

**August 21, 2013**  
**Student Learning Outcomes Assessment Plan (SOAP)**

Master of Science in Viticulture and Enology

Department of Viticulture and Enology Graduate Program  
California State University, Fresno

**Background:**

The Department of Viticulture (DVE) offers graduate training with the opportunity to specialize in either enology or viticulture. One graduate degree is offered, the Master of Science in Viticulture and Enology. The MS in Viticulture and Enology degree requires a formal thesis following the completion of a replicated field-and/or laboratory-based research project.

**Mission Statement:**

The graduate program of DVE will provide for development of an advanced knowledge level, development of research abilities and the mentoring of future leaders that is consistent with those of the university and college and is aligned with the industry needs in this region. Students will learn field and/or laboratory techniques and will conduct independent research within the DVE focus. They will also acquire skills necessary for communicating scientific information to professional scientific peers, as well as to the industry.

**Learning Goals and Objectives for DVE Graduate Students**

**GOAL 1.** Enhance the student's depth of understanding of selected topics in viticulture and enology.

**Objective 1.1.** Graduate students will acquire content knowledge in specific areas in order to generate primary literature for thesis research.

**Objective 1.2.** Graduate students will broaden their knowledge in disciplines that are related to, or supportive of, thesis research.

**GOAL 2.** To cultivate skills for acquiring knowledge in enology and viticulture, both for matriculation and life-long learning.

**Objective 2.1.** Graduate students will demonstrate an ability to learn and conduct research, both independently and collaboratively.

**GOAL 3.** To increase the student's understanding of experimentation, observation and data analysis, and their application to defined questions in enology and viticulture.

**Objective 3.1.** Graduate students will apply scientific method and hypothesis testing for the design and implementation of a formal thesis research project.

**Objective 3.2.** Graduate students will analyze experimental or observational results by the application of quantitative methods where appropriate.

**GOAL 4.** To develop an awareness of available tools and fiscal limitations of conducting specific research endeavors.

**Objective 4.1.** Graduate students will demonstrate grantsmanship and writing skills for acquiring internal and/or external funds for conducting graduate research.

**GOAL 5.** To enhance communication skills, both written and oral, for purposes of conveying viticultural and enological information to both scientists and the industry.

**Objective 5.1.** Graduate students will present scientific content in the form of graduate seminars, lectures, and talks at professional scientific meetings, field days, extension meetings at a level commensurate with standards of academic discourse.

**Objective 5.2.** Graduate students will organize and write the results of original research consistent with standards in primary, peer reviewed enology, food science, horticulture, plant science, viticulture literature.

**Objective 5.3.** Graduate students will cultivate skills for formal job seminars and interviews.

### **Assessment of Selected Objectives**

Initial assessment of graduate student learning outcomes in the DVE will include quantitative measures of success in meeting specific objectives under Goals 3, 4, and 5. These objectives are associated with application of scientific method and experimental design, quantitative analysis techniques, grantsmanship, writing ability, seminar presentation and participation and the quality of the final Master's Thesis. In particular, these objectives were chosen on the basis of specific numerical measures that can be applied to assess the Department's success in meeting the objectives. The following assessment measures represent some of the possible avenues by which the Department can assess graduate student outcomes.

#### **1. Assessment of the Master's Thesis:**

Primary Trait Analysis of the Master's Thesis will be one focus of the assessment plan for the graduate program in the DVE. This assessment will be conducted formatively during the development of the thesis, and summatively at the end of the academic program.

Assessments will be carried out by the graduate student's Thesis Committee early in the writing process (formative assessment), as well as through the Best Thesis Award Committee appointed by the DVE Chair (summative assessment). Assessment techniques used by the Committee will provide an additional objective measure with which to judge thesis quality.

Assessment will be based on scoring rubrics to measure the quality of specific primary traits of the thesis (i.e. learning objectives). Committee members will score each of the Department's theses for five primary traits that represent specific learning objectives as outlined below. The sum of these scores across all theses will represent an assessment score for each faculty committee member. The average assessment score for each primary trait across all committee members will be the Departmental Assessment score for that primary trait. The scoring of individual theses during assessment will also constitute an objective means for selecting the student to receive the 'Best Thesis Award' in the Department and be forwarded to the University level competition.

**Objective 3.1.** Graduate students will apply the scientific method and hypothesis testing for the design and implementation of a formal research project.

**Assessment Activity 3.1:**

**Primary Trait:** The Graduate Student has clearly stated his/her research hypothesis/objectives in the thesis.

**Scoring Rubric:**

- 1) Hypothesis/objectives not discernible from text, or so confused so as to violate scientific principles.
- 2) Hypothesis/objectives discernible, but not stated in testable form; contextual connections vague.
- 3) Hypothesis/objectives recognized and well stated; contextual connections clear.
- 4) Hypothesis/objectives clearly stated and well crafted in a testable form; Hypothesis/objectives made with very clear contextual connection.

**Objective 3.2.** Graduate students will analyze experimental or observational results by the application of quantitative methods where appropriate.

**Assessment Activity 3.2.:**

**Primary Trait:** The quantitative analysis techniques applied to the experimental results are rigorous and appropriate for the results being analyzed.

**Scoring rubric:**

- 1) Quantitative methods do not describe the results, do not indicate levels of confidence in the experimental results, and/or are inappropriate for the data being analyzed (i.e. some assumptions of the statistical method are violated, lack of replications, single year field data, etc.)
- 2) Quantitative methods describe the results, but do not appropriately indicate levels of confidence, or are inappropriate for the data being analyzed.
- 3) Quantitative methods clearly describe the results, appropriately indicate levels of confidence in results, and are appropriate for the data being analyzed).
- 4) Quantitative methods are used to clearly describe results and to indicate levels of confidence. Methods used are appropriate for the data being analyzed, and no assumptions of the quantitative methods are violated.

**Objective 5.2.** Graduate students will organize and write the results of original research consistent with standards in primary, peer reviewed literature.

**Assessment Activity 5.2.a:**

**Primary Trait:** The thesis Introduction provides a historical context and literature review of the thesis topic.

**Scoring rubric:**

- 1) The thesis introduction does not adequately review the historical literature and/or does not introduce specific research problem by the contextual framework.
- 2) The thesis introduction adequately reviews the historical literature but does not introduce the specific research problem in a contextual framework.
- 3) The thesis introduction is well written with adequate review of historical literature. The specific research problem is placed in a contextual framework of previous work.

- 4) The thesis introduction is very well written and provides a nearly exhaustive review of the historical literature. The specific research problem is clearly presented in the context of previous work and represents a logical extension of the research problem.

**Assessment Activity 5.2.b:**

**Primary Trait:** The Thesis Materials and Methods section are complete and clearly stated.

**Scoring rubric:**

- 1) Procedures are vague, disorganized, and/or are filled with irrelevant information
- 2) Procedures are unclear but interpretable. Some relevant information interferes.
- 3) Procedures are easily interpreted. Relevant information can be found in text if sought.
- 4) Procedures are so clear that they require no additional interpretation and could be used directly as protocol. Appropriate details are provided.

**Assessment Activity 5.2.c:**

**Primary Trait:** The Thesis Discussion section clearly integrates current results with previous scientific knowledge.

**Scoring rubric:**

- 1) The Thesis Discussion is merely a restatement of the results and is devoid of comparison to previously published findings.
- 2) The Thesis Discussion weakly integrates current results with previous findings.
- 3) The Thesis Discussion integrates current results with previous findings. Results are compared to conceptual framework of previously published research, but lacks sufficient detail.
- 4) The Thesis Discussion clearly integrates current results with findings of previous research. Results are compared in a well constructed and detailed conceptual framework of previously published research.

**2. Assessment of Graduate Student Performance in the Thesis Exit Colloquium:**

All students in the program are required to deliver an exit colloquium when their research and analysis is completed. As in assessment of the written thesis, a similar conversion of primary trait scores by individual faculty members into departmental assessment scores for learning objectives will be implemented.

**Objective 5.1.** Graduate students will present scientific content in form of graduate seminars, lectures, and talks at professional scientific meetings, field days, extension meetings at a level commensurate with standards of academic discourse.

**Assessment of Activity 5.1.a:**

**Primary Trait:** Organization of the Thesis Exit Seminar.

**Scoring Rubric:**

- 1) The graduate seminar presentation was poorly organized such that topics were hard to follow.

- 2) The graduate seminar presentation was well organized, although at times, topics did not flow smoothly from one to another.
- 3) The graduate seminar presentation was well organized, and topics flowed smoothly from one to another.
- 4) The graduate seminar presentation was extremely well organized and well rehearsed. All topics flowed smoothly from one to another, allowing the audience to effortlessly understand the content of presentation.

**Assessment Activity 5.1.b.:**

**Primary Trait:** Inclusion of relevant introductory and background content in graduate (or Thesis Defense) seminar.

**Scoring rubric:**

- 1) The graduate seminar presentation did not introduce the seminar topic with sufficient background information.
- 2) The graduate seminar presentation contained some introductory information, but did not adequately introduce the topic for those who did not have prior experience with the topic.
- 3) The graduate seminar presentation contained sufficient background for most of the audience to adequately follow the topic.
- 4) The graduate seminar presentation provided a through introduction to the topic so that all attendees could clearly follow the subject matter.

**Assessment Activity 5.1.c:**

**Primary Trait:** Visual appearance of the Graduate (or Thesis Defense) seminar.

**Scoring rubric:**

- 1) The Graduate Seminar presentation lacked visual media to enhance retention of materials.
- 2) The Graduate Seminar presentation included some visual media to enhance retention of materials.
- 3) The Graduate Seminar presentation included visual media that were used to enhance retention of materials presented.
- 4) The Graduate Seminar presentation included visual media of several different formats that were used to enhance the retention of materials.

**3. Assessment of Graduate Student writing ability and grantsmanship:**

Assessment of proposal writing and funding success is a clearly definable measure of how well the Department is preparing graduate students for ‘real world’ fiscal limitations on research, and the expectations of potential employers. All students in the department have to develop and submit a research proposal for initial assessment of their thesis research and writing ability by the end of their first semester after admission to the Department. The Graduate Students also have to satisfy the writing requirement as mandated by the Division of Graduate Studies by taking the appropriate class offering in their initial two semesters. The research proposal has to be defended by the Graduate Student in their initial two semesters. The Advancement to Candidacy petition to the department must be accompanied by the research proposal. The

research proposals will be evaluated according to a scoring rubric that assesses the following two objectives:

**Objective 3.1.** Graduate Students will apply scientific method and hypothesis testing for the design and implementation of a formal thesis research project.

**Objective 4.1.** Graduate Students will demonstrate grantsmanship skills for acquiring internal and/or external funds for conducting graduate research.

#### **4. Alumni Survey:**

A survey of Graduate Students will be conducted every five years from the pool of students who graduated six months or more before the survey, and not including respondents from previous surveys. The survey will be used to describe and quantify the initial positions held by CSUF graduates following completion of their degree and their satisfaction with the curriculum and training they received, and will be used as the basis for a database where DVE Graduate Students find employment. Perhaps, more importantly, however, the survey will provide feedback on the extent to which the CSUF DVE Graduate Program prepared them for their position. The survey is as follows:

##### **A Survey for Recipients of the Master of Science in Viticulture and Enology of the Department of Viticulture, California State University, Fresno**

1. Last Name, First Name (Optional – your name will only be used to track respondents of the survey and limit additional contacts from our staff. All of your responses will be maintained in the highest confidence and will only be used for program assessment)

2) Year of graduation

3) Are you currently employed in the a field related to you M.S. Viticulture and Enology Degree?

- Yes
- No

4) Are you currently continuing your education in a field related to your M.S. Viticulture Degree?

- Yes
- No

5) If yes to either or both of the above, please specify and check all those apply regarding current occupation.

- Academic graduate program (PhD, DSc, etc,)
- Education professional program (EdD)
- Education (secondary school teacher, community college instructor, professor)
- Non-teaching research
- State or Federal Agency employee
- Non-governmental organization or non-profit organization
- Industry
- Legal or policy field

- Self employment
  - Other
- 6) How related is your current occupation to your M.S. Viticulture and Enology Degree?
- Highly
  - Moderately
  - Somewhat
  - Not at all
  - Not employed
- 7) Please describe your current position
- 8) The M.S. in Viticulture and Enology degree provided me with in-depth training in a specific field Viticulture or Enology
- Strongly agree
  - Agree
  - No opinion
  - Disagree
  - Strongly disagree
- 9) The M.S. in Viticulture and Enology provided me with a working knowledge of field research skills and/or laboratory skills and technologies.
- Strongly agree
  - Agree
  - No opinion
  - Disagree
  - Strongly disagree
- 10) The M.S. in Viticulture and Enology provided me with the ability to design and implement research and analyze the results.
- Strongly agree
  - Agree
  - No opinion
  - Disagree
  - Strongly disagree
- 11) The M.S. in Viticulture and Enology provided me with the ability to present the results of my research
- Strongly agree
  - Agree
  - No opinion
  - Disagree
  - Strongly disagree
- 12) The M.S. in Viticulture and Enology prepared me well for entry into graduate or professional school.
- Strongly agree
  - Agree
  - No opinion

- Disagree
  - Strongly disagree
- 13) The M.S. in Viticulture and Enology prepared me for employment in Viticulture/Enology or another closely related scientific field.
- Strongly agree
  - Agree
  - No opinion
  - Disagree
  - Strongly disagree
- 14) Adequate resources were available to allow me to complete research and other degree requirements in a timely fashion
- Strongly agree
  - Agree
  - No opinion
  - Disagree
  - Strongly disagree
- 15) The number and variety of course available for the M.S. Viticulture and Enology major were adequate
- Strongly agree
  - Agree
  - No opinion
  - Disagree
  - Strongly disagree
- 16) The content of graduate courses offered was current and comprehensive
- Strongly agree
  - Agree
  - No opinion
  - Disagree
  - Strongly disagree
- 17) The DVE faculty was enthusiastic about teaching
- Strongly agree
  - Agree
  - No opinion
  - Disagree
  - Strongly disagree
- 18) The DVE faculty was enthusiastic about research
- Strongly agree
  - Agree
  - No opinion
  - Disagree
  - Strongly disagree
- 19) My advisor provided excellent guidance and mentoring
- Strongly agree
  - Agree



- No opinion
- Disagree
- Strongly disagree

20) For those questions where your response was ‘strongly disagree’ we would appreciate your explanatory comments.

21) Please describe your most memorable positive experience during your education in the CSU Fresno M.S. Viticulture and Enology program.

### **5. Interviews with graduating M.S. candidates**

This assessment activity aims to gauge graduate student satisfaction with the Viticulture and Enology M.S. program. Of the questions to be asked, four are quantifiable on a 1-5 scale, with 5 being superior. These questions are:

- 1) Were adequate resources available to allow you to complete your research and other degree requirements in a timely fashion?
- 2) Did curriculum meet your needs?
- 3) Were you satisfied with the guidance provided by thesis adviser?
- 4) Were you satisfied with your degree of exposure to biological research and knowledge?

The remaining three questions to be asked invite narrative responses are:

- 5) What are the single best and worst events during the course of your degree?
- 6) What were the most important skills and/or elements of knowledge that you gained during your research?
- 7) What are your career goals?

### **6. Evaluations of presentations at scientific meetings**

The Department of DVE aims to use the following evaluation sheet for assessing quality and content of posters and/or oral presentations prepared by graduate students for presentations of research at scientific meetings. This assessment of activity specifically addresses the following learning objectives:

**Objective 5.1.** Graduate students will present scientific content in form of graduate seminars, lectures, and talks at professional scientific meetings, field days, extension meetings at a level commensurate with standards of academic discourse.

**Objective 5.2.** Graduate students will organize and write the results of original research consistent with standards in primary, peer reviewed relevant literature.

**Assessment Activity:** Evaluation Sheet of DVE

Comments	Score	Description
<b>A. Hypothesis or problem statements</b>		
	4	Problem, question or hypothesis and significance is clear
	3	Problem, question, or hypothesis is clearly stated but scientific significance is unclear
	2	Lack of clarity in problem, question or hypothesis, no significance evident
	1	No problem, question, or hypothesis tested
<b>B. Experimental Design</b>		
	4	Experimental design tests hypothesis directly or addresses stated problem or question. Controls and replicates are included, as well as statistical tests where appropriate
	3	Experimental design tests hypothesis directly or addresses stated problem or question. Inadequate controls and replicates included, inadequate or incorrect statistical tests applied.
	2	Experimental design only indirectly tests hypotheses or addresses stated problem or question. Inadequate controls and replicates included, no statistical tests (can be) applied
	1	No evidence of design addressing the state question, problem or hypothesis
<b>C. Results</b>		
	4	All aspects of the design executed
	3	Minor errors occurred in execution of design
	2	Major flaws evident in execution of experimental design
	1	Complete failure of the stated study to produce any results
<b>D. Discussions/Conclusions</b>		
	4	Discussion/conclusion directly address the results and are supported by evidence. Any limitations are acknowledged
	3	Minor flaws in the logic and applicability of the discussion and conclusions
	2	Major flaws in the logic and applicability of the discussion and conclusions
	1	No structure or relevance to the discussion or conclusions at all.

### Implementation of the Assessment Plan:

The numbers in each column correspond to specific assessment activities

	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
<b>Thesis</b>	5.2a-c	5.2a-c	5.2a-c	5.2a-c	5.2a-c
<b>Thesis</b>	3.1, 3.2	3.1, 3.2	3.1, 3.2	3.1, 3.2	3.1, 3.2
<b>Thesis exit seminar</b>	5.1a-c	5.1a-c	5.1a-c	5.1a-c	5.1a-c
<b>Writing ability</b>	4.1	4.1	4.1	4.1	4.1
<b>Alumni Survey</b>					X
<b>Exit interviews</b>	X	X	X	X	x
<b>Presentation evaluations</b>		5.1		5.1, 5.2	