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## Course Outline for VWT 31

### VINEYARD OPERATIONS I

Effective: Fall 2004

#### I. CATALOG DESCRIPTION:

VWT 31 — VINEYARD OPERATIONS I — 3.00 units

Viticulture practices for the fall and winter seasons including harvesting, pruning, varietal selection, erosion control, fertilization, weed control, propagation, and vineyard development. Emphasis on practical applications of viticulture. 2 hours lecture, 3 hours laboratory.

2.00 Units Lecture 1.00 Units Lab

#### Grading Methods:

Letter or P/NP

#### Discipline:

	<u>MIN</u>
<b>Lecture Hours:</b>	36.00
<b>Lab Hours:</b>	54.00
<b>Total Hours:</b>	90.00

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

#### III. PREREQUISITE AND/OR ADVISORY SKILLS:

#### IV. MEASURABLE OBJECTIVES:

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

1. define the importance of grapes both historically and currently
2. assess various harvesting methods and the techniques for sampling
3. explain the differences between a refractometer and hydrometer, and how they each measure berry juice sugar content
4. correctly sample and analyze wine grapes for sugar content
5. describe the current approaches to weed control and recommend appropriate chemicals
6. explain how climate, soils and vineyard practices affect vine growth and grape quality
7. explain how vine structure and vine function are related to crop quality
8. describe the different types of thinning or crop control and how it affects grape quality
9. identify various methods of rootstock propagation
10. list the different methods of erosion control
11. describe the types trellis structures and how to purchase the materials needed to install
12. evaluate the different methods of pruning and why they are used on certain varieties
13. identify fall disease symptoms and diseases
14. identify a fall fertilizing plan
15. estimate the size of the grape crop through field observation
16. describe the vineyard cycle of growth and identify viticultural practices that must be completed during each stage of vine growth

#### V. CONTENT:

- A. Brief History and Evolution
  1. Overview of world-wide importance of grapes and grapevines
  2. Grapevine classification and Vitis species
- B. Harvesting Grapes
  1. Vineyard sampling for sugar/acid ratios
  2. Techniques for maturity sampling
  3. Estimating crop size
  4. Care in harvesting
  5. Transportation of grapes
  6. Winery/grower relations
  7. New harvest concepts
- C. Grape Quality
  1. Define
  2. Use of different methods of thinning and crop control
  3. Experiments being conducted
  4. Water needs and soil types for grapes
- D. Weed Control

1. Strip versus broadcast control
2. Age of vine
3. Action of chemical used
4. Currently recommended chemicals
5. Calibration of equipment
6. Non-chemical weed control
- E. Erosion Control
  1. Cover crop needs
  2. Tillage equipment
  3. Fertilization for cover crops
- F. Support for Vines
  1. Types of trellis systems
  2. Purchase of trellising materials
- G. Pruning
  1. Equipment needed
  2. Varieties for head pruning
  3. Varieties for cordon pruning
  4. Varieties for cane pruning
  5. New pruning techniques
- H. Other Fall Activities
  1. Disease symptoms
  2. Fertilization plan

#### 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

#### 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. Field Trips
4. Home Work
5. Other:
  - a. Methods typical examples of evaluation
    1. Two written examinations
    2. Reading and homework assignments from text
    3. Two practical examinations
    4. Quizzes
    5. Student field work reports
  - b. Typical Exam Questions
    1. When selecting soils for growing grapes, heavy clay, very shallow soils, poorly drained soils and soils with high concentrations of salts should be avoided.
      - a. True
      - b. False
    2. Grape growing culture begin in Asia Minor in the region between and to the south of the Black and Caspian seas
      - a. True
      - b. False
    3. In determining the best time or stage of development for picking/harvesting table grapes, the chief consideration are that the grapes should:
      - a. be attractive in appearance and eating quality
      - b. have good shipping and keeping qualities
      - c. reach the market when prices are favorable
      - d. all the above

##### B. **Frequency**

1. 1 1/2 hour written exams equally spaced during semester
2. Quizzes at the instructor's discretion
3. Practical, field midterm and final exam

#### IX. TYPICAL TEXTS:

1. B.G. Coombe & Dry *Viticulture, Vol. 2 Practices*. 1st ed., Winetitles, 1992.
2. - *Grapevine Physiology*, UC DANR, 1981.
3. Richard. Smart and Mike Robinson *Sunlight into Wine*. 1st ed., Winetitles, 1991.
4. A.J. Winkler, James A. Cook, W.M. Kliever, and Lloyd Lider *General Viticulture*. 2nd ed., University of California Press, 1974.

#### X. OTHER MATERIALS REQUIRED OF STUDENTS: