UNIVERSITY OF FLORIDA
Horticultural Sciences Department
VEC 3221C Fall 2012 Section 1172
Commercial Vegetable Production

Instructor: Bala Rathinasabapathi, Ph.D.
Room 2231 Fifield Hall
Phone 352-273-4847

Lecture: Mon, Wed and Fri 7th Period (1:55 pm – 2:45 pm)
Room 2316, Fifield Hall

Lab Fri 8th – 9th period (3:00 pm – 4:55 pm). Student vegetable gardens, Hull Road, Across from Fifield Hall

Office hours: By Appointment; e-mail brath@ufl.edu
Course Homepage: http://www.hos.ufl.edu/vec3221.htm
Teaching assistants: TBA

Optional Textbook:


Other Optional References:


Objective:
The principles and practices of successful commercial vegetable production will be presented. Crop requirements, growth patterns and production techniques are emphasized along with discussion of consumption/marketing patterns in the U.S. and Florida production areas. The laboratory involves field trips to farming operations and guest lectures from individuals in the vegetable production industry. Each member of the class will also develop a vegetable garden with different crops suitable for Fall production and participate in vegetable crop production activities.

General Syllabus:
Lecture information and laboratory experiences will instruct the student in the specific production practices and technology, as well as other important information required to successfully grow various vegetable crops.
For each crop grouping, the student will learn:
1. The botanical classification, horticultural types, origin, and history of each crop.
2. The scope and importance of production in the US, including where the crop is grown, commercial acreage, value and average yields.
3. Important aspects of vegetable growth and development, especially in relation to plant response to environmental factors and how they may affect production practices.
4. Specific climatic and cultural requirements of each crop.
5. Methods of planting, plant spacing and populations, and specialized procedures such as seed treatments.
6. Standard and evolving production practices and requirements necessary for successful production.
7. Leading cultivars and their important characteristics and new developments in breeding of specific crops.
8. Pests and significant physiological disorders.
9. Harvesting procedures, post-harvest handling of crops and food safety issues.

Format:
4-credit course for majors and non-majors. No pre-requisites.

Evaluation:
Students will be evaluated based on the following:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>Class attendance &amp; participation</td>
<td>100</td>
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<tr>
<td>Lab reports &amp; field trip reports</td>
<td>100</td>
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<tr>
<td>Class presentation</td>
<td>100</td>
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<td>Written assignment</td>
<td>100</td>
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<tr>
<td>Quizzes/Tests</td>
<td>100</td>
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<td>TOTAL</td>
<td>500</td>
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* Letter grades for the course will be assigned according to the chart below:
90-100 = A; 87-89 = A-; 84-86 = B+; 80-83 = B; 77-79 = B-; 74-76 = C+; 70-73 = C; 67-69 = C-;
64-66 = D+; 60-63 = D; 57-59 = D-; 56-below = E.

* Class attendance will be marked each day either at the beginning or end or middle of the class period.
* There is no final exam in this course.
Grades for the course will be assigned according to established university policy.
Learning Outcomes:

By the completion of this course, the conscientious student should be able to
- Explain production details for major vegetables.
- Diagnose problems related to soil fertility, irrigation and pests of major vegetables.
- Find sustainable solutions to problems related to soil fertility, irrigation and pests of major vegetables.
- Choose vegetable cultivars suitable for a given region or production system.
- Enumerate advantages and disadvantages of various production systems.
- Propagate and cultivate a vegetable garden
- Critically analyze production and marketing data and
- Estimate cost of production for major vegetables.

Assignments:

(1) Transplant Production (20 points). Each student will generate vegetable transplants of at least two cool season vegetables. Instructions, material and greenhouse space will be provided. Quality of the transplants and a report of this activity will be evaluated.

(2) Field Production of Vegetables (60 points). The students will cultivate a variety of vegetable cultivars as part of their laboratory. A group of students will tend one garden but each student will keep a field notebook of weekly observations and write a final report for evaluation. The final report should contain information about the crops and their varieties, crop stand, weather, irrigation, soil fertility management, insect pests, diseases and weeds encountered and how the problems were solved and the quality and quantity of vegetables harvested.

(3) Container gardens (20 points). Facilities to set up container gardens of warm season vegetables, greenhouse space, materials and instruction will be provided. This year’s theme will be peppers. The quality of the crop and the final write up will be evaluated. As a special project in plant breeding, we will attempt to evaluate a breeding population of peppers.

(4) Hydroponics (20 points). Facilities to set up hydroponics will be provided. Students will grow a crop of lettuce. The quality of the crop and the final write up will be evaluated.

(5) Field trip reports (30 points). The students need to write a summary of information and viewpoints collected during field trips and invited speakers for 10 points each.

(6) Extra Credit. Students who can prepare a video presentation on their vegetable garden or other assignment will get 50 extra points. The edited video should be 5 minutes or longer, of good quality and is available for posting on YouTube.

(7) Written assignment (100 points). Related to your class presentation, a short essay is
expected. It should be not longer than 6 printed pages of text, contain at least two figures and at least three references cited or sources consulted.

Course policies and procedures

1 Homewor: Activity reports or other homework are due on the dates announced. 20% will be deducted for incomplete homework or not on time by one week. No credit will be given for labs or field trip reports one week after the due date. No homework will be accepted after the final class meeting. If you are having trouble with homework, please see me immediately.

2 Test Makeups will be arranged only in case of an emergency and must be scheduled within a week of the original test and at the convenience of the instructor.

3 Follow all safety regulations in and out of the classroom. Personal safety during labs and field trips is individual’s responsibility.

4 By registering for classes, 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”. Honor Code violations in this course will not be tolerated, and may result in the assignment of a failing grade. Students observing an Honor Code violation should report them to the instructor immediately.

5 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.

6 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: University Counseling Center (392-1575), Personal counseling at Student Mental Health (392-1171), Sexual Assault Recovery Services (392-1161) and Career Resource Center (392-1601).

Schedule: Field trip and farm tour schedules are temporary and might change according to the convenience of the hosts and travel considerations.

22 Aug 2012 Wed Introduction & Syllabus
24 Aug 2012 Fri  Importance of Vegetables/ last day for drop/add
24 Aug 2012 Fri  Lab 1  Vegetable Seed Sources
27 Aug 2012 Mon  Major vegetables: Production Statistics & Information Resources
29 Aug 2012 Wed  Vegetable Varieties I: Crop domestication
31 Aug 2012 Fri  Vegetable Varieties I: Plant Breeding
31 Aug 2012 Fri  Lab 2  Transplant Production
                  Lab 3.  Planting a Fall Vegetable Garden I
3 Sep 2012 Mon   Labor Day – No class
5 Sep 2012 Wed   Vegetable Varieties II
7 Sep 2012 Fri   Vegetable Varieties: Hybrid vigor
7 Sep 2012 Fri   Lab 3.  Planting a Fall Vegetable Garden II
10 Sep 2012 Mon  GM Vegetable Crops I
12 Sep 2012 Wed  GM Vegetable Crops II
14 Sep 2012 Fri  Hydroponics
14 Sep 2012 Fri  Lab 4.  Setting up a Container Veg. Garden Experiment.
17 Sep 2012 Mon  Soil fertility management
19 Sep 2012 Wed  Soil fertility management
21 Sep 2012 Fri  Mulching
21 Sep 2012 Fri  Lab 5.  Setting up a Hydroponic System to Grow Peppers
24 Sep 2012 Mon  Irrigation
26 Sep 2012 Wed  Mulching
28 Sep 2012 Fri  Insect pests on Vegetable Crops
28 Sep 2012 Fri  Lab 4 and 5 continued. Fertilizer treatments to Container Garden and Adjustments to Hydroponics.
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<thead>
<tr>
<th>Date</th>
<th>Monday</th>
<th>Activity</th>
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<tbody>
<tr>
<td>1 Oct 2012</td>
<td>Insecticides</td>
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<td>3 Oct 2012</td>
<td>Insecticides</td>
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<td>5 Oct 2012</td>
<td>Crop Diseases</td>
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<td>8 Oct 2012</td>
<td>Fungicides</td>
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<td>10 Oct 2012</td>
<td>Herbicides</td>
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<td>12 Oct 2012</td>
<td>Weed control</td>
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<td>15 Oct 2012</td>
<td>Harvest and Yield of Vegetables</td>
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<td>17 Oct 2012</td>
<td>Post-harvest handling of Vegetables</td>
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<tr>
<td>19 Oct 2012</td>
<td>Post-harvest handling of Vegetables</td>
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<td>22 Oct 2012</td>
<td>Food safety issues</td>
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<td>24 Oct 2012</td>
<td>Tomato Production</td>
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<td>26 Oct 2012</td>
<td>Lab 9 Field Trip to a Vegetable Production Farm.</td>
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<td>29 Oct 2012</td>
<td>Tomato Production</td>
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<td>31 Oct 2012</td>
<td>Cucurbit Production</td>
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<td>2 Nov 2012</td>
<td>Cucurbit Production</td>
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<td>2 Nov 2012</td>
<td>Lettuce and Endive Production</td>
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<td>2 Nov 2012</td>
<td>Lab 4 and 5 Continued. Lab 10 Set up the experiment on weed control.</td>
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<td>5 Nov 2012</td>
<td>Legume Production</td>
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<td>7 Nov 2012</td>
<td>Legume Production</td>
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9 Nov 2012 Fri    *Homecoming. No class.*
12 Nov 2012 Mon   Veterans Day. No class.
14 Nov 2012 Wed    Organic Production
16 Nov 2012 Fri    Pest Control in Organic Production
                             Field trip to a Vegetable Farm and Packing House.
19 Nov 2012 Mon    Discussion class
21 Nov 2012 Wed    Thanksgiving break – No class
22 Nov 2012 Thu    Thanksgiving
23 Nov 2012 Fri    Thanksgiving break – No class
26 Nov 2012 Mon    Student Presentation
28 Nov 2012 Wed    Student Presentation
30 Nov 2012 Fri    Student Presentation
3 Dec 2012 Mon    Student Presentation
5 Dec 2012 Wed    Student Presentation. *Last day of class.*

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