they are live.

Instructors strongly encourage and welcome open communication. Clear, consistent, and proactive communication will ensure a successful experience in this course. It is the student's responsibility to notify the instructor immediately if and when a personal situation occurs that affects his/her performance in this class. Being proactive with communication will result in a quick solution to any problems that may occur.

COURSE OUTLINE

Unit 1 – The Horticulture Industry and working in Horticulture

Do you have a thumb so green it glows? Are you happiest when surrounded by growing things? If so, you may be planning a future in horticulture or plant science. In this unit, you'll learn what horticulture is all about, from growing plants to designing garden spaces. You'll also learn more about the exciting trends in horticulture and plant science, including plant modifications and designing for sustainability. Finally, you'll learn how to stay safe working in the nursery or garden.

Learning Objectives

- Define horticulture.
- Identify different types of horticulture.
- Recognize key trends and technology relevant for plant scientists.
- Understand the basics of workplace safety for horticulturalists.

Activities

Unit 1 Text Questions	Homework	10 points
Unit 1 Online Lab Questions	Homework	10 points
Unit 1 Activity	Homework	15 points
Unit 1 Discussion 1	Discussion	5 points
Unit 1 Discussion 2	Discussion	5 points
Unit 1 Quiz	Quiz	15 points

Unit 2: Identifying and Classifying Plants

To study plants and to grow them, you need to first identify them. Identifying a plant tells you how it reproduces, where it grows best, and how much sun and water it needs. Identifying a plant also provides information about its growth pattern. In this unit, you'll learn a number of different ways to identify, classify, and categorize plants. These strategies will help you to understand plants and to choose plants for different uses commercially, in the garden, and at home.

Learning Objectives

- Classify an unidentified plant into a basic group and begin the process of identifying it.
- Explain plant taxonomy and how we scientifically group, classify, and name plants.
- Understand how different types of plants live and grow over their lifetime.
- Recognize key structural differences between different types of plants.

Activities

Unit 2 Text Questions	Homework	10 points
Unit 2 Online Lab Questions	Homework	10 points
Unit 2 Activity	Homework	15 points
Unit 2 Discussion 1	Discussion	5 points
Unit 2 Discussion 2	Discussion	5 points
Unit 2 Quiz	Quiz	15 points

Unit 3: Plant Growth, Propagation, and Development

To study plants, to grow plants, and even to grow the products of plants, you need to understand how plants reproduce and how they can be propagated in a laboratory or garden. You also have to understand what they need to grow, and how plants use light to provide energy. In this unit, you'll learn many different ways to propagate plants, from seeds to grafting, and you'll develop an improved understanding of how plants grow.

Learning Objectives

- Identify both sexual and asexual plant reproduction strategies.
- Explain how seeds are fertilized and how they grow.
- Recognize different means of propagating plants.
- Define the process of photosynthesis.

Activities

Unit 3 Text Questions	Homework	10 points
Unit 3 Online Lab Questions	Homework	10 points
Unit 3 Activity	Homework	15 points
Unit 3 Discussion 1	Discussion	5 points
Unit 3 Discussion 2	Discussion	5 points
Unit 3 Quiz	Quiz	15 points

Unit 4: Soil Science

Growing plants—in the laboratory, on the farm, in the garden, or even in a flowerpot—requires that the plants have access to a growing medium, typically some sort of soil. With only a few exceptions, you can't grow plants out of thin air. Soil science is the study of soil as a natural resource, including how it is used and managed. In this unit, you'll learn about different types of soil, how to improve soil, and why good-quality soil is essential for plant growth. You'll also learn about other types of planting media and how to use them for container gardening and other applications. With this knowledge, you'll be able to sustain vigorous and healthy plants of all types.

Learning Objectives

- Describe soil types and their effects on plants.
- Discuss trends and advances in soil science.
- Identify growing media and fertilizers.
- Demonstrate proper use of growing media and fertilizers.

Activities

Unit 4 Text Questions	Homework	10 points
Unit 4 Online Lab Questions	Homework	10 points
Unit 4 Activity	Homework	15 points
Unit 4 Discussion 1	Discussion	5 points
Unit 4 Discussion 2	Discussion	5 points
Unit 4 Quiz	Quiz	15 points

Unit 4: Soil Science (Continued)

Midterm Exam Objectives

- Review information acquired and mastered from this course up to this point.
- Take a course exam based on material from the first four units in this course (Note: You will be able to open this exam only one time.)

Midterm Exam Activities

Midterm Discussion	Discussion	5 points
Midterm Exam	Exam	50 points

Unit 5: Irrigation and Watering

As you've learned, plants need sunlight to grow, but they also need water. In agricultural science, plants are most often supplied with water through irrigation, or the intentional application of water to the plants, or to the ground surrounding the plants. In this unit, you'll learn how irrigation systems work and about research and discoveries in irrigation science today.

Learning Objectives

- Describe the science behind irrigation and watering systems.
- Irrigate plants using an irrigation system.
- Maintain irrigation systems.
- Explain irrigation techniques for plants and turf.

Activities

Unit 5 Text Questions	Homework	10 points
Unit 5 Online Lab Questions	Homework	10 points
Unit 5 Activity	Homework	15 points
Unit 5 Discussion 1	Discussion	5 points
Unit 5 Discussion 2	Discussion	5 points
Unit 5 Quiz	Quiz	15 points

Unit 6: Fertilization and Pest Management

To be healthy, plants have to be provided for and protected. Providing for plants means more than just healthy soil—it also requires that you learn how to apply and use fertilizer. In addition, protecting plants means that you need to know about integrated pest management in all its forms and how to use it to reduce the risks associated with insects, wildlife, and unwanted plants. You also need to understand the laws, which govern the use of these chemicals. They can be dangerous, and state and federal governments have protections in place concerning their sale, use, and labeling.

Learning Objectives

- Describe integrated pest management approaches.
- Use a pest control system.
- Apply proper fertilizer application components.
- Manage and apply fertilizer schedules.

Activities

Unit 6 Text Questions	Homework	10 points
Unit 6 Online Lab Questions	Homework	10 points
Unit 6 Activity	Homework	15 points
Unit 6 Discussion 1	Discussion	5 points
Unit 6 Discussion 2	Discussion	5 points
Unit 6 Quiz	Quiz	15 points

Unit 7: Landscape Science

Landscape science and design implements many of the plant science skills you've learned throughout this course. Landscaping enables you to arrange plant materials and outdoor construction and installations in ways that are both functional and decorative. Smart landscape science enables landscaping to serve a number of additional functions, including reducing soil erosion, limiting water use, and cutting heating and cooling costs.

Learning Objectives

- Identify principles of landscape design.
- Apply best management practices in landscape design.
- Apply principles of landscape design and maintenance.
- Recognize and apply landscape science for sustainability.

Activities

Unit 7 Text Questions	Homework	10 points
Unit 7 Online Lab Questions	Homework	10 points
Unit 7 Activity	Homework	15 points
Unit 7 Discussion 1	Discussion	5 points
Unit 7 Discussion 2	Discussion	5 points
Unit 7 Quiz	Quiz	15 points

Unit 8: Plant Management

Managing plants and planting sites is essential to keep plants alive in a wide variety of settings, from the garden to the lab. In this unit, you will look at current and future applications of the skills, information, and science you've learned in this course. The skills of agriscience are essential to support the future of our population and our planet. Scientists in plant laboratories are working to develop new plant technologies to improve production and nutrition and address key issues of climate change.

Learning Objectives

- Harvest, transport, and install plant materials.
- Manage planting sites and needs.
- Discuss emerging trends in horticulture and plant management.
- Describe future applications of plant science.

Activities

Unit 8 Text Questions	Homework	10 points
Unit 8 Online Lab Questions	Homework	10 points
Unit 8 Activity	Homework	15 points
Unit 8 Discussion 1	Discussion	5 points
Unit 8 Discussion 2	Discussion	5 points
Unit 8 Quiz	Quiz	15 points

Unit 8: Plant Management (Continued)

Final Exam Objectives

- Review information acquired and mastered from this course up to this point.
- Take a course exam based on material from units five to eight in this course – the last four units.
(Note: You will be able to open this exam only one time.)

Final Exam Activities

Class Reflection Discussion	Discussion	10 points
Final Exam	Exam	50 points

HOW YOU WILL BE GRADED

For critical thinking questions, there are no right or wrong answers. For example, a question on your thoughts on why you think people are shy is a pretty open-ended type of question. Grades will be based on the depth of personal insight you present. **Do not simply agree or disagree** with an insight question. We are looking for critical thinking and possibly a related personal experience with the question.

It is important to provide detailed answers for insight/opinion questions.

For review questions, you should produce a more academic answer. For example, "What two categories are norms divided into?" This type of direct question requires a specific answer. Please use full sentences and proper grammar.

When submitting paragraphs, use these guidelines.

1. The first, second or last sentence contains the main idea and key words from the question or assigned topic.
2. Paragraph contains one to three explanatory sentences.
3. Paragraph contains two to four sentences about specific details related to question.
4. Details are colorful, interesting and appropriate.
5. Paragraph ends with a good closing sentence that refers to the main idea without repeating it.
6. Free of spelling and grammatical errors.

GRADE SCALE

The following grading scale will be used to determine your final letter grade.

Letter Grade	Percentage Earned
A	95%+
A-	90% - 94.9%
B+	87% - 89.9%
B	84% - 86.9%
B-	80% - 83.9%
C+	77% - 79.9%
C	74% - 76.9%
C-	70% - 73.9%
D+	67% - 69.9%
D	64% - 66.9%
D -	60% - 63.9%
F	59% and lower

SUPPORT

At NUVHS you will have access to multiple support teams. Who you contact will depend on the questions you have. Always start by contacting your teacher through the Message Center in the course. Your teacher should be able to answer your question, but if they can't, then they will direct you to another support team. If you have questions about any of the course content, your grades, or course policies, you should contact your instructor.

For questions about your enrollment, transcripts, or general school-wide policies, you can contact **NUVHS Student Services** at info@nuvhs.org or by phone at 866.366.8847. For example, if you would like to withdraw from your course, you should contact Student Services. Please note that a refund for your course can only be obtained if you drop within the first seven days of enrolling in the course.

For help with login/password issues, or other technical issues specific to the Blackboard website, you can contact the team at [National University Blackboard Learn](#). They can also be reached by phone at (888) 892-9095.

EXPECTED SCHOOL-WIDE LEARNING RESULTS (ESLRs)

Engaged Learners

- Demonstrate self-directed learning skills such as time management, and personal responsibility through the completion of course requirements
- Develop an understanding of their own preferred learning styles to enhance their overall academic potential
- Incorporate effective and relevant internet and multimedia resources in their learning process to broaden their knowledge base

Critical Thinkers

- Effectively analyze and articulate sound opinions on a variety of complex concepts
- Illustrate a variety of problem-solving strategies that strengthen college preparation and workforce readiness
- Formulate a framework for applying a variety of technology and internet-based research to enhance information literacy and collaborative thinking

Effective Communicators

- Demonstrate awareness and sensitivity to tone and voice in multiple forms of communication
- Express concepts and ideas in a variety of forms
- Enhance communication skills through the use of media rich or other technology resources

Global Citizens

- Appreciate the value of diversity
- Understand the range of local and international issues facing today's global community
- Demonstrate awareness of the importance of cultural sensitivity and social responsibility in the 21st century