Las Positas College
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Course Outline for VWT 32

SPRING VINEYARD OPERATIONS

Effective: Fall 2016

I. CATALOG DESCRIPTION:
VWT 32 — SPRING VINEYARD OPERATIONS — 3.00 units

This class has a strong emphasis on the practical applications of viticulture. Students will be involved in the operation of the LPC Campus Hill Vineyard putting into action viticultural practices for the spring season including pruning, canopy management techniques, new vine planting and training, vine nutrition, weed control, irrigation system construction and maintenance, trellis construction and maintenance, vineyard equipment operation and maintenance, with a continued focus on sustainable vineyard management. Students under the age of 21 must have a declared major in either viticulture and/or enology to participate in any tasting activities as stated in the California State Assembly Bill 1989. 2 hours lecture, 3 hours laboratory

2.00 Units Lecture 1.00 Units Lab

Strongly Recommended
VWT 10 - Introduction to Viticulture
with a minimum grade of C

Grading Methods:
Letter or P/NP

Discipline:

	MIN
Lecture Hours:	36.00
Lab Hours:	54.00
Total Hours:	90.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

III. PREREQUISITE AND/OR ADVISORY SKILLS:

Before entering this course, it is strongly recommended that the student should be able to:

A. VWT10
1. discuss the importance of grapes in world history
2. explain the impact that California has had on global wine grape production
3. describe grapevine biology and physiology
4. identify the above and below ground components of the grape vine throughout the seasonal intervals of grape vine development
5. distinguish between specific grape varieties and how they can be utilized in various production programs
6. illustrate the importance of the relationship of soil and climate relative to quality grape and wine production
7. evaluate and manage the seasonal specific requirements of the vineyard and apply the appropriate cultural practices
8. interpret the harvest process from planning through processing
9. analyze the basic tenets of winemaking

IV. MEASURABLE OBJECTIVES:

Upon completion of this course, the student should be able to:

1. list the steps for planting the vineyard including rootstock selection, scion matching, clonal selection, vine row layout specifics, trellis design and irrigation infrastructure planning
2. demonstrate proper training techniques for young vines
3. distinguish seasonal vineyard pest threats and take appropriate actions based on Integrated Pest Management
4. explain how soil types inherently effect the vine, irrigation strategies, vineyard errosion status and overall cultural practices
5. identify any frost threat specific to the site and take appropriate actions through cover cropping, irrigation strategies or timing of pruning
6. accurately assess vineyard water needs and layout a seasonal irrigation strategy to take the vineyard through harvest
7. exhibit how to safely use and maintain misc vineyard equipment
8. describe and apply multiple quality control measures used during the Spring/Summer months in the vineyard including bud thinning, summer pruning, flower thinning, topping, leaf pulling, dep-suckering and cluster thinning
9. detail the vineyard cycle of growth and viticultural practices that must be completed during the spring and summer

V. CONTENT:
- A. Rootstocks and Planting
  1. Rootstocks used
  2. Planting techniques and spacing
     a. Trellis systems of new grape planting
- B. Pruning and Training Young Vines
  1. Dormant season training of young vines
  2. Theoretical aspects of pruning
  3. Pruning mature head trained bilateral cordon trained, spur-pruned vines
  4. Training young vines after budbreak
- C. Grapevine Anatomy and Physiology
  1. Winegrape, table grape and raisin cultivars
  2. Internal and external structures
  3. Photosynthesis and its relationship to cultural techniques
  4. Tissue analysis
     a. Sample collection
     b. Interpretation
- D. Soils and Fertilizers
  1. Soil texture, structure and characteristics
  2. Fertilizer needs
  3. Fertilizer application techniques and equipment
- E. Pest Control
  1. Insect identification and control measures
  2. Weed identification and control techniques
  3. Diseases of grapevines identification and control
  4. Glassy winged sharpshooter
  5. Powdery mildew control
  6. Integrated Pest management
- F. Irrigation theory and practice
  1. Water needs of grapevines
  2. Irrigation system selection and installation
  3. Drip irrigation versus other systems
- G. Techniques of frost control
  1. Mechanical Methods
  2. Cultural Methods
- H. Vineyard Development
  1. Identify the steps necessary for starting a new vineyard
  2. Site selection
  3. Natural resources, habitat and environmental concerns
  4. Vineyard design – trellises and irrigation systems
  5. Installation and planting
- I. Farming Vineyard
  1. Vineyard practices during the cycle of vine growth
  2. Canopy management
  3. Vine mineral nutrition
  4. Sustainable agricultural practices
  5. Methods to improve grape quality
  6. Vineyard Floor Management
  7. Vineyard Equipment
     a. Identify the different equipment used in tissue sampling, analysis and interpretation of results
     b. Explain the difference between a refractometer and hydrometer, and how they each measure berry juice sugar content
     c. Use a variety of viticulture equipment in the vineyard

VI. METHODS OF INSTRUCTION:
- A. **Lecture** -
- B. **Discussion** -
- C. **Lab** - Student hands-on laboratory activities and field practice
- D. **Audio-visual Activity** -
- E. **Field Trips** -
- F. **Demonstration** - Field demonstrations and discussion

VII. TYPICAL ASSIGNMENTS:
- A. Weekly reading assignments in text related to lecture topics
- B. Field Trips at specified locations
- C. Vineyard cultural practices, e.g. Training and pruning
- D. Laboratory/field projects related to viticulture practices

VIII. EVALUATION:
- A. **Methods**
  1. Exams/Tests
  2. Quizzes
  3. Research Projects
  4. Papers
  5. Oral Presentation
  6. Projects
  7. Field Trips
  8. Group Projects
  9. Class Participation
  10. Class Work
  11. Home Work
  12. Lab Activities
  13. Other:
      a. Various reading assignments (texts or other reference materials)
      b. Hands on Practical Assessments
- B. **Frequency**
  1. Exams/Tests, Quizzes will be given throughout the semester: ie) midterm and final and multiple, random quizzes at

instructor's discretion

2. Written (research/industry related) papers as deemed necessary -
3. Oral Presentations and Classroom participation/work will be noted
4. Projects (group &/or individual) & Field Trip participation as planned per semester
5. Reading, Lab and homework assignments weekly
6. Hands on Practical Assessments during appropriate course content

IX. TYPICAL TEXTS:

1. White, Robert. *Understanding Vineyard Soils.* 2nd ed., Oxford University Press, 2015.
2. Goldhammer, Ted. *Grape Growers Handbook.* 2nd ed., Apex, 2015.
3. Keller, Marcus. *The Science of Grapevines.* 2nd ed., Academic Press, 2015.

X. OTHER MATERIALS REQUIRED OF STUDENTS:

A. Industry standard, professional grade vine pruning shears