DAKOTA COLLEGE AT BOTTINEAU

COURSE SYLLABUS

Course Prefix/Number/Title: **HORT 249 Greenhouse Operations**

Number of Credits: 4

Course Description:

This course will focus on the development, organization, infrastructure, and operation of production greenhouses while examining different greenhouse structures. Production techniques such as watering, fertilizing, growth regulators, and insect and disease identification and control will be covered.

Pre-/Co-requisites: None

Course Objectives:

Explore and examine the areas 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.

The aim of this course is to gain knowledge and understanding of the principles and practices and help you to understand the dynamics and complexities of operating a commercial greenhouse growing operation. This course will enable you to feel competent and have the necessary skills and confidence to to manage a greenhouse. As this area has a broad subject matter we will examine the main areas that have the most significance when it comes to organized and efficient production methods and systems.

Instructor: Joseph Pancoast

Office: Molberg 21

Office Hours: M W F 10:00am-11:00am or by appointment

Email: joseph.pancoast@dakotacollege.edu

Lecture Schedule: M W F 1:00-1:50

Lab Schedule: **TBD**

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

Course Requirements:

Students' knowledge and understanding of the reading and supplemental materials will be assessed through exams, critical thinking assignments, assignments, labs and presentations. Grading is based on a standard curve, where students earn a grade based upon the percent of total possible points they obtain. Although, slight modification may occur based on the discretion of the instructors. Any missed exam or assignment not submitted in the allotted time will be given a zero (10% will be deducted every day then a zero will be given on day seven). Note: Late work allotted time is reduced for any assignment or exam at the end of the semester.

✓ *Participation/Discussion Boards:* Students are expected to participate in discussion board on topics related to the class throughout the semester. The purpose will be to discuss and learn from each other. It is important that students be respectful of each other's opinions. The requirements for each discussion will be outlined when the discussion begins. To be effective, we all must participate and respond to each other in a timely manner. Discussions will be available for one to two weeks and students must complete them during that time frame. If there are no online students this may be assessed with in-class discussion points.

✓ *Grading and Evaluation:*

Letter Grade	Points (Percent)
A	(89.5% - 100%)
B	(79.5% - 89.4%)
C	(69.5% - 79.4%)
D	(59.5% - 69.4%)
F	(<59.5%)

Tentative Course Outline:

Here is the general layout of the program:
Weeks 1-2 will cover greenhouse structures and mechanization
Weeks 3-6 will cover environmental control and monitoring
Weeks 7-8 will cover growing media, soil pest and disease control and planting containers **Week 9** will cover production systems
Weeks 10-12 will cover irrigation, plant nutrition and fertilizers
Weeks 13-14 will cover growth regulators, IPM, seed and vegetative production
Weeks 15-16 will cover pest and disease control/management and pesticide application

Weekly Details

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 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

Classroom Policies:
1. Please no hot food in the classroom. Its delicious aroma would be distracting for the instructor and other students. 😋
2. Attend classes and especially labs on time. If late or missing lab points may be deducted.

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 important 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.

AI Student Policy:
Unless otherwise indicated in the course syllabus, or in individual instructions for course assignments, or in the absence of the express consent of the course instructor, students are not allowed to utilize generative AI to help produce any of their academic work. Any violation of this policy will be considered an act of academic dishonesty as outlined within the Dakota College Code of Student Life.