

Discipline: Agriculture	Sub-discipline: Plant Science
General Course Title: Agronomy/Field Crops	Min. Units: 3 Semester
Proposed Suffix:	
<p>Course Description: Study of production principles which include botany, taxonomy, soil tillage, fertilization, variety and seed selection, pest management, harvest, processing, storage, and marketing for important fiber, food, and cereal crops in California; crops covered will include cotton, sugar beets, wheat, rice, barley, sorghum, corn, oats, safflower, legumes for seed, and potatoes. A field trip to a major production area 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"> • Plan and lay out a field making necessary calculations. • Explain the effects of temperature, water, spacing, and fertility on plant growth. • Identify and describe environmental conditions influencing local crop production. • Demonstrate the ability to grow crops from field preparation to marketing including: <ul style="list-style-type: none"> i. Preplant field preparation including irrigation, tillage, fertility, leveling, and bed preparation. ii. Planting using Brillion type grain drill and John Deere plate type and other planters. iii. Cultivation and weed management. iv. Mid-season fertility and water management. v. Pest evaluation and management. vi. Harvest and storage. vii. Marketing • Schedule the seasonal sequence of cultivation practices in a crop. • Identify botanical and taxonomical differences between crops for use in field identification and production planning. • Calculate expected plant density from a seed lot. • Run and set up different machinery used with field crops. • Identify markets available and understand their use. • Prepare a crop production budget. • Calculate a preharvest yield estimate for different crops. 	
<p>Course Content:</p> <ol style="list-style-type: none"> 1. Introduction – What are Field Crops? 2. Field Crop Botany and Taxonomy <ol style="list-style-type: none"> A. Monocots and grasses <ol style="list-style-type: none"> 1. reproductive systems B. Legumes <ol style="list-style-type: none"> 1. plant parts in identification 2. Rhizobium sp. and N fixation C. Dicots <ol style="list-style-type: none"> 1. plant parts in identification 2. reproductive systems and structures <p>Agronomy/Field Crops (Content Continued)</p> <ol style="list-style-type: none"> 3. Production Planning 	

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.

- A. Climatic requirements of crops
 - 1. germination and growth
 - B. Irrigation and field management
 - 1. management of salts
 - C. Weed management systems
 - 1. crop timing and weed management
 - 2. herbicide systems
 - D. Preplant tillage systems
 - 1. plowing
 - 2. harrowing and seedbed preparation
 - 3. laser leveling
 - 4. listing and bed preparation
 - E. Soil fertility
 - 1. soil testing
 - 2. evaluating soil test results
 - F. Planting
 - 1. planters and accessories
 - 2. calibrating a planter
 - 3. estimating final stand of a seed lot
4. Cotton
- A. Botany and taxonomy of different species
 - B. Identification and advantages of different cotton plant and fiber types
 - C. Planting and stand establishment
 - D. Maintaining the crop – irrigation, pests, growth regulators, and fertility
 - E. Defoliation and harvest
 - F. ginning – fiber quality and yield
 - G. Marketing
5. Sugar Beets
- A. Botany and taxonomy of different species
 - B. Contracting for production
 - C. Planting and stand establishment
 - D. Maintaining the crop – irrigation, pests, fertility, and sugar content
 - E. Harvest
 - F. Yield and payment
6. Rice
- A. Botany and taxonomy of different types
 - B. Field preparation
 - C. Planting and stand establishment
 - D. Maintaining the crop – irrigation, pests, fertility, and sugar content
 - E. Harvest and storage
 - 1. moisture percentage in harvest and marketing
 - F. Marketing

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(Content Continued)**

7. Wheat
- A. Botany and taxonomy of different species
 - B. Field preparation

- C. Planting and stand establishment
 - D. Maintaining the crop – irrigation, pests, fertility, and sugar content
 - E. Harvest and storage
 - F. Marketing
 - 1. Government programs
8. Barley
- A. Botany and taxonomy of different species
 - B. Field preparation
 - C. Planting and stand establishment
 - D. Maintaining the crop – irrigation, pests, fertility, and sugar content
 - E. Harvest and storage
 - 1. processing – malting
 - F. Marketing
9. Oats
- A. Botany and taxonomy of different species
 - B. Field preparation
 - C. Planting and stand establishment
 - D. Maintaining the crop – irrigation, pests, fertility, and sugar content
 - E. Harvest and storage
 - 1. processing
 - F. Marketing
10. Sorghum and Milo
- A. Botany and taxonomy of different species
 - B. Field preparation
 - C. Planting and stand establishment
 - D. Maintaining the crop – irrigation, pests, fertility, and sugar content
 - E. Harvest and storage
 - 1. processing
 - F. Marketing
11. Corn
- A. Botany and taxonomy of different species
 - 1. kernel types and usage
 - B. Field preparation
 - C. Planting and stand establishment
 - D. Maintaining the crop – irrigation, pests, and fertility
 - 1. pollination and kernel development
 - E. Harvest and storage
 - 1. processing - silage
 - F. Marketing

**Agronomy/Field Crops
(Content Continued)**

12. Garbanzos
- A. Botany and taxonomy of different species
 - B. Field preparation
 - 1. Rhizobium inoculation
 - C. Planting and stand establishment

<ul style="list-style-type: none"> D. Maintaining the crop – irrigation, pests, and fertility E. Harvest and storage <ul style="list-style-type: none"> 1. contractor supplied harvesting equipment F. Marketing – contracts <p>13. Limas and Dry Beans</p> <ul style="list-style-type: none"> A. Botany and taxonomy of different species B. Field preparation <ul style="list-style-type: none"> 1. Rhizobium inoculation C. Planting and stand establishment D. Maintaining the crop – irrigation, pests, and fertility E. Harvest and storage F. Marketing – coops <p>14. Cowpeas and Blackeyes</p> <ul style="list-style-type: none"> A. Botany and taxonomy of different species B. Field preparation <ul style="list-style-type: none"> 1. Rhizobium inoculation C. Planting and stand establishment D. Maintaining the crop – irrigation, pests, and fertility E. Harvest and storage <ul style="list-style-type: none"> 1. processing F. Marketing – coops <p>15. Potatoes</p> <ul style="list-style-type: none"> A. Botany and taxonomy of different species <ul style="list-style-type: none"> 1. skin color and usage B. Field preparation C. Planting and stand establishment <ul style="list-style-type: none"> 1. seed piece size and yield D. Maintaining the crop – irrigation, pests, and fertility E. Harvest and storage <ul style="list-style-type: none"> 1. processing – specific gravity and sugars 2. uses F. Marketing <p>16. Soybeans</p> <ul style="list-style-type: none"> A. Botany and taxonomy of different species B. Field preparation C. Planting and stand establishment <ul style="list-style-type: none"> 1. Rhizobium inoculation D. Maintaining the crop – irrigation, pests, and fertility E. Harvest and storage <ul style="list-style-type: none"> 1. processing - uses F. Marketing 	<p>Laboratory Activities: Individual Laboratory Activities are designed to support course objectives.</p>
<p>Methods of Evaluation: Lecture Comprehensive Quizzes and Exams Written Critical Thinking Scenarios Problem Analysis and Solution Research and Term Papers</p>	<p>Methods of Evaluation: Laboratory Laboratory Skill Validation by Observation Laboratory Reports Laboratory Research Projects and Reports Laboratory Skill Practicum Exams</p>
<p>Typical Textbooks, Manuals, or Other Support Materials <u>Principles of field Crop Production</u>. Martin, Leonard, and Stamp. MacMillan Publishing Co. (ISBN# 0-02-376720-0)</p>	

Statewide Articulation: Transfers as lower division elective	
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FDRG Lead Signature:	Date:
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