

# JCAST

## Department of Viticulture and Enology, B.S. in Enology

### Student Outcomes Assessment Plan (SOAP)

#### I. Mission Statement

The mission of the Department of Viticulture and Enology at California State University, Fresno, is:

- To train the future leaders of viticulture and enology through education and research
- To conduct solution-driven research for the grape and wine industry
- To disseminate knowledge and information to the grape and wine industry, and community

#### II. Goals and Student Learning Outcomes

##### Goal I: To educate students in theoretical and practical knowledge of wine science

*Upon culmination of the Bachelor of Science in Enology, students will be able to:*

- Outcome**
- 1.1 Name and identify key microorganisms for wine science, and utilize them in the winemaking process
  - 1.2 Understand key elements and chemical processes of grapes and wine, and utilize them appropriately in the winemaking process
  - 1.3 Identify and define organoleptic properties of wine, including their chemical and/or microbiological origin, and evaluate and manage these properties in wine
  - 1.4 Analyze wine through standard industry practices and create wine profiles from resulting data

##### Goal II: To educate students in current wine production practices in the field and winery

*Upon culmination of the Bachelor of Science in Enology, students will be able to:*

- Outcome**
- 2.2 Analyze grape quality through organoleptic and technical methods and apply resulting data in vineyard, harvest, and wine management
  - 2.2 Identify major and key minor grape varieties and describe their properties and resulting wine style
  - 2.3 Practice vinification techniques, demonstrating knowledge of fermentation, maceration, and other early wine production variables
  - 2.4 Practice cellaring techniques, demonstrating knowledge of post-fermentation processing of wine and associated chemical changes
  - 2.5 Practice blending techniques, demonstrating knowledge of sensory evaluation and resulting practices related to managing wine style and quality attributes

2.6 Demonstrate understanding and application of final wine processing and packaging technologies

2.7 Know and demonstrate proper use of winery technology and equipment

**Goal III: To educate students in current regulations as well as best practices in wine business and marketing**

*Upon culmination of the Bachelor of Science in Enology, students will be able to:*

**Outcome** 3.1 Demonstrate a general knowledge of wine and winery regulations at the federal and California state levels, including the ability to identify appropriate sources for regulatory compliance information

3.2 Compare and contrast established wine business best practices and models, and create a plan using these practices as related to identified business objectives in establishment, maintenance, and expansion phases

3.3 Compare and contrast established wine marketing and sales practices and create a marketing and sales plan using these practices as related to identified business objectives in establishment, maintenance, and expansion phases

**Goal IV: To prepare students with practice in applied skills necessary for wine industry workplace leadership**

*Upon culmination of the Bachelor of Science in Enology, students will be able to:*

**Outcome** 4.1 Demonstrate the ability to access grape industry knowledge through core resources

4.2 Manage knowledge and information towards achieving project objectives

4.3 Synthesize knowledge and information to achieve objectives and products as assigned

4.4 Communicate, interpret, and evaluate knowledge effectively through oral, written, and visual mediums

### III. Curriculum Map

I= Introductory      R= Reinforced through Application      M= Mastered through Synthesis

	ENOL15 <i>Intro to Enol.</i>	ENOL45 <i>Wine Eval.</i>	ENOL105 <i>Adv. Sensory</i>	ENOL110 <i>Grape Wine Chem.</i>	ENOL115 <i>Analy. Methods of Wine</i>	ENOL125 <i>Wine Microbio .</i>	ENOL140 <i>Wine Regs</i>	ENOL151 <i>Winery Eqpmnt.</i>	ENOL163 <i>Ferm Lab</i>	ENOL164 <i>Wine Analysis/ Prod.</i>	ENOL166 <i>Cellar Ops</i>	ENOL170 <i>Wine Business</i>	ENOL173 <i>Wine Marktng.</i>	ENOL175 <i>Winery Mgmt.</i>	ENOL194 <i>Internship</i>	ENOL199 <i>Undergrad Sem.</i>		
1.1					I	R			M	M					The internship experience will allow students to demonstrate mastery of learned skills through application in an industry setting. Outcomes mastered will depend on internship placement and design.	Course outcomes and their industry application will be reinforced through lectures delivered by guests from diverse industry sectors		
1.2		I		R					M	M								
1.3	I	R	M	R		R			M									
1.4	I	R	M		R					M								
2.1	I	I		R	R				M	M	R							
2.2	I	R	M							M								
2.3									M	M	R							
2.4								I	M	M	R							
2.5									M	M	R							
2.6								I	R	M	R							
2.7					R			M	R	M	R	R					R	
3.1					R			I	R				R				R	
3.2			R									M	R				R	
3.3			R									R	R				I	
4.1				I					R	R		M	R				M	
4.2			R	I					M	R		M	R				M	
4.3			R	I					M	R		M	R		M			
4.4			R	I	R				M	R		M	R		M			

#### IV. Assessment Methods

##### A. Direct Measures (at least three)

**Method of Assessment: Final Sensory Exam, Tasting Final, and Final Project** Administered in ENOL 105, these final exams are intended to address the suite of concepts related to sensory evaluation including organoleptic evaluation, consumer testing, and data reporting.

**Tasting Final** Students perform a blind tasting, and must identify the component of taste or aroma in spiked wines. This assesses student ability to identify major sensory elements of wine.

**Final Exam** The final exam is non-comprehensive, and assesses student comprehension and retention of course material from midterm two to the final. Topics covered include: consumer testing, astringency, salivation, and flavor chemistry related to grapes, fermentation, and oak.

**Consumer Test** Students, working in teams, select one of the two consumer tests discussed in class and perform this test in an appropriate sensory situation. Students present the methods, results, and conclusions generated from their consumer test to the class as a PowerPoint presentation.

**Benchmark To Be Determined**

**Outcomes assessed** 1.3, 1.4, 4.2, 4.3, 4.4

**Method of Assessment: Wine Analysis Laboratory Reports** Administered in ENOL 115, students are evaluated on their ability to perform proper laboratory procedures for wine analysis, and communicate those methods appropriately via lab reports. Lab topics include: lab procedures, grape sampling and processing, TSS on grape juice, pH and TA, acid additions and pH adjustment, VA, alcohol analysis, sulfur dioxide measurement/procedures, sugar reduction, YAN methods, chromatography, tartrate stability, atomic absorption, and measuring oxygen in wine.

**Benchmark To Be Determined**

**Outcomes assessed** 1.1, 1.4, 2.1, 2.7, 3.1, 4.4

**Method of Assessment: Microbiology Final Exam and Laboratory Exam** Administered in ENOL 125, the exam consists of a combination of multi-choice, short answer, and essay questions, assess student retention and comprehension of lecture material to term. Topics covered include: microscopy and microbial cultures, microbiology in the vineyard, and yeast structure, function, genetics, metabolism, and fermentation physiology/products, starter cultures and adjuncts, problem fermentations, biofilms, sanitation, malolactic

fermentation, lactic acid bacteria, acetic acid bacteria, and microbial spoilage. The laboratory final exam assesses student ability to use a microscope, to identify key microorganisms and micro-materials in wine, and manipulate and report data.

**Benchmark To Be Determined**

**Outcomes assessed** 1.1, 1.2, 1.3, 1.4, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7

**Method of Assessment: Standard Operating Procedures** Administered in ENOL 151, the Winery Standard Operating Procedures are designed to assess student ability to synthesize lecture and laboratory practice into a written document organized to guide winery best practices in regards to machinery and facility operation, upkeep, and safety.

**Benchmark To Be Determined**

**Outcomes assessed** 2.3, 2.4, 2.5, 2.6, 2.7, 3.1, 4.3, 4.4

**Method of Assessment: Wine Production Literature Review and Oral Presentation** Administered in ENOL 164, a group of 3 to 4 students will conduct a literature review on a specific grape varietal grown in US or other parts of the world. Emphasis should be placed on wine production practices used for this variety and how these practices might differ from other varieties used to produce a similar wine style. Students will be evaluated on their ability to complete the literature review successfully, including the works cited page in ACS format, as well as their ability to incorporate the works referenced appropriately into the literature review.

**Benchmark To Be Determined**

**Outcomes assessed** 2.1, 4.1, 4.2, 4.3, 4.4

**Method of Assessment: Business Plan** The business plan is comprised of several elements, and is intended to assess student ability to synthesize course concepts into applied practice. This is considered one of the culminating projects of the B.S. in Enology. To assess effectiveness of the business plan, a component of the plan is peer-evaluated. Students present ten minute "pitches" of their business plan to the class, who are acting like investors with a set amount of cash. The class then decides whom to invest their monies into, based on the qualities of the business plan pitches. For the instructor, a more equal distribution of investment dollars signifies more students in the class were able to successfully achieve business plan objectives.

**Benchmark To Be Determined**

**Outcomes assessed** 2.2, 2.6, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3, 4.4

## **B. Indirect Measures**

**Graduating Student Exit Survey and Interview** Graduating students are interviewed by the department chair, and then are administered a survey to gather their perception of course content, instructors and instruction, facilities, and library resources. See attached survey (Appendix X).

**Recent Alumni Reflective Survey** Recent alumni (3-5 years since graduation) are surveyed to assess their perception of course content, its impact on their performance and growth in the industry, and any gaps in course content reflected by current industry demands. See attached survey (Appendix X).

**Industry Partners Survey** Major, midsize, and small companies who have a record of employing Fresno State Viticulture and Enology graduates are surveyed to assess their perception of Fresno State alumni employee performance in technical, applied, and leadership areas. See attached survey (Appendix X).

**V. Student Learning Outcomes x Assessment Methods Matrix: Direct Measures**

	Final Sensory Exam, Tasting Final, and Final Project	Wine Analysis Laboratory Reports	Microbiology Final Exam and Laboratory Final Exam	Standard Operating Procedures	Wine Production Literature Review and Oral Presentation	Business Plan
1.1		x	x			
1.2			x			
1.3	x	x	x			
1.4	x	x	x			
2.1		x			x	
2.2			x			x
2.3			x	x		
2.4			x	x		
2.5			x	x		
2.6			x	x		x
2.7		x	x	x		
3.1		x		x		x
3.2						x
3.3						x
4.1					x	x
4.2	x				x	x
4.3	x			x	x	x
4.4	x	x		x	x	x

## **V. Timeline for Implementation of Assessment Methods and Summary Evaluations**

Indirect assessments (graduating student survey, recent graduate survey, and industry survey) will be performed annually.

### **AY 2015/2016**

Final Sensory Exam, Tasting Final, and Final Project

### **AY 2016/2017**

Wine Analysis and Laboratory Reports

### **AY2017/2018**

Microbiology Final Exam and Laboratory Final Exam

### **AY2018/2019**

Stand Operating Procedures

Wine Production Literature Review and Oral Presentation

### **AY2019/2020**

Business Plan



## **VI. Process for Closing the Loop**

The Department of Viticulture and Enology will form an assessment committee, with the Assessment Coordinator serving as chair. The Assessment Committee will be responsible for collecting assessment data, including not only performance data, but also assessment measure design and assessment performance samples. It will be this committee's charge to analyze these measures, and report to the Department faculty their findings and suggestions for larger discussion and implementation. This data and resulting recommendations/changes will also be reported to the Department chair to serve as a key element of the Department Annual Report.

The Assessment Committee will also analyze indirect measures, including discrete assessment programs that impact curriculum and instruction. This practice will support "big picture" thinking in regards to student outcomes, and also connect classroom practices to industry needs, solidifying the Department's commitment to prepare our learners to be leaders in the grape, raisin, and wine industries.