

# VITICULTURE & ENOLOGY (GRADUATE GROUP)

## Graduate Studies

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## Group Office

1204 RMI South; 530-752-3250; Viticulture & Enology Graduate Group (<http://vengg.ucdavis.edu>); Faculty (<https://vengg.ucdavis.edu/person-type/faculty/>)

- Viticulture & Enology, Master of Science (<https://catalog.ucdavis.edu/departments-programs-degrees/viticulture-enology-graduate-group/viticulture-enology-ms/>)

## Viticulture & Enology (VEN)

### VEN 200 – Introduction to Scientific Methods (2 units)

*Course Description:* Processes involved in conducting scientific research. Topics covered will include conducting literature review, formulating hypotheses, and analyzing and reporting results. Students will complete an annotated bibliography and complete a written and oral research proposal.

*Prerequisite(s):* Graduate standing or consent of instructor.

*Learning Activities:* Lecture/Discussion 1 hour(s), Term Paper 1 hour(s).

*Grade Mode:* Letter.

### VEN 210 – Grape Development & Composition (3 units)

*Course Description:* Anatomy, physiology and biochemistry of grape berry development, with emphasis on the development of grape composition relevant to winemaking.

*Prerequisite(s):* (BIS 102, BIS 103) or BIS 105.

*Learning Activities:* Discussion 1 hour(s), Lecture 2 hour(s).

*Grade Mode:* Letter.

### VEN 213 – Flavor Chemistry of Foods & Beverages (3 units)

*Course Description:* Become familiar with basic principles of flavor chemistry, analysis, and formation in fresh and processed foods. Required to read and critically evaluate flavor chemistry literature.

*Prerequisite(s):* CHE 008B; ((VEN 123, VEN 123L) or FST 103); or consent of instructor.

*Learning Activities:* Lecture/Discussion 3 hour(s).

*Cross Listing:* FST 213.

*Grade Mode:* Letter.

### VEN 215 – Sensometrics (3 units)

*Course Description:* Experimental design and statistical analysis, including multivariate analysis, for both sensory and instrumental data in enology and food-related studies.

*Prerequisite(s):* FST 117; ((VEN 125, VEN 125L) or (FST 107A or FST 107B)); or equivalent to FTS 117.

*Learning Activities:* Lecture 3 hour(s).

*Grade Mode:* Letter.

### VEN 216 – Sustainable Vineyard Development (5 units)

*Course Description:* Application of plant, meteorological, soil, water, GIS, and economic sciences to sustainable vineyard development. Preparation of a comprehensive study to determine the viticultural and economic feasibility of a given site for raisin, table, or wine grape production.

*Prerequisite(s):* (VEN 101A, VEN 101B, VEN 101C); (VEN 115 or VEN 118); or consent of instructor.

*Learning Activities:* Lecture/Discussion 3 hour(s), Fieldwork 3 hour(s), Term Paper.

*Grade Mode:* Letter.

### VEN 217 – Field & GIS Evaluation of Soils (3 units)

*Course Description:* Principles and practices used to evaluate agricultural soils in the field, including soil pits, soil cores, electrical conductivity meters, ground penetrating radar, geomorphology and surface terrain analysis. Use of geographic information sciences, soil databases, digital elevation models and geostatistics.

*Prerequisite(s):* PLS 120; (PLS 205 or PLS 206); (SSC 100 or SSC 105 or SSC 107); VEN 101C; consent of instructor; ABT 180 is recommended.

*Learning Activities:* Lecture/Lab 4 hour(s), Fieldwork 3 hour(s).

*Grade Mode:* Letter.

### VEN 219 – Natural Products of Wine (3 units)

*Course Description:* Structure, occurrence, and changes due to wine production to the natural products found in wine. Chemicals with a sensory impact will be emphasized, including flavonoids and other phenolics, terpenes and norisoprenoids, pyrazines, oak volatiles and other wine constituents.

*Prerequisite(s):* VEN 123; VEN 124; or natural products background, and consent of instructor.

*Learning Activities:* Lecture 3 hour(s).

*Grade Mode:* Letter.

### VEN 223 – Instrumental Analysis of Must & Wine (4 units)

*Course Description:* Theory and practice of instrumental analysis of wines and musts. mphasis on the principles of analytical techniques (e.g., CE, GC, HPLC, Mass Spectrometry) and factors determining correct choice of instrumental method.

*Prerequisite(s):* VEN 123 or FST 103; ((BIS 102 and BIS 103) or BIS 105), (CHE 107B or CHE 115) recommended.

*Learning Activities:* Lecture 2 hour(s), Laboratory 3 hour(s), Discussion 1 hour(s).

*Enrollment Restriction(s):* Open to upper division students in Viticulture & Enology, Food Science and Technology; students in Food Science, Ag & Environmental Chemistry and Viticulture & Enology graduate groups.

*Grade Mode:* Letter.

### VEN 224 – Advances in the Science of Winemaking (3 units)

*Course Description:* Selected topics in the science and technology of winemaking. Topics will be drawn from current research of participating enology and viticulture faculty. Critical analysis of the technical content of published material will be emphasized.

*Prerequisite(s):* VEN 125; VEN 126; or consent of instructor; graduate standing.

*Learning Activities:* Lecture 3 hour(s).

*Grade Mode:* Letter.

### VEN 225 – Advanced Sensory Analysis of Wines (3 units)

*Course Description:* Sensory descriptive analysis experiments will be designed and conducted using standard sensory science methods. Data will be analyzed by analyses of variance, principal component analyses and generalized Procrustes analysis to evaluate the judges performance and interpret the significance of the results.

*Prerequisite(s):* ((VEN 124, VEN 125) or FST 107); AMR 120; or the equivalent.

*Learning Activities:* Lecture/Discussion 2 hour(s), Laboratory 4 hour(s).

*Grade Mode:* Letter.

### VEN 235 – Winery Design (4 units)

*Course Description:* Design of wineries. Includes process calculations, equipment selection, process layout and building choice and siting. Project scheduling, capital costs, and ten-year cash flow analysis for the winery. One field trip required.

*Prerequisite(s):* VEN 124; VEN 135; or consent of instructor.

*Learning Activities:* Lecture 2 hour(s), Discussion 1 hour(s), Independent Study.

*Grade Mode:* Letter.

### VEN 270 – Critical Evaluation of Scientific Literature (2 units)

*Course Description:* Contemporary research topics in biological sciences. Discussion of recent research articles in a special topic area chosen by instructor. Intended to develop skills in critical evaluation of scientific publications.

*Prerequisite(s):* Consent of instructor.

*Learning Activities:* Discussion 2 hour(s).

*Repeat Credit:* May be repeated.

*Grade Mode:* Satisfactory/Unsatisfactory only.

### VEN 290 – Seminar (1 unit)

*Course Description:* Seminar.

*Prerequisite(s):* Consent of instructor.

*Learning Activities:* Seminar 1 hour(s).

*Grade Mode:* Satisfactory/Unsatisfactory only.

### VEN 290C – Advanced Research Conference (1 unit)

*Course Description:* Planning and results of research programs, proposals, and experiments. Discussion and critical evaluation of original research being conducted by the group. Discussion led by individual research instructors for research group.

*Prerequisite(s):* Consent of instructor; graduate standing.

*Learning Activities:* Discussion 1 hour(s).

*Repeat Credit:* May be repeated.

*Grade Mode:* Satisfactory/Unsatisfactory only.

### VEN 291 – Advanced Viticulture (2 units)

*Course Description:* Critical evaluation of scientific and popular literature on selected topics of current interest that relate viticulture to fruit or wine sensory attributes or quality.

*Prerequisite(s):* VEN 110; VEN 116; VEN 124; VEN 125; VEN 210 recommended.

*Learning Activities:* Lecture/Discussion 2 hour(s).

*Repeat Credit:* May be repeated 1 time(s).

*Grade Mode:* Letter.

### VEN 292 – Advanced Internship (1-15 units)

*Course Description:* Work experience related to Fermentation Science (Enology) or Plant Science (Viticulture) majors. Internships must be approved and supervised by a graduate group faculty member or students major professor, but are arranged by the student.

*Prerequisite(s):* VEN 123; VEN 123L; VEN 124; VEN 124L; VEN 125; VEN 125L; VEN 126; VEN 126L; VEN 128; VEN 128L; and consent of instructor.

*Learning Activities:* Internship 3-45 hour(s), Variable.

*Enrollment Restriction(s):* Restricted to Viticulture & Enology Graduate Group graduate students.

*Repeat Credit:* May be repeated 15 unit(s).

*Grade Mode:* Satisfactory/Unsatisfactory only.

### VEN 297T – Tutoring in Viticulture & Enology (1-5 units)

*Course Description:* Designed for graduate students who desire teaching experience, but are not teaching assistants. Student contact primarily in laboratory or discussion sections, and under direction of a faculty member.

*Prerequisite(s):* Consent of instructor; graduate standing.

*Learning Activities:* Variable.

*Grade Mode:* Satisfactory/Unsatisfactory only.

### VEN 298 – Group Study (1-5 units)

*Course Description:* Group study.

*Prerequisite(s):* Consent of instructor.

*Learning Activities:* Variable.

*Grade Mode:* Satisfactory/Unsatisfactory only.

### VEN 299 – Research (1-12 units)

*Course Description:* Research.

*Prerequisite(s):* Consent of instructor.

*Learning Activities:* Variable.

*Grade Mode:* Satisfactory/Unsatisfactory only.