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
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
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:	**Area**			Effective:	Inactive:
CSU GE:	**Transfer Area**			Effective:	Inactive:
IGETC:	**Transfer Area**			Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Fall 2004	Inactive:	
UC Transfer:		Effective:		Inactive:	

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 oxygen
15. Color/phenols
16. 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 assays
3. 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