Reedley College AgNR Department

Timothy E. Smith Ph.D. Plant Science 4A

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**Plant Science 4A – Tree & Vine Management**

**Course Description**

An overview of orchard & vineyard crop management in California with an emphasis on those grown in the Central Valley. Subjects covered include: site development, variety characteristics and selection, orchard physiology, pest management, pruning, fertility management, irrigation management, harvest, and marketing.

**Units and Hours**

3 units; 2 hours Lecture - MW 11:00 a.m. to 11:50 a.m.

Laboratory - W 3:00 p.m. to 5:50 p.m.

Final: May 17, 2021 – 11:00-12:50

**Textbook**

A. Peaches, Plums, and Nectarines : Growing and Handling for Fresh Market.

University of California. Publication 3331.

B. Viticulture. Volume 2, Practices. Edited by Coombe, B.G., and Dry, P.R. Winetitles.

Underdale. 1992.

**Assignments and Grading**

Three major tests will be given that correlate to the assigned readings and course lecture notes. Quizzes will be given weekly on the discussed subject matter.

Point Distribution

1. Assignments/Quizzes 200

2. Laboratory Assignments & Participation 200

3. Examinations 600

Total 1000

90% = A 80% = B 70% = C 60% = D Less = F

**Important Dates:** Last Day to Drop Class with Refund: January 22, 2021

Last Day to Drop w/o Transcript Record: January 29, 2021

Last Day to Change CR/NR: February 12, 2021

Last Day to Drop w/o Letter Grade Assigned: March 12, 2021

**Assignments**: All assignments are due at the beginning of class on the date due. Late submission of assignments will be assessed a penalty of 50%. No exceptions are made.

**Academic Dishonesty**: Plagiarism and cheating are serious offenses and may be punished by failure on exam, paper or project; failure in course; and or expulsion from the University. For more information refer to the "Academic Dishonesty" policy in the College Catalog.

**Need for Assistance:** If you have any condition, such as a physical or learning disability, which will make it difficult for you to carry out the work as I have outlined it, or which will require academic accommodations, please notify me as soon as possible.

**Posting of Grades:** Final grades will not be posted. If you wish to have your final grade sent to you, please bring a self-addressed, stamped envelope to the final exam.

**Attendance**

Attendance of lectures and labs is required and roll will be taken at each meeting. A "tardy" is considered an absence unless the student contacts and explains the incident. Students must make prior arrangements with the instructor to be excused from lectures and labs, make-up of missed tests and labs are permitted only with excused absences. A student may be dropped after an excessive number of absences have occurred.

**Office Hours - Ag 4**

Monday 9:00 Wednesday 9:00 Thursday 9:00 – Email Friday 9:00 – Email

**Lecture Schedule**

Week Topics Reading Assignments

1 Introduction/Administration

1 Introduction/Varieties/Rootstocks

2 Holiday - No Class

2 Propagation

3 Orchard & Vineyard Design

3 Training & Pruning

4 Growth & Development

4 Growth & Development

5 Photosynthesis & Respiration

5 Photosynthesis & Respiration

6 Holiday - No Class

6 Review

7 Examination I

7 Dormancy & Plant Hardiness

8 Pollination/Flowering

8 Fruit Thinning/Tree Girdling

9 Soil & Water Analysis

9 Soil & Water Analysis

10 Mineral Nutrition

10 Mineral Nutrition

11 Mineral Nutrition

11 Orchard Fertilization

12 Orchard Fertilization/Review

12 Examination II

13 Irrigation Management

13 Irrigation Management

14 Integrated Pest Management

14 Insect & Mite Pest Management

15 Insect & Mite Pest Management

15 Orchard Diseases

16 Orchard Diseases/Weeds

16 Nematodes

17 Harvesting & Marketing

17 Review

**Course Outcomes**

1. Explain the physiological processes occurring within vineyards/orchards and analyze the management and cultural operations that affect these processes.

1. Demonstrate skills and competencies in pruning, fertilization, pesticide application, systems calibration, and irrigation scheduling and systems evaluation.
2. Perform economic analyses of orchard/vineyard operations and profit and loss scenario.
3. Identify optimum trellis, training and layout systems for tree and vine varieties and special conditions
4. Analyze orchard and vineyard soil and tissue laboratory results and recommend efficient and economical solutions.

**Course Objectives**

1. Identify the general structure and physiology of the fruit trees and grapevines.
2. Identify key growth stages and the operations that are stage sensitive.
3. Demonstrate skills in the area of cultural operations for the maintenance of vineyards and orchards.
4. Identify pests, diseases, nutrient deficiencies, and other stressors.
5. Perform budgets, cash flows and development costs for orchards and vineyards.
6. Learn different marketing strategies for tree fruit, grapes, and wine.
7. Plan irrigation seasonal schedules and amounts.
8. Contrast and compare trellis and training systems.
9. Evaluate soil properties and nutrient status to prescribe optimum fertilizers types and rates, and other necessary amendments.