Greenhouses are widely used to grow and protect vegetables around the world. For certain vegetable crops, greenhouses present several advantages with respect to field production. In greenhouses, crops lead to greater yields, higher quality, and the harvest season is extended per unit of cropped area. High-value crops can be grown in soil-less media and irrigated with water and nutrients which can be recycled into the cropping system. Pests and diseases can be managed using biological control strategies. The high returns commanded by specialty crops grown in greenhouses can make this production system a viable alternative for growers in regions where production constraints such as unfavorable climate, reduced land due to urbanization, and restriction and reduction in the use of pesticides make field production more difficult.
In Florida, the greenhouse industry is expanding; high value vegetables such as colored peppers, cucumbers, and tomatoes are grown under protective structures. Strawberries, melons and other high value vegetables are promising crops for this state. Greenhouse technology for Florida and other subtropical regions is being developed and adapted from other production regions at the Protected Agriculture Project at the Horticulture Sciences Department of the University of Florida (please visit http://www.hos.ufl.edu/ProtectedAg/).

**Greenhouse and Protected Vegetable Production**, is a course intended for graduate and undergraduate students who want to learn about the many components of vegetable greenhouse production systems.

Lectures by the professor will present an overview of the world and local greenhouse vegetable industry, the components of greenhouse structures and plant growing systems, irrigation and fertilization management using containers and soil-less media, pests and diseases management, postharvest handling of vegetable crops, production of selected greenhouse-grown vegetable crops, and economics, marketing and global competition.

The course will be composed of lectures, laboratory classes, and visits to commercial growers. The professor and invited speakers will give lectures and provide updated reading materials. Laboratory classes will provide students with the possibility of ‘hands-on’ experience. Students will learn about greenhouse crop management practices working on a vegetable crop that they will grow in a commercial-type greenhouse throughout a complete crop cycle. Students will learn how to manage and solve crop production problems applying knowledge acquired in the lectures and lab classes.

Visits to commercial greenhouse operations will provide students with the opportunity to directly learn from the growers’ experiences and to complement the knowledge acquired through lectures and lab classes.

If you have any questions, please do not hesitate in contacting Dr. Daniel Cantliffe (http://www.hos.ufl.edu/djcweb/) at djcant@ufl.edu.

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**HOS 3222C & HOS 6932 - Greenhouse and Protected Vegetable Production**

**Spring 2010 Class Schedule and Syllabus**

**Instructor:** Dr. Dan Cantliffe 1251 Fifield  392-1928 x 203  djcant@ufl.edu

**Office hrs:** Mon. & Wed.  10:00 - 11:00 am (other times by appointment)

**Credit hours:** 3

**Section Number:** 1622 / 8981

**Meeting Times:**  Lectures – Tues. /Thurs. Period 2, 8:30am - 9:20am 2316 Fifield / PSREU (Plant Science Research and Education Unit) Protected Ag Headhouse / Greenhouse Lab - Thursday Periods 2 - 4  8:30am -11:30am PSREU Protected Ag Greenhouse
**Grading System**

Exam 1 - 100 points  Laboratory projects will be assigned to students. Projects will be conducted at the Protected Ag Greenhouse at the PSREU/Citra.
Final Exam - 150 points
Laboratory Project - 200 points

**Academic Honesty**

As a result of completing the registration form at the University of Florida, every student has signed the following statement: I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University.

**Classroom Decorum**

University policy is that beverages and food are not permitted in classrooms. No smoking and no other uses of tobacco are permitted. The university is a drug and alcohol free workplace and any student under influence will not be permitted participate in class activities. Cellular and other types of communications devices must be turned off during class (if it buzzes, beeps or chimes, turn it off). Please keep reading of newspapers and other non-class materials reserved for an appropriate location such as the lounge area in this building.

**UF Counseling Services**

Resources are available on-campus for students having personal problems or lacking clear career and academic goals, which interfere with their academic performance. These resources include:

1. University Counseling Center, 301 Peabody Hall, 392-1575, personal and career counseling;
2. Student Mental Health, Student Health Care Center, 392-1171, personal counseling;
3. Sexual Assault Recovery Services (SARS), Student Health Care Center, 392-1161, sexual counseling; and
4. Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.

**Software Use**

All faculty, staff and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. *We, the members of the University of Florida community, pledge to hold our peers and ourselves to the highest standards of honesty and integrity.*
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HOS 3222C & HOS 6932 Field Trip April 10-11, 2010

*** Tentative Schedule

April 10

7 am – leave Gainesville for Robrick Nursery in Hawthorne, FL. Ornamental operation using sustainable practices such as leachate collection and recycling.

Noon – lunch in Wildwood, FL

1 – 3 pm – Visit Holloway Tree Farm, Leesburg, FL. An amazing operation using patented lined collection / holding ponds and flood irrigation for both vegetables and ornamentals.

4 - 6 pm – Visit Dr. Lance Osborne, Entomologist, Mid-Florida Research and Education Center, Apopka, FL. Dr. Osborne specializes in biological control of insect pests, using IPM techniques, native beneficial species, and banker plants.

6 pm – Overnight in Orlando, FL

April 11

7 am – depart hotel for The Land, EPCOT Center, Walt Disney World

Noon – lunch on route to Sun City, FL

2 – 5 pm – Visit Speedling, Inc. The largest vegetable transplant producer in Florida. Speedling utilizes patented floating trays and sub-irrigation for optimum plant and root growth with minimal irrigation inputs.

5 pm – Return to Gainesville.

This trip will be funded by the University of Florida Office of the Provost, UF Sustainability Committee, and the Horticultural Science Department. The UF Sustainability Committee awarded the funds as a Minigrant for the Enhancement of Sustainability in Instruction 2007-2008.

The objectives of the field trip are to enhance the educational opportunity of students enrolled in HOS 3222c / HOS 6932 – Greenhouse and Protected Vegetable Production, by visiting several commercial operations implementing sustainable practices, the students’ active involvement with the course will be complemented with real-world situations. Coursework, including lectures and hands-on lab class, focus on each component of greenhouse vegetable production, including an overview of the world and local greenhouse vegetable industry, the components of greenhouse structures and plant growing systems, irrigation and fertilization management using containers and soil-less media, pests and diseases management, postharvest handling of vegetable crops, production of selected greenhouse-grown vegetable crops, and economics, marketing and global competition. A large component of greenhouse vegetable production is sustainability. These crops can be produced pesticide-free using integrated pest management and biological control, thus reducing environmental chemical inputs, and furthermore, fertilizers and irrigation can be precisely controlled and recycled so that nothing is misused or lost to the environment.