

Discipline: Agriculture	Sub-discipline: Plant Science
General Course Title: Vegetable Crops	Min. Units: 3 Semester
Proposed Suffix: L	
<p>Course Description: Study of vegetable production covering the botany, cultural production, harvesting, processing, growth characteristics, fertility, pests, and marketing of the major warm season and cool season vegetable crops in California. A field trip into a major vegetable production region is required. Laboratory required.</p>	
Required Prerequisites or Co-Requisites ¹	
Advisories/Recommended Preparation ²	
<p>Course Objectives: <i>At the conclusion of this course, the student should be able to:</i></p> <ul style="list-style-type: none"> • Describe various commercial field and greenhouse vegetable production. • Explain the differences between cool and warm season vegetables. • Describe the proper techniques of seeding, transplanting, and cultivation of vegetables. • Identify the edible parts of various of vegetable crops at different growth stages. • Explain the role fresh market and processors have in specific crops. • Explain pollination and pest management activities. • Detail the production of specific vegetable crops. • Describe marketing options and production contracts. • Write a term paper on the production aspects of one vegetable crop. 	
<p>Course Content:</p> <ol style="list-style-type: none"> 1. Introduction <ol style="list-style-type: none"> A. Classification of Vegetable Crops <ol style="list-style-type: none"> 1. Cool season vs. warm season crops 2. Vegetable crop families <ol style="list-style-type: none"> a. edible plant parts of different vegetables 2. Warm Season Vegetable Crops <ol style="list-style-type: none"> A. Cantaloupes and Related Melons <ol style="list-style-type: none"> 1. Major types – differences and uses 2. Planting and harvesting schedules – California and nationwide 3. Fertility, water, pollination, and cultural requirements 4. Pest management 5. Harvest, handling, storage, and processing <ol style="list-style-type: none"> a. determining ripeness b. solids and marketability 6. Marketing B. Watermelons <ol style="list-style-type: none"> 1. Major types – differences and uses 2. Planting and harvesting schedules – California and nationwide 3. Fertility, water, pollination, and cultural requirements 4. Pest management 5. Harvest, handling, storage, and processing <ol style="list-style-type: none"> a. determining ripeness 6. Marketing <p>Vegetable Crops (Content Continued)</p>	

¹ Prerequisite or co-requisite course need to be validated at the CCC level in accordance with Title 5 regulations; co-requisites for CCCs are the linked courses that must be taken at the same time as the primary or target course.

² Advisories or recommended preparation will not require validation but are recommendations to be considered by the student prior to enrolling.

- C. Cucumbers
 - 1. Major types – differences and uses
 - a. slicers, European greenhouse, and picklers
 - 2. Planting and harvesting schedules – California and nationwide
 - 3. Fertility, water, pollination, and cultural requirements
 - 4. Pest management
 - 5. Harvest, handling, storage, and processing
 - 6. Marketing
- D. Squash and Pumpkins
 - 1. Major types – differences and uses
 - a. pepo, moschata, mixta and maxima
 - b. summer squash vs. winter squash
 - 2. Planting and harvesting schedules – California and nationwide
 - 3. Fertility, water, pollination, and cultural requirements
 - 4. Pest management
 - 5. Harvest, handling, storage, and processing
 - 6. Marketing
- E. Solanaceae – Tomatoes
 - 1. Major types – differences and uses
 - a. fresh market, novelty, and processors
 - 2. Planting and harvesting schedules – California and nationwide
 - 3. Fertility, water, pollination, and cultural requirements
 - 4. Pest management
 - 5. Harvest, handling, storage, and processing
 - a. canning
 - b. Ethylene and vine ripe
 - 6. Marketing
- F. Peppers
 - 1. Major types – differences and uses
 - a. green and mature bells
 - b. jalapeno and hot peppers
 - 2. Planting and harvesting schedules – California and nationwide
 - 3. Fertility, water, pollination, and cultural requirements
 - 4. Pest management
 - 5. Harvest, handling, storage, and processing
 - 6. Marketing
- G. Sweet Corn
 - 1. Major types – differences and uses
 - a. su, sh-2, se
 - 2. Planting and harvesting schedules – California and nationwide
 - a. heat units, degree days, and phenology data
 - 3. Fertility, water, pollination, and cultural requirements
 - 4. Pest management
 - 5. Harvest, handling, storage, and processing
 - a. freezing and canning
 - b. hydrocooling
 - 6. Marketing

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- H. Beans
 - 1. Major types – differences and uses

- a. snap, wax, lima, and dry beans
 - 2. Planting and harvesting schedules – California and nationwide
 - 3. Fertility, water, pollination, and cultural requirements
 - a. inoculation
 - 4. Pest management
 - 5. Harvest, handling, storage, and processing
 - a. requirements for machine harvest
 - b. hydrocooling and canning
 - 6. Marketing
 - 3. Cool Season Vegetable Crops
 - A. Lettuce and Related Crops
 - 1. Major types – differences and uses
 - a. head, green leaf and red leaf - red pigmentation and light
 - b. endive, escarole, and radicchio
 - 2. Planting and harvesting schedules – California and nationwide
 - 3. Fertility, water, pollination, and cultural requirements
 - 4. Pest management
 - 5. Harvest, handling, storage, and processing
 - a. ready-to-eat salads
 - b. vacuum cooling
 - 6. Marketing
 - B. Broccoli and Other Brassicaceae
 - 1. Major types – differences and uses
 - a. *Brassica oleraceae*, *Brassica napus*, and *Brassica campestris*
 - b. Cabbage, cauliflower, brussel sprouts, Chinese cabbage, turnips, and radishes.
 - c. horseradish
 - 2. Broccoli – dome shape and different uses
 - a. fresh and freezer
 - 3. Planting and harvesting schedules – California and nationwide
 - 4. Fertility, water, pollination, and cultural requirements
 - 5. Pest management
 - 6. Harvest, handling, storage, and processing
 - 7. Marketing
 - a. importance of foreign markets
 - C. Asparagus
 - 1. Major types – differences and uses
 - a. male, female, and super male
 - 2. Harvesting schedules – California and nationwide
 - a. out of season forcing into production
 - 3. Fertility, water, and cultural requirements
 - 4. Pest management
 - 5. Harvest, handling, storage, and processing
 - a. snapping vs. cutting
 - b. advances in machine harvest
 - 6. Marketing
- Vegetable Crops
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- D. Onions and Their Allies
 - 1. Major types – differences and uses
 - a. fresh vs. dehydration
 - b. pungency vs. sweetness

- c. shallots and bunching onions
 - 2. Planting and harvesting schedules – California and nationwide
 - 3. Fertility, water, pollination, and cultural requirements
 - 4. Pest management
 - 5. Harvest, handling, storage, and processing
 - 6. Marketing
 - E. Garlic
 - 1. Major types – differences and uses
 - a. plant description
 - b. varieties and cloves for seed production
 - c. true seed use in the future
 - 2. Planting and harvesting schedules – California and nationwide
 - 3. Fertility, water, pollination, and cultural requirements
 - 4. Pest management
 - 5. Harvest, handling, storage, and processing
 - 6. Marketing – why so few companies control production?
 - F. Carrots
 - 1. Major types – differences and uses
 - a. canners vs. cello pack
 - b. tough vs. tender carrots
 - 2. Planting and harvesting schedules – California and nationwide
 - 3. Fertility, water, and cultural requirements
 - 4. Pest management
 - 5. Harvest, handling, storage, and processing
 - a. baby peeled carrots
 - b. mechanical harvest
 - 6. Marketing – 3 firm dominance nationwide
 - G. Celery and Parsley
 - 1. Types and production areas
 - a. fresh and dehydration
 - 2. Planting and harvesting schedules – California and nationwide
 - 3. Fertility, water, and cultural requirements
 - 4. Pest management
 - 5. Harvest, handling, storage, and processing
 - 6. Marketing
4. Cultural Practices
 - A. Land Leveling
 - B. Organic vs. Conventional Production
 - C. Transplants vs. Direct Seeding – costs and automation
 - D. Mechanization of Harvest
 - E. Greenhouse Vegetable Production

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(Content Continued)**

- 5. Seed Production
 - A. Types and production areas
 - 1. Wet vs. dry seed
 - 2. Seed production contracts – different types
 - 3. Annual, biennial, and perennial crops

- 6. Minor Vegetable Crops
 - A. Spinach
 - B. Peas
 - C. Specialty crops
 - D. Herbs and spices
 - E. Beets and other root crops

Laboratory Activities: Individual Laboratory Activities are designed to support course objectives.

Methods of Evaluation: Lecture
 Comprehensive Quizzes and Exams
 Written Critical Thinking Scenarios
 Problem Analysis and Solution
 Research and Term Papers

Methods of Evaluation: Laboratory
 Laboratory Skill Validation by Observation
 Laboratory Reports
 Laboratory Research Projects and Reports
 Laboratory Skill Practicum Exams

Typical Textbooks, Manuals, or Other Support Materials
Knott's Handbook for Vegetable Growers. Lorenz and Maynard.
Producing Vegetable Crops. Swaider, Ware, McCollum (ISBN: 0-8134-2903-X)

Statewide Articulation: CPSLO-VGSC 230, CPP-PLT 226/L, UCD-PLS 49/110C, others as lower division elective

FDRG Lead Signature:

Date:

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Internal Tracking Number