

Student Learning Outcomes Assessment Plan

Department of Viticulture and Enology
Bachelor of Science Degree Program - Enology
California State University, Fresno
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Student Outcomes Assessment Plan (Soap)

I. Mission Statement

To provide undergraduate and graduate education, research, and outreach programs in viticulture and enology through a rigorous academic program of study accompanied by practical, hands-on training, and a continuously evolving education program.

II. Goals and Student Learning Outcomes

Goal 1: Provide students with an education in modern, scientifically based, economically sound and, environmentally wise wine production.

- Objective 1.1: Understand the process of modern wine production and the production of different types and styles of wine
- Objective 1.2: Understand the sensory aspects of wine and the sources and causes of both positive and negative sensory descriptors
- Objective 1.3: Understand the chemistry and microbiology of wine and regulatory aspects associated with wine composition

Goal 2: Provide students with the ability to apply fundamental knowledge of modern wine production to new situations.

- Objective 2.1: Critically evaluate physical and chemical information regarding wine composition
- Objective 2.2: Understand the importance of collection and analysis of process sample data and interpretation of those data
- Objective 2.3: Assess the relative validity of several possible solutions to a problem
- Objective 2.4: Understand the financial and environmental aspects associated with modern wine production

Goal 3: Provide students with the ability to apply modern wine production skills to complex real-world situations.

- Objective 3.1: Identify current issues of ethics and social responsibility associated with wine production and management
- Objective 3.2: Understand management skills necessary to effectively manage modern wine production operations
- Objective 3.3: Understand modern operations and systems for winery management

- Objective 3.4: Understand how to effectively secure and utilize information in order to remain competitive in the local, national, and/or international wine industries

III. Curriculum Map (Matrix of Courses X Learning Outcomes)

Course No.	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ
	1.1	1.2	1.3	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4
Major Requirements											
ENOL 15	I	I	I								
ENOL 45	I	I	I								
ENOL 105	R	R	R	I	I	I					
ENOL 114		R	R	R	R	R	I		I	I	
ENOL 116		R	R	R	R	R	I		I	I	
ENOL 125		A	A		A	A		I	R	R	
ENOL 135							R	I	I	I	I
ENOL 151	A					A	R		R	R	I
ENOL 163	I	A	A	R							
ENOL 164	A	A	A	A	A	A	R	I	R	R	
ENOL 166		A	A	A		A	A	R	A	A	R
ENOL 175						A	A	A	A	A	A
ENOL 199						A	A	A	A	A	A
VIT 101		R	R		R						
VIT 102		R	R		R						
VIT 106		R	R		R						
Additional Requirements											
BIOL 11											

BIOL 161												
CHEM 1A												
CHEM 1B												
CHEM 8												
CHEM 105												
CHEM 150												
DS 71												
AGBS 1												
BIOL 120												
PLANT 105												
SW 100												
SW 100l												
UDWR												

I = Introduced; R = Reinforced; A = Advanced

IV. Assessment Methods

A. Direct Measures (at least three)

1. Objective 1.1: Understand the process of modern wine production and the production of different types and styles of wine

Enology 163: Home winemaking, research winemaking and industrial winemaking students are required to complete a Laboratory notebook to include detailed notes of procedures, with dates and reasons for specific procedures. Students will be evaluated by the content of their laboratory notebooks. All students will be expected to provide weekly verbal reports to the class on their activities.

2. Objective 1.2: Understand the sensory aspects of wine and the sources and causes of both positive and negative sensory descriptors

Enology 105: Students will be evaluated for the following:

1 – (assignment #1) to both prepare their own (3-4) and assess other student's aroma

reference standards (total of 24) as part of learning to assess positive sensory aspects of wine derived from fruit, fermentations, and oak.

2 – (assignment #2) to conduct two different discrimination tests using products of their choosing as part of learning about thresholds, differences in individual perception, and impacts (or lack of) of winemaking procedures on sensory aspects of wine.

3 – Students will have the quantitative skill to do required calculations for spiking wines with pure compounds, especially for the analysis of faults in wine. Such a problem is given at the beginning of the term. It is repeated on both midterms and the final exam until all students can demonstrate this capability.

4 – Students will develop tasting skills to identify the basic tastes and faults in wine. Tasting of wines spiked with sugars, acids, bitter compounds, salt, and umami and wines spiked with fault compounds is a weekly exercise. A practical test encompassing identifying tastes and faults in wines is part of the final exam.

3. Objective 1.3: Understand the chemistry and microbiology of wine and regulatory aspects associated with wine composition

Enology 116: Students are required to learn the TTB limits and regulations for parameters evaluated in lab and discussed in lecture regarding production and labeling of alcohol content, sulfites, limits for V.A., etc., (although largely been included already). Students are required to provide a table of these values as part of a study guide for tests and including test questions. Students will be evaluated by their table of values and the test questions provided

4. Objective 2.1: Critically evaluate physical and chemical information regarding wine composition

Enology 116: Students will be required to learn what constitutes desirable and undesirable (spoilage) parameters and what the limits are in terms of a marketable product. Students will be evaluated on their examples given for spoilage in conjunction with regulatory aspects and will also be evaluated on their samples for lab analysis during lab sessions.

5. Objective 2.2: Understand the importance of collection and analysis of process sample data and interpretation of those data

ENOLOGY 125: Laboratory notebooks and a practical examination will be used to evaluate students in Wine Microbiology. Students are required to keep a record of all their activities in a laboratory notebook. A comprehensive practical exam tests students' ability to identify specimens under the microscope, carry out fundamental procedures and calculations, and draw conclusions from data.

6. Objective 2.3: Assess the relative validity of several possible solutions to a problem

Enology 164: Students will be evaluated on at least one situational question, which has

more than one correct answer, on each exam to assess how well students can reason through the problem.

7. Objective 2.4: Understand the financial and environmental aspects associated with modern wine production

Enology 166: Through consistent exam questions, students will be evaluated on merits/deficiencies of current and emerging technology in terms of processing/economic considerations as well as energy consumption and waste stream management.

8. Objective 3.1: Identify current issues of ethics and social responsibility associated with wine production and management

Enology 166: Processing discussions include consideration of the winery's/winemaking staff's role as members of the larger community including environmental (VOC pollution, noise abatement and safety) as well as social concerns including, but not restricted to, proactive in-house and community alcohol awareness programs. Students will be evaluated on their ability to identify issues and respond to those issues in a sound way.

9. Objective 3.2: Understand management skills necessary to effectively manage modern wine production operations

Enology 164: Students are required to direct winery operations at least one time during the semester and will be evaluated on this exercise.

10. Objective 3.3: Understand modern operations and systems for winery management

Enology 175: Students will be evaluated on a project that requires the students to start a 5-10K case winery including land acquisition, permits, building construction, equipment, labor, taxes, revenues, cost, etc. The information is presented to the class during oral presentations.

11. Objective 3.4: Understand how to effectively secure and utilize information in order to remain competitive in the local, national, and/or international wine industries

Enology 175: Students will be evaluated on their ability to develop a marketing plan that will set their brand apart from the competition, and help their winery stay relevant in today's market.

B. Indirect Measures (Alumni Survey is required)

1. Alumni Surveys: The effectiveness of enology student education will be assessed by analyzing alumni survey data.

V. Student Learning Outcomes X Assessment Methods Matrix

Course No.	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ
	1.1	1.2	1.3	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4
1. ENOL 105		X									
2. ENOL 116			X	X							
3. ENOL 125					X						
4. ENOL 163	X										
5. ENOL 164						X			X		
6. ENOL 166							X	X			
7. ENOL 175										X	X

VI. Timeline for Implementation of Assessment Methods and Summary Evaluations

Course No.	Assessment Method	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ
		1.1	1.2	1.3	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4
Year 2011 to 2012	2, 3, AND 4	X		X	X	X						
Year 2012 to 2013	1, AND 5		X				X			X		
Year 2013 to 2014	6, AND 7							X	X		X	X

VII. Closing the Loop - Summary Evaluation, Curriculum Adjustment, and Reporting

The department of Viticulture and Enology will meet for a department retreat prior to the start of classes in the fall semester. At this meeting, faculty will examine the data gathered from the assessment activities the previous academic year. The discussion will consist of two parts. The first part will address whether the data indicate that our majors are meeting our student learning outcome standards. If the answer is positive, no further action is required. If the answer is negative, then discussion will address the changes necessary to improve student performance. Potential changes could include at least one of the following: adjustments of student learning outcome standards; modifications of syllabi or

assignments in one or more courses; substantial revisions of existing courses, proposal of new courses; minor modifications of major requirements; and, substantial modifications of major requirements. Depending on the courses involved and the actions necessary, specific faculty members will be tasked with completing the agreed upon changes.