## WINE AND VITICULTURE (WVIT)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
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<tbody>
<tr>
<td>WVIT 101</td>
<td>Orientation to Wine and Viticulture</td>
<td>1</td>
<td>Emphasis on curriculum and career planning. Credit/No Credit grading only. 1 lecture.</td>
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<tr>
<td>WVIT 202</td>
<td>Fundamentals of Enology</td>
<td>4</td>
<td>Introduction to the science of winemaking: development of wine components in grapes, grape maturation, harvesting, pre-fermentation wine-making methods, alcoholic fermentation, malolactic fermentation, wine maturation and post fermentation practices, wine spoilage, maintenance of wine integrity. 4 lectures.</td>
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<tr>
<td>WVIT 233</td>
<td>Basic Viticulture</td>
<td>4</td>
<td>Fundamentals of grape growing, with emphasis on wine grapes. Fundamentals of vine anatomy and physiology, development and phenology, trellising systems, soils, climatic factors, vineyard establishment, grafting, irrigation, fertility, harvest practices, pruning, major pests, and major varieties and rootstocks. Not open to students with credit in WVIT 231. 4 lectures.</td>
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<tr>
<td>WVIT 270</td>
<td>Selected Topics</td>
<td>1-4</td>
<td>Directed group study of selected topics. The Class Schedule will list topic selected. Total credit limited to 8 units. 1 to 4 lectures.</td>
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<tr>
<td>WVIT 300</td>
<td>Survey of Grape Growing and Winemaking</td>
<td>4</td>
<td>Fundamentals of viticulture and enology. Overview of grapevine physiology, major varieties, soils, climatic factors, management practices and wine regions of the world. Exploration of wine fermentation, finishing, aging, bottling and wine chemistry. Compare red, white, sparkling and fortified wine production. Not open to students with credit in WVIT 202 or WVIT 233. 4 lectures. Fulfills GE Area Upper-Division B (GE Areas B5, B6, or B7 for students on the 2019-20 catalog).</td>
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<tr>
<td>WVIT 301</td>
<td>Wine Microbiology</td>
<td>4</td>
<td>Prerequisite: MCRO majors must have MCRO 224; WVIT majors must have MCRO 221 or MCRO 224; and WVIT 202; open to MCRO or WVIT majors only. Wine yeasts, bacteria, and molds: morphology and methods of identification; successful alcoholic and malolactic fermentations; management and prevention of unwanted microbial growth; microorganisms and flavor development. 3 lectures, 1 laboratory. Crosslisted as MCRO/WVIT 301.</td>
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<tr>
<td>WVIT 302</td>
<td>Wine Fermentation Laboratory</td>
<td>2</td>
<td>Prerequisite: WVIT 202; WVIT major; and at least 18 years in age. Alcoholic and malolactic fermentation, maturation, stabilization and bottling of finished wines. Not open to students with credit in WVIT 404, WVIT 405 or WVIT 406. 1 lecture, 1 laboratory.</td>
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<tr>
<td>WVIT 331</td>
<td>Advanced Viticulture - Fall</td>
<td>4</td>
<td>Prerequisite: AEPS/WVIT 231 or WVIT 232 or WVIT 233. Advanced viticulture theory and practice, with an emphasis on fall season activities. Identification of rootstocks, wine and table grapes, species taxonomy and diversity, and breeding for grapevine improvement. Field trips required. 3 lectures, 1 laboratory. Crosslisted as AEPS/WVIT 331.</td>
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<tr>
<td>WVIT 332</td>
<td>Advanced Viticulture - Winter</td>
<td>4</td>
<td>Prerequisite: AEPS/WVIT 231, WVIT 232 or WVIT 233; and WVIT 331. Advanced viticulture theory and practice with emphasis on winter season activities. Pruning to influence vine balance, productivity, training and trellising systems, vineyard establishment, cover cropping and weed management. Field trips required. 3 lectures, 1 laboratory. Crosslisted as AEPS/WVIT 332.</td>
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<tr>
<td>WVIT 333</td>
<td>Advanced Viticulture - Spring</td>
<td>4</td>
<td>Prerequisite: AEPS/WVIT 231, WVIT 232 or WVIT 233; and WVIT 331. Advanced viticulture theory and practices with emphasis on spring activities. Vine source/sink relations, factors impacting yield and berry composition, the role environmental conditions on vine physiology, and canopy management. Field trips required. 3 lectures, 1 laboratory. Crosslisted as AEPS/WVIT 333.</td>
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<tr>
<td>WVIT 339</td>
<td>Internship Wine and Viticulture</td>
<td>1-12</td>
<td>Prerequisite: WVIT 202; AEPS/WVIT 231 or WVIT 232 or WVIT 233; junior standing; and consent of internship instructor. One or two quarters spent with an approved wine industry employer engaged in wine production or related agribusiness and viticulture activities. Applying and developing production and managerial skills and abilities. One unit of credit may be allowed for each full week of completed and reported internship. Total Major credit limited to 6 units. Total credit limited to 12 units. Credit/No Credit grading only.</td>
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<tr>
<td>WVIT 343</td>
<td>Branded Wine Marketing</td>
<td>4</td>
<td>Prerequisite: AGB 212 or ECON 201 or ECON 221 or ECON 222. Wine pricing as it relates to quality, packaging, and service. Distribution options with emphasis on the three tier system, promotional strategies, including public relations, mass media advertising, personal selling, and direct marketing. Domestic and international marketplaces. 4 lectures.</td>
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WVIT 344. Direct to Consumer Wine Sales. 4 units
Prerequisite: WVIT or RPTA major. Co-requisite: AGB 212 or ECON 201 or ECON 221 or ECON 222.

Factors driving direct-to-consumer initiatives in the US wine business: tasting rooms, wine clubs/mailing lists, eCommerce, telemarketing, and events. Using current research and case studies to explore features of a direct-to-consumer approach, while facilitating compliance. Topics include: experiential marketing, social media, brand differentiation. 4 lectures.

WVIT 345. Wine Marketing Research and Market Analysis. 4 units
Prerequisite: WVIT 202 or WVIT 404; WVIT major; and at least 18 years in age.

Application of statistical theory to design research to examine the wine and grape markets. Research examining the evaluation of appropriate data collection methods, quantitative analyses, and interpretation of primary and secondary wine and grape industry data. 4 lectures. Formerly WVIT 444.

WVIT 365. Wine Analysis and Amelioration. 4 units
Prerequisite: WVIT 202 and CHEM 312; for WVIT majors only. Corequisite: CHEM 313.

Winery laboratory practices. Basic principles, techniques, and interpretation of common analyses for sugars, acidity, nitrogen, alcohol, volatile acidity, sulfur dioxide, phenols and color; wine and must amelioration, amendment effects, usage, calculations and procedures of addition. 3 lectures, 1 laboratory.

WVIT 400. Special Problems for Advanced Undergraduates. 1-4 units
Prerequisite: Consent of instructor.

Individual investigation, research, studies, or surveys of selected problems. Total credit limited to 6 units, with a maximum of 4 units per quarter.

WVIT 404. Winemaking I. 4 units
Prerequisite: WVIT 202; WVIT 365; WVIT major; and at least 18 years in age.

Planning, managing and implementing harvest in the pilot winery; sanitation practices; monitoring grape maturity; handling juices and musts; alcoholic and malolactic fermentation, general cellar practices; sensory and laboratory analyses. 3 lectures, 1 laboratory.

WVIT 405. Winemaking II. 4 units
Prerequisite: WVIT 404; WVIT major; and at least 18 years in age.

Planning, managing and implementing harvest in the pilot winery; sanitation practices; monitoring and maintaining wine integrity; planning for bottling; blending trials; general cellar practices; sensory and laboratory analyses. 3 lectures, 1 laboratory.

WVIT 406. Winemaking III. 4 units
Prerequisite: WVIT 405; WVIT major; and at least 18 years in age.

Planning, managing and implementing the preparation of wine for bottling; blending; fining; filtration; bottling; conducting general cellar practices; sensory and laboratory analyses. 3 lectures, 1 laboratory.

WVIT 414. Grape Pest Management. 4 units
Prerequisite: AEPS/WVIT 231, WVIT 232 or WVIT 233; AEPS 313; AEPS/BOT 323.

Comprehensive survey of major grape pests including diseases, insects, weeds, vertebrates, and nematodes. Identification and biology of grape pests and natural enemies, monitoring, and integrated pest management (IPM) strategies, including cultural, biological, and chemical controls. Guest lectures. 3 lectures, 1 activity. Crosslisted as AEPS/WVIT 414.

WVIT 423. Wine Law and Compliance. 4 units
Prerequisite: WVIT 343.

Legal aspects of wine making/marketing. Emphasis of both Federal (Tax and Trade Bureau) and State business requirements as well as State and Federal regulations impacting winery and viticultural practices in California. 4 lectures.

WVIT 428. Winegrape Vineyard Management. 4 units
Prerequisite: AGB 214, SS 221 and WVIT 233. Recommended: WVIT 331, WVIT 332, and WVIT 333.

Winegrape vineyard management practices including: financial projections and budgeting, contracting and supervision of labor, trellis installation and repair, irrigation systems maintenance, fertilization and spray scheduling. Field trips required. 3 lectures, 1 laboratory.

WVIT 433. Wine Sales and E-Commerce. 4 units
Prerequisite: WVIT 343.

Professional selling in the wine industry. Selling wine through the seven avenues of wine distribution in the 3-tier system. Exploration of aspects of wine selling, from customer relation management to cultural and legal differences among states. How strategies for selling differ for various sized wineries. 4 lectures.

WVIT 442. Sensory Evaluation of Wine. 4 units
Prerequisite: WVIT 202; STAT 218; WVIT major; and at least 18 years in age.

Evaluation of wines using the techniques in sensory evaluation. Difference and rating tests; descriptive analysis and pairing of wine and food. 3 lectures, 1 laboratory.

WVIT 447. Logistics for the Global Wine Industry. 4 units
Prerequisite: WVIT 102; WVIT 343; and STAT 218.

Scope and elements of the international wine logistics system including supply and distribution channels, transportation, inventory, warehousing, packaging and order processing. 4 lectures.

WVIT 450. Wine Business Strategies. 4 units
Prerequisite: AGB 214 and WVIT 343.

The strategic planning process for wine businesses. Development of a complete business plan with careful adherence to the unique and complex regulations that apply to wine businesses. The business plan will include specification of the product, distribution, finance, and marketing. 4 lectures.
**WVIT 460. Senior Project - Wine Business. 4 units**
Prerequisite: WVIT 343; and one of the following: WVIT 444 or WVIT 450; Senior standing; and WVIT major.

Selection and analysis of wine and viticulture business problems and opportunities in directed group-based projects. Problems typical to those that graduates may encounter in marketing and management in the wine and viticulture industry. Formal report and presentation required. 4 lectures.

**WVIT 463. Issues, Trends and Careers in the Wine Industry. 2 units**
Prerequisite: Senior standing; WVIT majors only.

Current issues and trends in viticulture, enology and wine business. Career opportunities and planning for WVIT majors nearing graduation. 2 seminars.

**WVIT 464. Senior Project - Enology and Viticulture. 4 units**
Prerequisite: STAT 218; junior standing; completion of the Graduate Writing Requirement.

Completion of a research proposal and comprehensive literature review, including analysis of experimental results from published peer-reviewed articles in enology and/or viticulture. Written and oral presentations. 4 lectures.

**WVIT 465. Senior Project - Research Experience in Enology or Viticulture. 2 units**
Prerequisite: STAT 218; completion of the Graduate Writing Requirement; and consent of instructor.

Involvement in the experimental design, execution, data analysis and reporting of research under the direct supervision of faculty. Completion of several critiques of current peer-reviewed journal articles in enology and/or viticulture. Total credit limited to 4 units.

**WVIT 470. Selected Advanced Topics. 1-4 units**
Prerequisite: Consent of instructor.

Directed group study of selected topics for advanced students. Open to undergraduate and graduate students. The Class Schedule will list topic selected. Total credit limited to 8 units. 1 to 4 lectures.

**WVIT 471. Selected Advanced Laboratory. 1-4 units**
Prerequisite: Consent of instructor.

Directed group laboratory study of selected topics for advanced students. Open to undergraduate and graduate students. The Class Schedule will list topic selected. Total credit limited to 8 units. 1 to 4 laboratories.

**WVIT 477. Advanced Wine Sensory Analysis. 4 units**
Prerequisite: WVIT 301; WVIT 442; and at least 18 years in age.

Advanced sensory evaluation of wines. Human physiology and wine chemistry in the interphase of wine sensory analysis. Wine varieties and styles, including selected appellations of Spain, France, Germany, Italy, Chile, Argentina, South Africa, Australia, New Zealand, Canada, and United States. 3 lectures, 1 laboratory.