



Course Prefix/Number/Title: HORT 249 Greenhouse Operations

Number of Credits: 4

Course Description: This course will explore and examine the area of commercial greenhouse operations and management with a focus on greenhouse structures, heating, lighting, growing media, irrigation, nutrition, growth regulators, integrated pest management (IPM) and environmental monitoring and control, among others.

Pre-/Co-requisites: None

Course Objectives: The aim of this course is to help you to understand the dynamics and complexities of operating a commercial growing operation so that you will complete this course feeling confident and competent and have the necessary skills to take your horticultural studies/career to the next level. As this area has a broad subject matter, we will examine the principal areas that have the most significance when it comes to organized and efficient production methods and systems.

Instructor: Peter Keane

Office: Online

Office Hours: Monday-Thursday 11am-12pm

Phone: Use email

Email: peter.keane@dakotacollege.edu

Lecture/Lab Schedule: TBD

Textbook(s): Greenhouse Management, A Guide to Operations and Technology by Ted Goldammer

Course Requirements:

Active online class participation

Completing all required readings

Submitting discussions/assignments/projects/exams on time

Engaging with other students

Active campus LAB participation

Tentative Course Outline:

Week 1 Chapter 1 Greenhouse Structures and Design + Lab

Week 2 Chapters 2 & 3 Greenhouse Glazing / Greenhouse Mechanization and Material Handling +Lab and Assignment

Week 3 Chapter 4 Greenhouse Heating + Lab and Assignment

Week 4 Chapter 5 Greenhouse Ventilation and Cooling + Lab and Assignment

Week 5 Chapter 6 & 7 Greenhouse Environmental Monitoring and Control / Light and Lighting Control in Greenhouses +Lab and Assignment (Week 6)

Week 6 Chapters 8,9 & 10 Carbon Dioxide in Greenhouses / Effects of Temperature in Greenhouse Crops / Managing Vapor Pressure Deficit in Greenhouse Crops + Lab and Assignment

Week 7 Chapters 11 & 12 Growing Media / Soil Pasteurization, Fumigation and Solarization +Lab and Assignment

Week 8 Chapter 13 Greenhouse Plant Containers + Lab and Mid-Term

Week 9 Chapter 14 Greenhouse Production Systems + Lab and Assignment

Week 10 Chapters 15 & 16 Irrigating Greenhouse Crops / Irrigation Water for Greenhouses + Lab

Week 11 Chapter 17 & 18 Micro-Irrigation for Greenhouse Crops / Plant Nutrition for Greenhouse Crops + Lab and Assignment

Week 12 Chapters 19 & 20 Fertilizers for Greenhouse Crops / Fertigation in Greenhouse Crops + Lab

Week 13 Chapters 21 & 22 Plant Growth Regulators for Greenhouse Crops / Plant Propagation from Seed + Lab and Assignment

Week 14 Chapters 23 & 24 Vegetative Plant Propagation / Integrated Pest Management in Greenhouses + Lab

Week 15 Chapters 25 & 26 Greenhouse Insect and Mite Pest Management / Greenhouse Disease Management + Lab and Assignment

Week 16 Chapters 27 & 28 Greenhouse Pesticides / Pesticide Application and Equipment in Greenhouses + Lab

General Education Competency/Learning Outcome(s) OR CTE Competency/Department Learning Outcome(s):

Employ industry-specific skills in preparation for workplace readiness

Combine general education and vocational skills curriculum

Demonstrate critical thinking and decision-making skills.

Relationship to Campus Focus:

To develop a solid understanding of the world of Horticulture and how we can form a closer bond with nature through this understanding so that we may live a life that is both harmonious, respectful, and beneficial to others and our amazing planet.

Classroom Policies:

Plagiarism: The strength Dakota College at Bottineau depends on academic and personal integrity. In this course, you must be honest and truthful. Plagiarism is the use of someone else's work, words, or ideas as if they were your own. Here are three reasons not to do it:

- By far the deepest consequence of plagiarizing is the detriment to your intellectual and moral development: you will not learn anything, and your ethics will be corrupted.
- Giving credit where it is due but adding your own reflection will get you higher grades than putting your name on someone else's work. In an academic context, it counts more to show your ideas in conversation than to try to present them as sui generis.
- This means not cutting and pasting directly into your assignment from other sources. I need everything to be your own words!

Finally, all students are expected to adhere to the highest standards of academic integrity. Students must complete all the work themselves. Cheating or plagiarism is a serious offense and is subject to disciplinary action by the instructor and the college administration. Please be sure to review the Student Handbook. The consequences of plagiarism in this class depend on the level exhibited but are at a minimum a failing grade on the assignment up to failing the class.

Student Email Policy:

Dakota College at Bottineau is increasingly dependent upon email as an official form of communication. A student's campus-assigned email address will be the only one recognized by the Campus for official mailings. The liability for missing or not acting upon essential information conveyed via campus email rests with the student.

Academic Integrity:

According to the DCB Student Handbook, students are responsible for submitting their own work. Students who cooperate on oral or written examinations or work without authorization share the responsibility for violation of academic principles, and the students are subject to disciplinary action even when one of the students is not enrolled in the course where the violation occurred. The Code detailed in the Academic Honesty/Dishonesty section of the Student Handbook will serve as the guideline for cases where cheating, plagiarism or other academic improprieties have occurred.

Disabilities or Special Needs:

Students with disabilities or special needs (academic or otherwise) are encouraged to contact the instructor and Disability Support Services.

Title IX:

Dakota College at Bottineau (DCB) faculty are committed to helping create a safe learning environment for all students and for the College as a whole. Please be aware that all DCB employees (other than those designated as confidential resources such as advocates, counselors, clergy, and healthcare providers) are required to report information about such discrimination and harassment to the College Title IX Coordinator. This means that if a student tells a faculty member about a situation of sexual harassment or sexual violence, or other related misconduct, the faculty member must share that information with the College's Title IX Coordinator. Students wishing to speak to a confidential employee who does not have this reporting responsibility can find a list of resources on the DCB Title IX webpage.