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| **California State University, Fresno**  **Jordan College of Agriculture**  **Viticulture & Enology, Master of Science Program**  **Viticulture & Enology Graduate Program Assessment Coordinator [i]: Runze Cliff Yu** |
| **Student Outcomes Assessment Plan (SOAP) Version 1; December, 2023** |
| Mission Statement |
| The mission of the Viticulture & Enology Graduate Program is to provide our students with the theoretical and applied knowledge necessary for advanced careers in the wine and grape sciences. The program builds upon the knowledge and experiences obtained by students in their baccalaureate study in Viticulture & Enology or related disciplines. The program provides mentoring by graduate faculty from a wide range of disciplines, with access to modern research equipment and facilities, a viticulture farm laboratory for field studies, and a research winery for enology and fermentation work. |

## Institutional, Program, and Student Learning Outcomes [a,b,c]

* 1. The Viticulture & Enology Graduate Program adheres to the Institutional Learning Outcomes (ILOs) of California State University, Fresno. Fresno State ILO’s are posted on the following webpage: <http://fresnostate.edu/academics/oie/assessment/fresno-state-assessment.html>
  2. Program Learning Outcomes (PLOs) & Student Learning Outcomes (SLOs)
     1. **PLO 1: Students will be provided fundamental knowledge in viticulture and enology. This will enable students to:**
        1. **SLO 1.1:** conduct scholarly review of primary literature and develop competency in interpreting existing knowledge from scientific papers
     2. **PLO 2: Students will formulate a scientific hypothesis and conduct research to verify the hypothesis using an appropriate experimental design and data analyses. This will enable students to:**
        1. **SLO 2.1:** plan and design experiments to test a specific hypothesis
        2. **SLO 2.2:** conduct statistical analyses, interpret the statistical output, and draw valid conclusions
     3. **PLO 3: Students will have knowledge of and familiarity with advanced equipment and analytical techniques. This will enable students to:** 
        1. **SLO 3.1:**  evaluate appropriate methods for sampling, sample processing and laboratory analysis demonstrating knowledge of quality control procedures
     4. **PLO 4: Students will enhance their communication skills and be able to:**
        1. **SLO 4.1:** communicate experimental procedures, results, and their conclusions in written format
        2. **SLO 4.2:**  present research findings in a scholarly manner through oral or poster presentation and be able to respond to questions integrating scholarly knowledge into the response.

## Curriculum Map [d]: Courses in which SLO’s are addressed and evaluated

|  | **SLO 1.1** | | **SLO 2.1** | **SLO 2.2** | **SLO 3.1** | | **SLO 4.1** | **SLO 4.2** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Core Course** |  | |  |  |  | |  |  |
| AGRI 200 |  | | I | I |  | |  |  |
| AGRI 201 |  | |  |  | I | |  |  |
| AGRI 220 | I | |  |  | I | | I |  |
| VEN 210 | D | |  |  | D | |  |  |
| VEN 229 |  | |  |  |  | | D | D |
| VEN 280 | D | |  | D |  | | D |  |
| **Electives** |  | |  |  |  | |  |  |
| VEN 250 T |  | |  |  |  | |  |  |
| VEN 290 | I | | I | I | I | |  |  |
| **Thesis** |  | |  |  |  | |  |  |
| VEN 299 | M | | M | M | M | | M | M |
|  | |  | | | |

For courses in the major, using the abbreviations below, indicate which outcomes are introduced, which are developed, and which are mastered in that particular course.

| **I = Introduced** | **D = Developed** | **M=Mastered** |  |
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## SLO’s Mapped to Assessment Measures and Methods [e]

| **Assessment Measure** | **Evaluation**  **Method** | **SLO**  **1.1** | **SLO**  **2.1** | **SLO**  **2.2** | **SLO**  **3.1** | **SLO**  **4.1** | **SLO**  **4.2** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1. VEN 210 - Assessments | DIRECT | X |  |  | X |  |  |
| 2. VEN 229 - Assessments | DIRECT |  |  |  |  | X | X |
| 3. VEN 280 - Assessments | DIRECT | X |  |  |  | X |  |
| 4. AGRI 200 – Final Project | DIRECT |  | X | X |  |  |  |
| 5. AGRI 201 – Final Project | DIRECT |  |  |  | X |  |  |
| 6. Thesis Proposal | DIRECT | X | X |  | X | X |  |
| 7. Thesis Proposal Defense | DIRECT | X | X |  | X |  | X |
| 8. Thesis Exit Seminar | DIRECT | X |  | X | X |  | X |
| 9. Written Thesis | DIRECT | X | X | X | X | X |  |
| 10. Exit Survey | INDIRECT | X | X | X | X | X | X |

## Assessment Measures: Description of Assignment and Method (rubric, criteria, etc.) used to evaluate the assignment [f]

* 1. *Direct Measures* 
     1. **VEN 210 Assessments: 1.1, 3.1**
        1. Students perform discuss research articles on a range grape and wine chemistry topics.
        2. Assessment based on grading rubric used within VEN 210.
     2. **VEN 229 Assessments: 1.1**
        1. Students practice poster and oral communication of their research project and write an abstract to submit to a conference.
        2. Assessment based on grading rubric used within VEN 229.
     3. **VEN 280 Assessments:** **1.1, 4.1**
        1. Students need to find related literatures and practice summarizing and extracting information from them.
        2. Students would need to identify hypotheses and develop or improve experiments based on hypotheses.
        3. Students need to work on structing a written format based on their dissertation in a satisfactory manner.
     4. **AGRI 200 Final Project: 2.1, 2.2**
        1. Students find a data set, analyze it, and interpret the outcome.
        2. Assessment based on grading rubric used within AGRI 200.
     5. **AGRI 201 Final Project: 3.1**
        1. Students select a laboratory technique, perform analysis, and summarize outcomes to class in writing.
        2. Assessment based on grading rubric used within AGRI 201.
     6. **Thesis proposal: 1.1, 2.1, 3.1, 4.1**
        1. Students write a proposal for their thesis research consisting of 1) an introduction with literature review, 2) a statement of research hypothesis and 3) a Materials & Methods section describing their experimental design, measurements and sampling, analytical procedures.
        2. Assessed using a standardized departmental rubric that combines both the oral defense and written proposal completed by the thesis committee.
     7. **Thesis proposal defense: 1.1, 2.1, 3.1, 4.2**
        1. Students present their thesis proposal to the thesis committee and respond to questions related to the proposal and areas of Viticulture & Enology related to their thesis research. Students are given either a pass, conditional pass, or fail.
        2. Assessed using a standardized departmental rubric that combines both the oral defense and written proposal completed by the thesis committee.
     8. **Thesis Exit Seminar: 1.1, 2.2, 3.1, 4.2**
        1. Students present their thesis research to the department (faculty, fellow graduate students, and outside visitors). 45 min. presentation covering the sections of the thesis listed above. An evaluation sheet is provided to faculty and any research scientists attending. Average scores will be tabulated.
     9. **Written thesis: 1.1, 2.1, 2.2, 3.1, 4.1**
        1. The written thesis is the capstone assignment of the master’s degree, providing a thorough overview of the student’s thesis research. Formats vary by discipline but include a literature review along with sections describing experimental design, data analysis, results, and a discussion of how results integrate into the existing literature.
        2. Assessed using a standardized departmental rubric completed by the thesis committee.
  2. *Indirect Measures* 
     1. **Exit Survey: 1.1, 2.1, 2.2, 3.1, 4.1, 4.2**
        1. Written survey sent to alumni having graduated at least 3 years prior. Questions will address whether the listed learning outcomes were fulfilled and the degree of preparation for their agricultural career. Evaluated by the graduate committee following an internal rubric.

## Assessment Schedule/Timeline [g]

| Academic Year | Assessment Measure | SLOs Assessed |
| --- | --- | --- |
| 2022-2023 | VEN 229 - Assessments | 4.1, 4.2 |
| 2023-2024 | VEN 280 – Assessments | 1.1, 4.2 |
| 2024-2025 | VEN 210 – Assessments | 1.1, 3.1 |
| 2025-2026 | Thesis Proposal | 1.1, 2.1, 3.1, 4.1 |
| 2026-2027 | Thesis Proposal Defense | 1.1, 2.1, 3.1, 4.2 |
| 2027-2028 | Thesis Exit Seminar | 1.1, 2.2, 3.1, 4.2 |

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| Closing the Loop [h,j,k] |
| **Fresno State Closing the Loop process is described immediately below.** |
| An assessment report, which focuses on assessment activities carried out the previous academic year, is submitted in September of each academic year and evaluated by the Learning Assessment Team and Director of Assessment at Fresno State. |
| 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 key element of the Department Annual Report.  The Viticulture and Enology Graduate faculty will continue to refine the thesis proposal and defense process and align core classes in the curriculum.  Moving forward, the graduate faculty will pursue a six-year assessment schedule which will allow for the review of progress in all six SLOs listed in this document. |