WINE 55A Course Outline as of Spring 2012

CATALOG INFORMATION

Dept and Nbr: WINE 55A Title: LAB ANALYSIS OF WINES 1

Full Title: Lab Analysis of Wines 1

Last Reviewed: 2/14/2022

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	8	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**

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

Also Listed As:

Formerly: **WINE 55**

Catalog Description:

An introduction to vineyard and winery laboratory practices including basic chemistry principles, laboratory techniques, and commonly used analysis methods for musts and wines.

Prerequisites/Corequisites:

Course Completion of CHEM 8

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:

Description: An introduction to vineyard and winery laboratory practices including basic chemistry principles, laboratory techniques, and commonly used analysis methods for musts and wines. (Grade Only)

Prerequisites/Corequisites: Course Completion of CHEM 8

Recommended:

Limits on Enrollment: Transfer Credit: CSU; Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree: Effective: Inactive: Area **CSU GE: Transfer Area** Effective: Inactive:

IGETC: Transfer Area Effective: Inactive:

CSU Transfer: Transferable Effective: Fall 2004 Inactive:

UC Transfer: Inactive: Effective:

CID:

Certificate/Major Applicable:

Both Certificate and Major Applicable

COURSE CONTENT

Outcomes and Objectives:

Upon successful completion of this course, students will be able to:

- 1. Utilize basic laboratory principles and practices common to the wine industry.
- 2. Effect laboratory tests using appropriate instrumentation.
- 3. Integrate chemistry theory into wine lab practices.
- 4. Perform common laboratory tests used in the wine industry.
- 5. Set up, carry out, and evaluate results of a variety of laboratory trials for analysis of wines.
- 6. Perform the common microbial assays used in the wine industry.
- 7. Evaluate and control quality of lab analyses and wine products.

Topics and Scope:

- I. Applying Chemistry Theory in a Wine Lab Setting
- A. Chemical analysis
- B. Reviewing procedures
- C. Assembling reagents
- D. Preparing instrumentation
- E. Preparing samples
- F. Performing assays
- G. Collecting and recording data
- II. Basic Laboratory Skills
- A. Basic acid/base and biochemistry skills
- B. Use and care of glassware and lab equipment
- C. Scientific notation
- D. Disposing of old samples
- E. Distributing samples to appropriate lab areas F. Maintaining sanitation in lab areas
- III. Instrumentation
- A. Centrifuges
- B. Refractometers
- C. Conductivity meters

- D. HPLC (High Performance Liquid Chromatography)
- E. Nephalometers
- F. Thermometers
- G. Density meters
- H. Hydrometers
- I. Aeration oxidation
- J. Cash still
- K. Spectrophotometer (UV and VIS)
- L. Gas chromatography
- M. Ebulliometer
- N. pH meter
- O. DI (deionized water unit) system
- IV. Common Laboratory Tests
- A. Trials
- 1. Stability trials
- 2. Brix
- 3. Total acidity (TA)
- 4. Total acidity determination pH
- 5. Ammonia
- 6. Amino assimilable nitrogen
- 7. Soluble solids
- 8. Potassium
- 9. Volatile acidity
- 10. Total and free SO2
- 11. Alcohol determination
- 12. Malic acids
- 13. Residual sugar/glucose
- 14. Dissolved oxygen15. Color/phenols16. Cold stabilities

- 17. Heat stabilities
- 18. Heavy metals (iron, copper)
- B. Spectrophotometer Measurements
- C. Paper Chromatography
- D. Microbial assays
- V. Quality Assurance and Control
- A. Quality Assurance
- B. Standardizing chemicals
- C. Verifying assay acceptability
- D. Completing analysis logs
- E. Correctly labeling samples
- F. Verifying analysis
- G. Maintaining handwritten data

Assignment:

- 1. Weekly lab analyses
- 2. In-lab microbial assays3. Weekly lab reports
- 4. Midterm; final exam
- 5. Reading 20 30 pages per week

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.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments are more appropriate for this course.

Writing 0 - 0%

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

Lab reports and analyses; microbial assays

Problem solving 40 - 70%

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

None

Skill Demonstrations 0 - 0%

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

Midterm and final: multiple choice, true/false, matching items, completion, short answer.

Exams 30 - 50%

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

Attendance and participation

Other Category 0 - 10%

Representative Textbooks and Materials:

Wine Analysis and Production. Zoecklein, Bruce W. et. al., Aspen, 1995. (classic) Instructor prepared materials