Wine and Viticulture

Agricultural Sciences Bldg. (11), Room 217
Phone: 805.756.7308; Fax: 805.756.1335
http://www.wvit.calpoly.edu/

Department Head: Benoit Lecat

Academic Programs

Program name          Program type
Wine and Viticulture  BS

Professional positions within the grape and wine industry are multi-dimensional, where winemakers and winegrape-growers work together with wine marketing and sales personnel. To develop successful strategies, management teams need to understand all aspects of wine. The WVIT major provides a unique interdisciplinary learning experience, combining a solid foundation in winegrape production, winemaking, and wine business with a concentration in enology, viticulture or wine business. With a campus located in the heart of California's Central Coast wine country, Cal Poly students have the added benefit of gaining hands-on experience at one of more than 400 local vineyards and wineries. The WVIT major is based on fundamental and applied sciences, modern agribusiness principles, and appropriate social sciences. The curriculum encompasses winegrape cultivation, enology, sensory science, and wine business and fosters an academic alliance among production agriculture, food science, and agricultural business interests to provide an academic understanding of the "vine to glass" philosophy.

Cal Poly has a 14-acre campus vineyard and pilot winery that provide students the opportunity to practice our "learn-by-doing" method of education.

Undergraduate Program

BS Wine and Viticulture

The major is based on fundamental and applied sciences, modern agribusiness principles, and appropriate social sciences. The curriculum encompasses winegrape cultivation, enology, and wine business and fosters an academic alliance among production agriculture, food science, and agricultural business interests to provide an academic understanding of the "vine to glass".

Concentrations

Enology

The science of winemaking and its creative and practical application. Students monitor and assess wines and winemaking choices using sensory, chemical and microbiological analyses. Graduates are able to make creative winemaking decisions, manage a winery and provide successful solutions to winemaking challenges.

Viticulture

Intensive training in all aspects of quality wine grape production. Students learn site evaluation and vineyard development, disease and pest management, sustain-ability, and state-of-the-art cultural practices. Graduates typically become vineyard managers, pest control advisors, or vineyard owners.

Wine Business

Students learn financial management, principles of vineyard and winery operations, strategic planning, branded wine marketing, packaging, wine consumer behavior, and government compliance. Graduates are prepared for a variety of wine industry careers, with many planning to operate vineyards or wineries of their own.

Graduate Program

Cal Poly offers a Master of Science degree in Agriculture in which students can choose a thesis topic in enology, viticulture or wine business. Please refer to the MS Agriculture (http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/#graduatetext) section of the College of Agriculture, Food and Environmental Sciences.

WVIT Courses

WVIT 101. Orientation to Wine and Viticulture. 1 unit
CR/NC
Term Typically Offered: F
Introduction to the wine and viticulture program. Emphasis on curriculum and career planning. Credit/No Credit grading only. 1 lecture.

WVIT 102. Global Wine and Viticulture. 4 units
Term Typically Offered: F, SP
Introduction to wine grape growing, winemaking, and wine business. Brief history and overview of major global wine regions, including growing conditions, grape varieties, winemaking styles, and wine business practices. 4 lectures.

WVIT 202. Fundamentals of Enology. 4 units
Term Typically Offered: F, W
Prerequisite: CHEM 111 or CHEM 127.
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.

WVIT 210. Viticultural Practices. 2 units
Term Typically Offered: F, SP
Critical viticultural practices including planting, pruning, canopy management, fruit thinning, harvest, floor management, trellis and irrigation maintenance. Total credit limited to 4 units. 2 activities. Crosslisted as AEPS/WVIT 210.

WVIT 231. Viticulture I. 4 units
Term Typically Offered: F, W, SP
Understanding of internal and external factors affecting grape productivity. Historical and international perspectives on grape growing. Vineyard production strategies. Not open to students with credit in WVIT 232. 3 lectures, 1 laboratory. Crosslisted as AEPS/WVIT 231.
WVIT 232. Basic Viticulture. 4 units
Term Typically Offered: F, W, SP
Prerequisite: AEPS 120 or BOT 121; CHEM 111 or CHEM 127; SS 121.
Fundamentals of grape growing, with emphasis on wine grapes. 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. 3 lectures, 1 laboratory.

WVIT 270. Selected Topics. 1-4 units
Term Typically Offered: TBD
Prerequisite: Open to undergraduate students and consent of instructor.
Directed group study of selected topics. The Schedule of Classes will list title selected. Total credit limited to 8 units. 1 to 4 lectures.

WVIT 301. Wine Microbiology. 4 units
Term Typically Offered: SP
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.

WVIT 302. Wine Fermentation Laboratory. 2 units
Term Typically Offered: F
Prerequisite: WVIT 202.
Alcoholic and malolactic fermentation, maturation, stabilization and bottling of finished wines. Students must be 21 years or older. Not open to students with credit in WVIT 404, WVIT 405 or WVIT 406. 1 lecture, 1 laboratory.

WVIT 311. Survey of Viticulture. 4 units
Term Typically Offered: TBD
Prerequisite: AEPS/WVIT 210 and completion of GE Area B2.
Introduction to winegrowing including the life cycle of the vine, site selection and the concept of 'terroir', canopy management and cultural practices influencing wine quality. Decision making processes in pest management, irrigation strategies, and organic and sustainable vineyard practices. Current issues in mechanization and its impact on labor management, in the concept of business decisions. Not open to students with credit in AEPS 231. 4 lectures. Crosslisted as AEPS/ WVIT 311.

WVIT 331. Advanced Viticulture - Fall. 4 units
Term Typically Offered: F, W, SP
Prerequisite: AEPS/WVIT 231 or WVIT 232.
Advanced viticulture theory and practice, with emphasis on fall season activities. Vine vegetative and reproductive cycles, canopy quality assessments, berry chemistry and quality, advanced level varieties and rootstocks, vineyard floor management, mechanical harvesting and pruning. Field trips required. 3 lectures, 1 laboratory. Crosslisted as AEPS/WVIT 331.

WVIT 332. Advanced Viticulture - Winter. 4 units
Term Typically Offered: W
Prerequisite: AEPS/WVIT 231 or WVIT 232.
Advanced viticulture theory and practice with emphasis on winter season activities. Vine shoot/fruit balance, advanced level grafting, photosynthesis and respiration, vine water relations, grapevine breeding and improvement. 3 lectures, 1 laboratory.

WVIT 333. Advanced Viticulture - Spring. 4 units
Term Typically Offered: SP
Prerequisite: AEPS/WVIT 231 or WVIT 232.
Advanced viticulture theory and practice with emphasis on spring activities. Frost management, advanced vineyard establishment, advanced canopy management, vine water relations and advanced irrigation systems, advanced nutrition and fertilization. 3 lectures, 1 laboratory.

WVIT 339. Internship Wine and Viticulture. 1-12 units
CR/NC
Term Typically Offered: F,W,SP,SU
Prerequisite: AEPS/WVIT 231, WVIT 202 or WVIT 311; 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.

WVIT 343. Branded Wine Marketing. 4 units
Term Typically Offered: F,W
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.

WVIT 361. Senior Project I - Enology and Viticulture Research Planning. 2 units
Term Typically Offered: F,W,SP,SU
Prerequisite: STAT 218 and junior standing.
Development and planning of a senior project relevant to enology and/or viticulture, including selection of topic, literature review and reference list, outline of experimental design and methodology, and appropriate statistical analyses. 2 lectures.

WVIT 365. Wine Analysis and Amelioration. 4 units
Term Typically Offered: SP
Prerequisite: WVIT 202; for WVIT majors only.
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. Formerly FSN 365.
WVIT 404. Winemaking I. 4 units
Term Typically Offered: F
Prerequisite: WVIT 202 and WVIT 365; students must be at least 21 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
Term Typically Offered: W
Prerequisite: WVIT 404; students must be at least 21 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
Term Typically Offered: SP
Prerequisite: WVIT 405; students must be at least 21 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
Term Typically Offered: SP
Prerequisite: AEPS/WVIT 231 or AEPS/WVIT 311; 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. Total credit limited to 8 units. 3 lectures, 1 activity. Crosslisted as AEPS/WVIT 414.

WVIT 423. Wine Law and Compliance. 4 units
Term Typically Offered: W, SP
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 424. Winegrape Growing: Fall. 2 units
Term Typically Offered: F
Prerequisite: AEPS/WVIT 231; AEPS 321; BRAE 340; SS 221; and STAT 218.
Management of campus winegrape vineyards in the fall, including harvesting; fertilization; disease, insect, vertebrate and weed management; pruning; soil management; trellis repair; and cover crop planting and maintenance. 1 lecture, 1 laboratory.

WVIT 425. Winegrape Growing: Winter. 2 units
Term Typically Offered: W
Prerequisite: AEPS/WVIT 231; AEPS 321; BRAE 340; SS 221; and STAT 218.
Management of campus winegrape vineyard in the winter, including pruning; trellis repair; irrigation system maintenance; disease, vertebrate and weed management; cover crop maintenance. 1 lecture, 1 laboratory.

WVIT 426. Winegrape Growing: Spring. 2 units
Term Typically Offered: SP
Prerequisite: AEPS/WVIT 231; AEPS 321; BRAE 340; SS 221; and STAT 218.
Management of campus winegrape vineyards in the spring, including canopy manipulation; planting; training; irrigation; nutrient evaluation; fertilization; crop evaluation; disease, insect, vertebrate and weed management. 1 lecture, 1 laboratory.

WVIT 427. Winegrape Growing: Summer. 2 units
Term Typically Offered: SU
Prerequisite: AEPS/WVIT 231; AEPS 321; BRAE 340; SS 221; and STAT 218.
Management of campus winegrape vineyards in the summer, including canopy manipulation; training; irrigation; crop evaluation; soil management; and disease, insect, vertebrate and weed management. 1 lecture, 1 laboratory.

WVIT 433. Wine Sales and E-Commerce. 4 units
Term Typically Offered: W
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
Term Typically Offered: F,W,SP,SU
Prerequisite: WVIT 202 and STAT 218; students must be at least 21 years in age; for WVIT majors only.
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. Formerly FSN/WVIT 342.

WVIT 444. Wine Marketing Research and Market Analysis. 4 units
Term Typically Offered: F
Prerequisite: STAT 217 or STAT 218; and WVIT 343.
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.

WVIT 450. Wine Business Strategies. 4 units
Term Typically Offered: W
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**
Term Typically Offered: SP
Prerequisite: Completion of at least two of the following courses: AGB 422, WVIT 343, WVIT 444 and AGB 323; Senior standing; WVIT majors only.

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 461. Senior Project I - Enology and Viticulture. 2 units**
Term Typically Offered: F, W, SP
Prerequisite: STAT 217 or STAT 218; junior standing and consent of instructor; WVIT majors only.

Development of a senior project topic under faculty supervision, review of relevant literature, development of experimental research design. Subject must be relevant to enology and/or viticulture.

**WVIT 462. Senior Project II - Enology and Viticulture. 2 units**
Term Typically Offered: F, W, SP
Prerequisite: WVIT 361 or WVIT 461; Senior standing and consent of instructor.

Completion of a research project under faculty supervision. Data collection, analysis and formal report preparation. Subject must be relevant to enology and/or viticulture.

**WVIT 463. Issues, Trends and Careers in the Wine Industry. 2 units**
Term Typically Offered: W
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 470. Selected Advanced Topics. 1-4 units**
Term Typically Offered: TBD
Prerequisite: Consent of instructor.

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

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

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