

# Student Learning Outcomes Assessment Plan

Department of Viticulture and Enology  
Bachelor of Science Degree Program - Viticulture  
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 grape production.

- Objective 1.1: Understand the biology of the grapevine with an emphasis on plant structure, function, and physiology
- Objective 1.2: Understand the genetic and cultural diversity of the grapevine
- Objective 1.3: Understand major grapevine production operations
- Objective 1.4: Understand the basic principles in relation to grapevine response to physical and chemical environment

Goal 2: Provide students with the ability to apply fundamental knowledge to modern grape production practices.

- Objective 2.1: Critically evaluate information regarding grapevine structure and function
- 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 grape production

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

- Objective 3.1: Identify current issues of ethics and social responsibility associated with grape production and management
- Objective 3.2: Understand management skills necessary to effectively manage modern vineyard production operations
- Objective 3.3: Understand modern operations and systems for vineyard management
- Objective 3.4: Understand how to effectively secure and utilize complex information in order to

remain competitive in the grape industry

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

Course No.	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4
Major Requirements												
ENOL 15												
ENOL 45												
VIT 101	R	R	R	R	I	R						
VIT 102	R	R	R	R	R	I	I	I		R	R	I
VIT 103		A	A	A	R	R	A	A	A	A	A	A
VIT 105		A	A	R	R	R	A	A	A	A	A	A
VIT 106		A	A	R	R	R	A	A	A	A	A	R
VIT 160									R	R	R	R
VIT 165									R	R	R	R
VIT 196					A	A	A	A	A	A	A	A
VIT 199					A	A	A	A	A	A	A	A
PLANT 150	A	A	A	A	R	R	R	R	R			
PLTH 103	A	A	A	A	R	R	R	R				
PLTH 105	A	A	A	A	R	R	R	R				
PLTH 106	A	A	A	A	R	R	R	R				
Additional Requirements												
BIOL 11												
BIOL 161												

CHEM 3A													
CHEM 8													
CHEM 150													
AGBS 1													
PLANT 99													
PLANT 105													
SW 2													
SW 100													
SW 100l													
SW 101													
ELECTIVES (6 Units in consultation with faculty advisor from the below courses)													
AGBS 31													
AGBS 110N													
AGBS 117													
AGBS 120													
AGBS 130													
ENOL 135													
ENOL 163													
ENOL 175													
I = Introduced; R = Reinforced; A = Advanced													

**IV. Assessment Methods**

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

- Objective 1.1: Understand the biology of the grapevine with an emphasis on plant structure, function, and physiology

VIT 101: A series of laboratory reports are required as a part of the course. The purpose of

the laboratory reports are to give students the opportunity to closely examine and deduce the morphology and anatomy of grapevines through ampelographic exercises to identify grapevine cultivars correctly in the field. The report includes a leaf and shoot collection for the eight major rootstocks used in California. Another laboratory report is required in correct assessment of grapevine water status in the field of flooded and nonirrigated vineyards. The students are assessed depending on their knowledge of primary xylem physiology, radial growth, growth and function of the grapevine in a commercial setting. Plant structure and physiology is assessed through a written report of the pruning laboratories that are assessed over six weeks of grapevine pruning and relating vine vigor to production physiology.

2. Objective 1.2: Understand the genetic and cultural diversity of the grapevine

VIT 165: Students are instructed on the taxonomy and ampelography of major grapevine rootstocks and cultivars. Students are then evaluated with ampelographic collections of rootstocks and cultivars based on the information presented within these reports including taxonomic tree, geographic location and production characteristics. As part of a laboratory final, students are also evaluated on their ability to identify rootstocks and cultivars.

3. Objective 1.3: Understand major grapevine production operations

VIT 102: A vineyard establishment and management report is required as part of the course. The purpose of this assignment is to give students an opportunity to closely examine and study the establishment and management of a new vineyard up to the fourth year for raisin, table, or wine grape production. The vineyard of student's choice should be a commercially viable unit. Students will be evaluated on the information presented in their reports, including geographical location, climate, soil condition and soil preparation, water supply and irrigation system, vineyard design and planting, equipment and facilities, and vineyard management.

4. Objective 1.4: Understand the basic principles in relation to grapevine response to physical and chemical environment

VIT 102: Grapevine's response to damaging temperatures for physical environment and to plant growth regulators for chemical environment will be covered in the lectures and labs. Students will be exposed to techniques in evaluating winter damage, frost injury, and effect of plant growth regulators. Lab reports are required and will be used to evaluate students' effort and performance.

5. Objective 2.1: Critically evaluate information regarding grapevine structure and function

VIT 101: The response of grapevines to pruning and training systems will be covered in lectures and labs. Students are exposed to different training systems for grape commodities as they relate to whole plant physiology. Lab reports are required and will be used to evaluate students' retention of secondary xylem structure and function to productivity. The lab reports include the amount of wood collected during dormant pruning, and is related to

crop harvested and amount of leaf area carried during the growing season to explain variation in fruit composition. The students are then assessed in their final exam on their ability to explain the relation of vine balance to grapevine structure and function.

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

VIT 106: Mini research projects are assigned to groups of students. Under the supervision of the instructor, students are required to design an experiment to demonstrate the importance and the proper protocol for each lab topic, conducting the experiment, collecting data, analyze data, and present their results to the class. Students will be evaluated by the originality, quality, and presentation of their experiments.

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

VIT 103: Drying or dehydration, one of the most important components of raisin production and related problems, will be covered in details during lectures and labs. Students will be exposed to several solutions to the same issue. Lab reports will be required for each and students will be evaluated by the content of their reports.

8. Objective 2.4: Understand the financial and environmental aspects associated with modern grape production

VIT 105: Production and Marketing of Table Grapes. Operating budget development and marketing are covered in lectures and labs, including developing a budget for vineyard management, variety availability and demand, merchandising and promotion, as well as domestic and international marketing systems. A written report and an oral presentation are required for a special assignment on in-depth study of a specific table grape variety. Students will be evaluated by the content of their report and presentation.

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

VIT 196: Students are instructed on ethical and socially responsible farming practices and on the development of an operational budget for a commercial vineyard. This includes for example, pest control in a residential area, including promotion of the resultant crop to a marketing cooperative based on the cultural practices applied. A written report and an oral presentation to the instructor and grape buyer are required on in-depth study of the grape variety being studied. Students are evaluated on their ability to bring the crop to commercial ripeness by following ethical socially responsible farming practices.

10. Objective 3.2: Understand management skills necessary to effectively manage modern vineyard production operations

VIT 196: Students are required to manage vineyard operations for a block of vineyard on the University farm as a senior project, and are evaluated on this exercise.

11. Objective 3.3: Understand modern operations and systems for vineyard management

VIT 105: A series of lab reports are required to assess students on their ability to plant new vineyards with new cultivars using current machinery, schedule irrigation, and arrange for harvest logistics at the end of these classes.

12. Objective 3.4: Understand how to effectively secure and utilize complex information in order to remain competitive in the grape industry

VIT 196: Students are assessed on their ability to apply cultural practices using the University Farm Laboratory in growing and marketing a grape crop. Students are required to participate in the day-to-day management and operations of the university vineyard, and are assessed in their ability to do field plotting, record keeping, recognizing key phenological events as they pertain to vineyard functions. A report of all essential vineyard functions including yield estimation and final yield per acre based on their cultural practices is used to assess the students depending on the pack out value of the resultant crop.

**B. Indirect Measures** (*Alumni Survey is required*)

1. Alumni Surveys: The effectiveness of viticulture 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	OBJ
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4
1. VIT 101	X				X							
2. VIT 102			X	X								
3. VIT 103							X					
4. VIT 105								X			X	
5. VIT 106						X						
6. VIT 165		X										
7. VIT 196									X	X		X

**VI. Timeline for Implementation of Assessment Methods and Summary Evaluations**

Course No.	Assessment Method	OBJ 1.1	OBJ 1.2	OBJ 1.3	OBJ 1.4	OBJ 2.1	OBJ 2.2	OBJ 2.3	OBJ 2.4	OBJ 3.1	OBJ 3.2	OBJ 3.3	OBJ 3.4
Year 2011 to 2012	1 and 2	X		X	X	X							
Year 2012 to 2013	3, 4, and 5						X	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.