VIT 52 Course Outline as of Summer 2024

CATALOG INFORMATION

Dept and Nbr: VIT 52 Title: VITICULTURE: SPRING PRAC
Full Title: Viticulture: Spring Practices
Last Reviewed: 9/13/2021

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	2.00	17.5	Lecture Scheduled	35.00
Minimum	3.00	Lab Scheduled	3.00	15	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	5.00		Contact Total	87.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 70.00 Total Student Learning Hours: 157.50

Title 5 Category:	AA Degree Applicable
Grading:	Grade Only
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	AG 57B

Catalog Description:
Viticulture practices for spring including vineyard establishment, training, pest control, soils, frost protection, irrigation practices, quality control measures and vineyard equipment use.

Prerequisites/Corequisites:

Recommended Preparation:
Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:

Schedule of Classes Information:
Description: Viticulture practices for spring including vineyard establishment, training, pest control, soils, frost protection, irrigation practices, quality control measures and vineyard equipment use. (Grade Only)
Prerequisites/Corequisites:
Recommended: Eligibility for ENGL 100 or ESL 100
Limits on Enrollment:
Transfer Credit: CSU;

Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**			Effective:	Inactive:
CSU GE:	**Transfer Area**			Effective:	Inactive:
IGETC:	**Transfer Area**			Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Fall 1981	Inactive:	
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Identify and describe vineyard practices appropriate to late winter and spring time period.
2. Describe the steps required to design a new vineyard, including all compliance requirements.
3. Develop a fertilization and vine mineral nutrition plan for a vineyard.
4. Describe various canopy management techniques and methods for their evaluation.
5. Evaluate spring practices performed and give recommendations for fruit quality improvement.

Objectives:
At the conclusion of this course, the student should be able to:
1. Identify grapevine structures and their functions.
2. Evaluate various methods of pruning as they relate to quality grape production.
3. Evaluate approaches to weed control and pest management using recommend appropriate methods.
4. Identify pest and disease symptoms common in the spring vineyard and recommend appropriate control methods.
5. Compare and contrast the different methods of frost control.
6. Develop an effective fertilization plan for a vineyard.
7. Determine appropriate irrigation system maintenance methods for a vineyard.
8. Describe grapevine canopy management techniques for improving fruit quality.
9. Evaluate specific grapevine canopy management techniques for improving fruit quality.
10. Identify various red cultivars, white cultivars, rootstocks and Vitis species by sight.
11. Identify and describe pieces of vineyard machinery and equipment.
12. Schedule appropriate vineyard farming and management practices for late winter/spring.

Topics and Scope:

I. Grapevine Anatomy, Physiology and Stages of Growth
   A. Internal and external structures
   B. Functions of vine tissues

- C. Spring growth cycle
- D. Eichorn-Lorenz (E.L.) numbers and practical use

II. Pruning Principles
- A. Pruning safety
- B. Types of pruning
  1. Cordon pruning
  2. Cane pruning
- C. Vine balance for improving wine quality

III. Frost Protection
- A. Types of frost events
- B. Temperature inversion
- C. Latent heat of vaporization
- D. Indirect frost protection methods
- E. Direct frost protection methods

IV. Vineyard Mechanization
- A. Tractors
- B. Implements
  1. Cultivation
  2. Spraying
  3. Canopy manipulation

V. Weed Identification
- A. Common vineyard weeds
  1. Monocot vs. Dicot
  2. Annuals, bi-annuals, perennials
- B. Weed control options

VI. Reading and Interpreting Pesticide Labels
- A. Cautionary statements
- B. Safety and Personal Protective Equipment (PPE)
- C. Application rate and dilution per acre
- D. Environmental hazards
- E. Tank mix compatibility
- F. Maximum application per season
- G. Managing pesticide resistance

VII. Propagation and Nursery Operations
- A. Principles of vine propagation
- B. Propagation wood
  1. Scion cuttings
  2. Rootstock cuttings
- C. Types of vines available
  1. Dormant bench-grafted vines
  2. “Greengrowers” grafted vines
- D. Clean wood and virus testing

VIII. Determination of Percentage Budburst
- A. Sampling strategies
- B. Record keeping
  1. Block level
  2. Phenological stages and E.L. numbers

IX. Vineyard Soil Testing
- A. Vineyard soil health definitions
- B. Various soil tests
- C. Criteria for required soil amendments applications
- D. Criteria for required fertilizer applications

X. Vineyard Development
- A. New planting vs. replanting
- B. Design
  1. Spacing, trellis and row direction choices
  2. Rootstock, cultivar and clone choices
  3. Mechanical harvest planning
- C. Compliance
  1. County permits
  2. Biological assessment requirements

XI. Vineyard Pest & Disease Management
- A. Identification of vineyard pests and diseases
- B. Scouting for vineyard pests and diseases
- C. Optimum timings for control strategies
- D. Various types of control strategies
  1. Organic, sustainable, biodynamic, Integrated Pest Management (IPM)
  2. Biological control
  3. Cultural controls
  4. Mechanical and physical controls
  5. Chemical controls

XII. Irrigation System Maintenance and Monitoring
- A. Water delivery systems
  1. Pumps
  2. Water filters
  3. Pressure Regulators
  4. Valves and Gauges
  5. Chemical Injectors
- B. Various irrigation systems
  1. Drip systems
  2. Sprinkler systems
- C. Measuring irrigation system efficiency
  1. Distribution uniformity
  2. Seasonal strategies for testing irrigation system

XIII. Bud Fruitfulness
- A. Definition of bud fruitfulness
- B. Timing and vineyard practices that contribute to bud fruitfulness
- C. Measuring cluster counts accurately
- D. Shoot to cluster ratios

XIV. Vine Mineral Nutrition
- A. Required vine nutrients and critical levels
- B. Vine tissue testing
  1. Timing
  2. Petiole vs blade sampling
- C. Interpreting lab reports
- D. Making appropriate fertilization recommendations according to lab report data.

XV. Vine Training
- A. Canopy management techniques
  1. Shoot thinning
  2. Cluster thinning
  3. Suckering and weak/short shoot removal
  4. Shoot positioning
- B. Canopy evaluation
  1. Richard Smart Vineyard Scorecard

2. Patrick Iland Vineyard and Berry Evaluation Scorecard

XVI. Cultivar, Rootstock and Vitis Species Identification
- A. Wine grape cultivars
  1. Red
  2. White
  3. Selecting suitable cultivars for the growing region
- B. Rootstocks
  1. Parentage
  2. Selecting suitable rootstocks for the soil type and potential soil problems
- C. Vitis Species
  1. Origins
  2. Characteristics
  3. Usefulness for breeding new rootstocks

XVII. Fruit Quality Assurance Planning
- A. Working with the winemaker and winery client
- B. Identifying potential vineyard problems that limit fruit quality
- C. Correlating specific vineyard practices that affect fruit quality
- D. Identifying specific vineyard practices that will improve fruit quality

All lab topics will be aligned with lecture topics.

Assignment:

1. Weekly reading (25 - 50 pages)
2. Weekly homework exercises (2 - 5 pages)
3. Weekly lab reports (3 - 6 pages)
4. Lab activities will include:
   - A. Herbicide Spray recommendation for a vineyard block
   - B. Designing a new vineyard planting plan
   - C. Developing an irrigation system maintenance plan
   - D. Interpreting a Vine Mineral Nutrition Lab Report and making appropriate fertilizer recommendations
   - E. Pruning and training grapevines
5. One midterm and one final exam

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Weekly homework exercises	Writing 10 - 20%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Lab reports and activities	Problem solving 50 - 65%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Pruning and training grapevines	Skill Demonstrations 10 - 15%

Exams: All forms of formal testing, other than skill performance exams.

Midterm, Final Exam	Exams 15 - 30%

Other: Includes any assessment tools that do not logically fit into the above categories.

None	Other Category 0 - 0%

Representative Textbooks and Materials:
Instructor provided materials, weekly pdf files.