

**WINE 3 Course Outline as of Fall 2022****CATALOG INFORMATION**

Dept and Nbr: WINE 3                      Title: INTRO TO ENOLOGY  
 Full Title: Introduction to Enology  
 Last Reviewed: 9/13/2021

Units	Course Hours per Week		Nbr of Weeks		Course Hours Total	
Maximum	4.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	4.00	Lab Scheduled	3.00	6	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	6.00		Contact Total	105.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 210.00

Title 5 Category: AA Degree Applicable

Grading: Grade or P/NP

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly: WINE 53

**Catalog Description:**

An introduction to the process and science of winemaking. Includes basic viticulture, harvest decisions, crushing, fermentation, pressing, basic wine chemistry, aging and processing, bottling, wine additives, sensory evaluation, use of oak, wine defects, winery equipment, filtration and preparation for bottling. Covers red, white and sparkling wines. Transfers to CSU only

**Prerequisites/Corequisites:**

Minimum Age 18 or older

**Recommended Preparation:**

Eligibility for ENGL 1A or equivalent

**Limits on Enrollment:**

Must be age 18 or older

**Schedule of Classes Information:**

Description: An introduction to the process and science of winemaking. Includes basic viticulture, harvest decisions, crushing, fermentation, pressing, basic wine chemistry, aging and processing, bottling, wine additives, sensory evaluation, use of oak, wine defects, winery equipment, filtration and preparation for bottling. Covers red, white and sparkling wines. Transfers to CSU only (Grade or P/NP)

Prerequisites/Corequisites: Minimum Age 18 or older  
Recommended: Eligibility for ENGL 1A or equivalent  
Limits on Enrollment: Must be age 18 or older  
Transfer Credit: CSU;UC.  
Repeatability: Two Repeats if Grade was D, F, NC, or NP

### **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>	Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>IGETC:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>CSU Transfer:</b>	Transferable	Effective: Fall 2004	Inactive:
<b>UC Transfer:</b>	Transferable	Effective: Fall 2005	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. Demonstrate understanding of important steps in the process and science of red, white, sparkling and dessert winemaking.
2. Relate basic principles of wine chemistry and microbiology to the production of wine.

#### **Objectives:**

In order to achieve these learning outcomes, during the course students will:

1. Understand basic principles of viticulture to make harvest decisions and effectively discuss vineyard practices with viticulturalists.
2. Identify, describe, and make educated choices about each step in the winemaking process.
3. Describe the basic chemistry of important wine components including acids, sugar, alcohol, phenolic compounds, sulfur dioxide and flavor compounds.
4. Compare and contrast the microbes that impact wine, including yeast, malolactic bacteria, and spoilage organisms.
5. Develop a plan to produce a premium wine.
6. Perform wine lab assays used in small to medium-size wineries, and evaluate results.
7. Evaluate wine quality and diagnose spoilage disorders.
8. Implement safe and legally compliant winery practices.

#### **Topics and Scope:**

- I. Basic Viticulture
  - A. Varietal selection
  - B. Rootstocks
  - C. Trellising and training
  - D. Pruning

- E. Crop estimations
- F. Harvest decision-making
  - 1. Lab tests
  - 2. Evaluating flavor
  - 3. Evaluation seed and tannin maturity
- II. Harvest Decisions
  - A. Test Brix
  - B. Test pH
  - C. Test titratable acidity by manual titration
  - D. Test titratable acidity by autotitrator
- III. Starting Fermentation
  - A. Inoculation
  - B. Yeast nutrients
  - C. Test nitrogen (at ETS)
  - D. Test nitrogen (NOPA and ammonia)
  - E. Adding SO<sub>2</sub>
- IV. Processing White Grapes for Wine
  - A. Destemming/crushing
  - B. Programming the press
  - C. Whole cluster pressing
  - D. Cold settling
  - E. Hoses and fittings and cellar organization
  - F. Pump types and usage
  - G. Monitoring fermentation
- V. Processing Red Grapes for Wine
  - A. Destemming/crushing
  - B. Cold soak
  - C. Pumpovers and Punchdowns
  - D. Extended maceration
  - E. Drain and press
  - F. Test phenolics by spectrophotometer
- VI. Malolactic Fermentation - Test Malic by Paper Chromatography
- VII. Aging and Storage
  - A. Storage types and barrel selection
  - B. Going to barrel
  - C. Topping
  - D. Racking
  - E. Monitoring
  - F. Barrel sanitation and storage
- VIII. Fining, Filtration
  - A. Types of filters
  - B. Use of crossflow filter
  - C. Fining types and practices
- IX. Deacidification and Dealcoholization
- X. Wine Packaging and Closures
- XII. Bottling
  - A. Sanitation
  - B. Quality control
- XII. Production of Sparkling and Dessert Wines
- XIII. Cellar Practices and Safety
  - A. Legal requirements
  - B. Sanitation

- XIV. Wine spoilage and Defects
- XV. Sensory Analysis
  - A. Pair test
  - B. Detecting faults
- XVI. Wine Chemistry and Microbiology
  - A. Atomic structure
  - B. Acids
  - C. Sugars
  - D. Nitrogen
  - E. Sulfur dioxide
  - F. Phenolic compounds
  - G. Flavor compounds
  - H. Wine additives
  - I. Wine yeast and bacteria
- XVII. Wine Lab Analysis
  - A. Brix
  - B. pH
  - C. Titratable acidity by manual titration
  - D. Titratable acidity by autotitrator
  - E. SO<sub>2</sub> by Ripper
  - F. CO<sub>2</sub> by carbodoseur
  - G. Heat stability
  - H. Potassium bitartrate stability
  - I. Phenolics by spectrophotometer
  - J. Alcohol by ebulliometer and Alcolyzer
  - K. Malic acid by paper chromatography
  - I. Residual sugar by Fermentest

All lab topics will be aligned with lecture topics.

**Assignment:**

1. Weekly reading (10 - 40 pages)
2. Weekly Problem sets (20 - 50 questions)
3. 10-18 Lab worksheets (2 - 4 pages each)
4. One written winemaking plan (8 - 12 pages)
5. Perform lab assays (6 - 12)
6. Make a wine following commercial production techniques
7. Final lecture exam
8. Final lab 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.

Winemaking plan; lab worksheets
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Writing 10 - 40%
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**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Weekly multiple-choice problem sets; Lab worksheets

Problem solving  
20 - 50%

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

Perform lab assays, make a wine

Skill Demonstrations  
10 - 25%

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

Final lecture exam; Final lab exam

Exams  
20 - 45%

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

Lab participation

Other Category  
5 - 15%

**Representative Textbooks and Materials:**

The University Wine Course: A Wine Appreciation Text and Self Tutorial. 3rd ed. Baldy, Marian. Wine Appreciation Guild. 2012 (classic)

Concepts in Wine Technology, Small Winery Operations. 3rd ed. Margalit, Yair. Wine Appreciation Guild. 2012 (classic)

Wine Science: Principles and Applications. 5th ed. Jackson, Ronald. Academic Press. 2020.  
Instructor prepared lab manual