UNIVERSITY OF FLORIDA
Horticultural Sciences Department
VEC 3221C Fall 2011 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 and 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>
</tr>
</thead>
<tbody>
<tr>
<td>Class attendance &amp; participation</td>
<td>100</td>
</tr>
<tr>
<td>Lab reports &amp; field trip reports</td>
<td>100</td>
</tr>
<tr>
<td>Class presentation</td>
<td>100</td>
</tr>
<tr>
<td>Written assignment</td>
<td>100</td>
</tr>
<tr>
<td>Quizzes/Tests</td>
<td>100</td>
</tr>
</tbody>
</table>

TOTAL 500 points

* 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 view points 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. Homework: 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 2011 Mon Introduction & Syllabus
24 Aug 2011 Wed  Importance of Vegetables
26 Aug 2011 Fri  Major vegetables: Production Statistics & Information Resources
26 Aug 2011 Fri  Lab 1 Vegetable Seed sources & Transplant Production
29 Aug 2011 Mon  Vegetable Varieties
31 Aug 2011 Wed  Vegetable Varieties
2 Sep 2011 Fri   Vegetable Varieties
2 Sep 2011 Fri  Lab 2 Planting a Fall Vegetable Garden I
5 Sep 2011 Mon  Labor Day – No Class
7 Sep 2011 Wed  GM Vegetable Crops
9 Sep 2011 Fri  GM Vegetable Crops
9 Sep 2011 Fri  Lab 3 Planting a Fall Vegetable Garden II
12 Sep 2011 Mon  Soil Fertility Management
14 Sep 2011 Wed  Soil Fertility Management
16 Sep 2011 Fri  Hydroponics
16 Sep 2011 Fri  Lab 4 Setting up a Hydroponic System – Peppers
                  Setting up a Container Garden of Herbs
19 Sep 2011 Mon  Mulching
21 Sep 2011 Wed  Irrigation
23 Sep 2011 Fri  Insect pests
23 Sep 2011 Fri  Lab 5 Pest Control
26 Sep 2011 Mon  Insecticides
28 Sep 2011 Wed  Crop Diseases
30 Sep 2011 Fri  Fungicides
30 Sep 2011 Fri  Lab 6 Weed Identification and Control
3 Oct 2011 Mon  Weed Control
7 Oct 2011 Fri  Organic Production II
7 Oct 2011 Fri  Lab 7 Field trip to Citra farm.
10 Oct 2011 Mon  Harvest and Yields of Vegetables
12 Oct 2011 Wed  Post-harvest Handling of Vegetables
14 Oct 2011 Fri  Post-harvest Handling
14 Oct 2011 Fri  Lab 8 Harvest vegetables
17 Oct 2011 Mon  Food Safety Issues
19 Oct 2011 Wed  Tomato Production
21 Oct 2011 Fri  Pepper Production
21 Oct 2011 Fri  Farm Tour - field trip 2.
24 Oct 2011 Mon  Cucurbit Production
26 Oct 2011 Wed  Cucurbit Production
28 Oct 2011 Fri  Lettuce and Endive
28 Oct 2011 Fri  Lab 9 Pest Control Lab: Sprayer calibration
31 Oct 2011 Mon  Cole Crops Production
2 Nov 2011 Wed  Cole Crops Production
4 Nov 2011 Fri  Homecoming No Class
7 Nov 2011 Mon  Legume Crop Production
9 Nov 2011 Wed  Legume Crop Production.
11 Nov 2011 Fri  Veterans Day – No class
14 Nov 2011 Mon  Lab 10 Greenhouse: Herb Production in containers Evaluation
16 Nov 2011 Wed  Potato Production
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 Nov 2011 Fri</td>
<td>Potato Production</td>
</tr>
<tr>
<td>18 Nov 2011 Fri</td>
<td>Packing House Tour</td>
</tr>
<tr>
<td>21 Nov 2011 Mon</td>
<td>Student presentation</td>
</tr>
<tr>
<td>23 Nov 2011 Wed</td>
<td>Student presentation</td>
</tr>
<tr>
<td>25 Nov 2011 Fri</td>
<td>Thanksgiving – No class</td>
</tr>
<tr>
<td>28 Nov 2011 Mon</td>
<td>Student presentation</td>
</tr>
<tr>
<td>30 Nov 2011 Wed</td>
<td>Student presentation</td>
</tr>
<tr>
<td>2 Dec 2011 Fri</td>
<td>Student Presentation</td>
</tr>
<tr>
<td>2 Dec 2011 Fri</td>
<td>Building Better Pepper project</td>
</tr>
<tr>
<td>5 Dec 2011 Mon</td>
<td>Student Presentation</td>
</tr>
<tr>
<td>5 Dec 2011 Mon</td>
<td>Lab 11 – Garden Clean up</td>
</tr>
<tr>
<td>7 Dec 2011 Wed</td>
<td>Prizes for best presentations</td>
</tr>
</tbody>
</table>