

WINE AND VITICULTURE

<https://wvit.calpoly.edu/>

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, a state-of-the-art facility, the JUSTIN & J. Lohr Center for Wine and Viticulture and a wine sales program that provide students the opportunity to practice our "learn-by-doing" method of education.

Undergraduate Programs

- Wine and Viticulture (BS) (<https://catalog.calpoly.edu/agriculture-food-environmental-sciences/wine-viticulture/wine-viticulture-bs/>)

WVIT Courses

WVIT 1102 Global Wine and Viticulture (3 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. 3 lectures. Formerly WVIT 102.

WVIT 2202 Fundamentals of Enology (3 units)

Term Typically Offered: F, SP

Prerequisite: One of the following: CHEM 124, CHEM 1120, CHEM 127, or CHEM 1122.

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. Field trip may be required. 3 lectures. Formerly WVIT 202.

WVIT 2233 Basic Viticulture (3 units)

Term Typically Offered: TBD

Prerequisite: One of the following: PLSC 120, PLSC 1120, BOT 121 or BOT 1121; one of the following: CHEM 124, CHEM 1120, CHEM 127, or CHEM 1122; and SS 120 or SS 1120.

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. Course may be offered in classroom-based or online format. 3 lectures. Crosslisted as PLSC 2232/WVIT 2233. Formerly PLSC 232/WVIT 232.

WVIT 2270 Special Topics (1-3 units)

Term Typically Offered: TBD

Prerequisite: Consent of instructor.

Directed group study of special topics. The Class Schedule will list topic selected. Repeatable up to 6 units. 1 to 3 lectures. Formerly WVIT 270.

WVIT 3300 Survey of Grape Growing and Winemaking (3 units)

Term Typically Offered: F, SP

2026-28 or later: Upper-Div GE Area 2/5

2020-26 catalogs: Upper-Div GE Area B

Prerequisite: Junior standing; completion of GE Area 1 with grades of C- or better (GE Area A on the 2020-26 catalogs); completion of GE Area 5A (GE Area B1 on the 2020-26 catalogs); completion of GE Area 5B (GE Area B2 on the 2020-26 catalogs); and completion of GE Area 2 with a grade of C- or better (GE Area B4 on the 2020-26 catalogs).

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, WVIT 2202, WVIT 233, or WVIT 2233. Course may be offered in classroom-based or online format. 3 lectures. Fulfills GE Areas Upper-Division 2 or Upper-Division 5 (GE Area Upper-Division B for students on the 2020-26 catalogs). Formerly WVIT 300.

WVIT 3301 Wine Microbiology (3 units)

Term Typically Offered: SP

Prerequisite: One of the following: MCRO 221, MCRO 224, MCRO 2221, or MCRO 2224. Recommended: WVIT 202 or WVIT 2202.

Wine yeasts, bacteria, and molds: morphology and methods of identification. Successful alcoholic and malolactic fermentations, management and prevention of unwanted microbial growth, micro-organisms and flavor development. 2 lectures, 1 laboratory. Crosslisted as MCRO/WVIT 3301. Formerly MCRO/WVIT 301.

WVIT 3302 Wine Fermentation Laboratory (2 units)

Term Typically Offered: SP

Prerequisite: Wine and Viticulture Major; WVIT 202 or WVIT 2202; 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 4404, WVIT 406, or WVIT 4405. 1 lecture, 1 laboratory. Formerly WVIT 302.

WVIT 3331 Advanced Viticulture - Fall (4 units)

Term Typically Offered: TBD

Prerequisite: One of the following: PLSC 232, PLSC 2232, WVIT 233, or WVIT 2233.

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 may be required. Course may be offered in classroom-based or online format. 3 lectures, 1 laboratory. Crosslisted as PLSC/WVIT 3331. Formerly PLSC/WVIT 331.

WVIT 3332 Advanced Viticulture - Spring (4 units)

Term Typically Offered: TBD

Prerequisite: One of the following: PLSC 232, PLSC 2232, WVIT 233, or WVIT 2233; and PLSC/WVIT 331 or PLSC/WVIT 3331.

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. Course may be offered in classroom-based or online format. 3 lectures, 1 laboratory. Crosslisted as PLSC 3337/WVIT 3333. Formerly PLSC 337/WVIT 333.

WVIT 3339 Internship in Wine and Viticulture (1-12 units)

Term Typically Offered: F, SP, SU

CR/NC

Prerequisite: Junior standing; WVIT 202 or WVIT 2202; PLSC/WVIT 233 or PLSC/WVIT 2233; and consent of instructor.

Career experience in winegrape growing, wine production, or wine business. Repeatable up to 12 units. Credit/No Credit grading. Formerly WVIT 339.

WVIT 3343 Branded Wine Marketing (3 units)

Term Typically Offered: F, SP

Prerequisite: One of the following: AGB 212, AGB 2212, ECON 201, ECON 2001, ECON 221, ECON 2030, ECON 222, or ECON 2040.

Wine marketing strategy, branding, consumer behavior, and use of the marketing mix. Federal and state regulations impacting marketing strategies and marketing mix decisions. Focus on domestic markets; domestic and foreign producers. Role of bulk wine market in branded wine sector. Course may be offered in classroom-based or online format. 3 lectures. Formerly WVIT 343.

WVIT 3345 Wine Marketing Research and Market Analysis (3 units)

Term Typically Offered: SP

Prerequisite: STAT 118 or STAT 1110; and WVIT 343 or WVIT 3343.

Application of statistical theory to design research examining the wine and grape markets. Evaluation of appropriate data collection methods, quantitative analyses, and interpretation of primary and secondary wine and grape industry data. 3 lectures. Formerly WVIT 345.

WVIT 3346 Winery Digital Media Marketing and Data Analytics (3 units)

Term Typically Offered: TBD

Prerequisite: AGB 260 or AGB 2260; and WVIT 343 or WVIT 3343.

Development of digital marketing skills (audio and video) and techniques to produce content for wineries and evaluate results. Emphasis on regulatory restrictions in wine marketing, return on investment strategy, optimization and analytic metrics and customer acquisition costs. Course may be offered in classroom-based or online format. 3 lectures. Formerly WVIT 346.

WVIT 3365 Wine Analysis and Amelioration (3 units)

Term Typically Offered: SP

Prerequisite: Wine and Viticulture major; WVIT 202 or WVIT 2202; CHEM 124, CHEM 127, or CHEM 1120; CHEM 125, CHEM 128, or CHEM 1122; and CHEM 312 or CHEM 2240. Corequisite: CHEM 314 or CHEM 3350.

Winery laboratory practices. Basic principles, techniques, and interpretation of common analyses for sugars, acidity, nitrogen, alcohol, volatile acidity, sulfur dioxide, tartrate, protein, phenols and color; wine and must amelioration, amendment effects, usage, calculations and procedures of addition. Field trip may be required. 2 lectures, 1 laboratory. Formerly WVIT 365.

WVIT 4400 Special Problems for Advanced Undergraduates (1-3 units)

Term Typically Offered: TBD

Prerequisite: Consent of instructor.

Individual investigation, research, studies, or surveys of selected problems. Repeatable up to 6 units. Formerly WVIT 400.

WVIT 4404 Winemaking I (4 units)

Term Typically Offered: F

Prerequisite: Wine and Viticulture major; WVIT 365 or WVIT 3365; 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 and general cellar practices. Sensory and laboratory analyses. Monitoring and maintaining wine integrity. 3 lectures, 1 laboratory. Formerly WVIT 404.

WVIT 4405 Winemaking II (4 units)

Term Typically Offered: SP

Prerequisite: Wine and Viticulture major; WVIT 404 or WVIT 4404; and at least 18 years in age.

Sanitation practices; monitoring and maintaining wine integrity; blending trials; general cellar practices; sensory and laboratory analyses; planning, managing and implementing the preparation of wine including blending, fining, filtration, and bottling. 3 lectures, 1 laboratory. Formerly WVIT 406.

WVIT 4414 Grape Pest Management (3 units)

Term Typically Offered: F

Prerequisite: PLSC/WVIT 233 or PLSC/WVIT 2233; PLSC 313 or PLSC 3313; and PLSC 323 or PLSC 3323.

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. Field trip required. 2 lectures, 1 laboratory. Formerly PLSC/WVIT 414.

WVIT 4423 Wine Law and Compliance (3 units)

Term Typically Offered: F, SP

Prerequisite: WVIT 343 or WVIT 3343.

Legal aspects of wine making/marketing. Federal (Tax and Trade Bureau) and State business requirements and State and Federal regulations impacting winery and viticultural practices in California. 3 lectures. Formerly WVIT 423.

WVIT 4428 Winegrape Vineyard Management (3 units)

Term Typically Offered: SP

Prerequisite: AGB 214 or AGB 2214; SS 221 or SS 2221; and PLSC/WVIT 233 or PLSC/WVIT 2233. Recommended: PLSC/WVIT 331 or PLSC/WVIT 3331; and PLSC/WVIT/332 or PLSC/WVIT 3332.

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. 2 lectures, 1 laboratory. Formerly WVIT 428.

WVIT 4433 Wine Industry Sales (4 units)

Term Typically Offered: SP

Prerequisite: WVIT 343 or WVIT 3343.

Wine industry sales channels by wine size. Three-tier distribution and direct-to-consumer sales structures. Additional areas of focus include customer relations management, pricing, legal framework, and logistics. Not open to students with credit in WVIT 344 or WVIT 433. 4 lectures.

WVIT 4442 Sensory Evaluation of Wine (3 units)

Term Typically Offered: F, SP, SU

Prerequisite: Wine and Viticulture major; WVIT 202 or WVIT 2202; STAT 218 or STAT 1110; and at least 18 years in age.

Evaluation of wines using the sensory evaluation techniques. Difference and rating tests. Descriptive analysis and pairing of wine and food. 2 lectures, 1 laboratory. Formerly WVIT 442.

WVIT 4447 Logistics for the Global Wine Industry (3 units)

Term Typically Offered: SP

Prerequisite: WVIT 102 or WVIT 1102; WVIT 343 or WVIT 3343; and STAT 218 or STAT 1110.

Scope and elements of the international wine logistics system including supply and distribution channels, transportation, inventory, warehousing, packaging and order processing. 3 lectures. Formerly WVIT 447.

WVIT 4450 Wine Business Plan Development (3 units)

Term Typically Offered: F, SP

Prerequisite: One of the following: AGB 214, AGB 2214, BUS 214, or BUS 2214; and one of the following: WVIT 343, WVIT 3343, BUS 346, or BUS 3346.

Strategic planning process for wine businesses including product specification, distribution, finance, and marketing. Development of a complete business plan with careful adherence to the unique and complex regulations that apply to wine businesses. 3 lectures. Formerly WVIT 450.

WVIT 4460 Senior Project - Wine Business (3 units)

Term Typically Offered: F, SP

Prerequisite: Wine and Viticulture major; Senior standing; WVIT 343 or WVIT 3343; and one of the following: WVIT 345, WVIT 3345, WVIT 450, or WVIT 4450.

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. 3 lectures. Formerly WVIT 460.

WVIT 4463 Issues, Trends, and Careers in the Grape and Wine Industry (2 units)

Term Typically Offered: F, SP

Prerequisite: Wine and Viticulture major; and Senior standing.

Current issues and trends in viticulture, enology and wine business. Career opportunities and planning for Wine and Viticulture majors nearing graduation. 2 seminars. Formerly WVIT 463.

WVIT 4464 Senior Project - Enology and Viticulture (3 units)

Term Typically Offered: F, SP

Prerequisite: Senior standing; STAT 218 or STAT 1110; and one of the following: PLSC/WVIT 331, PLSC/WVIT 3331, WVIT 365, or WVIT 3365.

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. 3 lectures. Formerly WVIT 464.

WVIT 4465 Senior Project - Research Experience in Enology or Viticulture (3 units)

Term Typically Offered: TBD

Prerequisite: Senior standing; STAT 218 or STAT 1110; 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. Repeatable up to 6 units. Formerly WVIT 465.

WVIT 4470 Special Advanced Topics (1-3 units)

Term Typically Offered: TBD

Prerequisite: Consent of instructor.

Directed group study of special topics for advanced students. The Class Schedule will list topic selected. Repeatable up to 6 units. 1 to 3 lectures. Formerly WVIT 470.

WVIT 4471 Special Advanced Laboratory (1-3 units)

Term Typically Offered: TBD

Prerequisite: Consent of instructor.

Directed group laboratory study of special topics for advanced students. The Class Schedule will list topic selected. Repeatable up to 6 units. 1 to 3 laboratories. Formerly WVIT 471.

WVIT 4477 Advanced Wine Sensory Analysis (3 units)

Term Typically Offered: SP

Prerequisite: MCRO/WVIT 301 or MCRO/WVIT 3301; WVIT 442 or WVIT 4442; 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. 2 lectures, 1 laboratory. Formerly WVIT 477.