**Agribusiness**

**AG 100 Introduction to Agricultural Studies and Careers**  
1.0 units  
Acceptable for credit: Transfer CSU  
This course provides guidance for the educational pathways leading to degrees and certificates in the agricultural sciences. Emphasis also provided in the exploration of agriculture careers and employment opportunities. Assists students in setting both educational and career goals. Students develop an educational plan based on the curriculum requirements of agriculture majors. Students will learn the skills necessary for success in obtaining, maintaining and advancing in agriculture careers. Current issues that affect agriculture will be discussed. (Letter Grade or Pass/No Pass)

**AG 101 Introduction to Winemaking/Enology**  
3.0 units  
Acceptable for credit: Transfer to UC, CSU  
An examination of the principles of enology (winemaking) including history, grape growing, chemistry, wine microorganisms, fermentation, winemaking operations, cooperage, physiology and sociology of wine, and health and legal issues. (Fall, Spring) (Letter Grade or Pass/No Pass)

**AG 102 Introduction to Viticulture**  
3.0 units  
Acceptable for credit: Transfer to UC, CSU  
An introduction to viticulture including grape growing, biology, anatomy, history, distribution, propagation, varieties, wine types, climate, common diseases and pests. (Fall, Spring) (Letter Grade or Pass/No Pass)

**AG 103 Sensory Evaluation of Wine**  
3.0 units  
Acceptable for credit: Transfer CSU  
Limitations on Enrollment: Must be 21 years of age or older.
An exploration of the principles of sensory wine evaluation. Demonstrates how wine quality is affected by climate, viticulture practices, production techniques, grape varieties, vineyard location, oak aging, and storage conditions. Participants will survey and evaluate commercial wine styles. (Fall, Spring) (Letter Grade or Pass/No Pass)

**AG 104 Advanced Sensory Evaluation of Wine**  
3.0 units  
Acceptable for credit: Transfer CSU  
Limitations on Enrollment: Must be 21 years of age or older
Prerequisite: AG 103 - Sensory Evaluation of Wine
An investigation of Bordeaux, Burgundian, and Rhone varietals from regions where they occur world wide – France, USA, Chile, Italy, Australia, New Zealand, and Germany. Focuses on geography/soils, enological considerations, viticulture practices, wine production techniques and styles produced. (Spring) (Letter Grade or Pass/No Pass)

**AG 105 Wine Marketing and Sales**  
3.0 units  
Acceptable for credit: Transfer CSU
An introductory overview of the wine industry, production, planning, marketing channels, advertising, promotion, packaging, pricing, retail/wholesale distribution, and public relations. (Letter Grade or Pass/No Pass)

**AG 106 Winery and Vineyard Financial Management**  
3.0 units  
Acceptable for credit: Transfer CSU

Advisories: ACCT 130 - Financial Accounting; CBIS 371 - Intro to Excel
Presents the many aspects of operating a small to medium-sized winery in today's business environment. Topics include an overview of the California grape and wine industry, government compliance, financial planning (capital and operating budgets), grape supply options, grape contracts, financial and managerial accounting for vineyards and wineries. Includes the basics of vineyard and winery financial management e.g. using financial statements and what they mean, cash flow management, financial and investment analysis, banking and funding sources. The class combines short lecture and hands-on experience to gain practice with, and examine the limitations of, each analysis. Some basic understanding of Microsoft Excel is recommended. (Fall, Spring) (Letter Grade or Pass/No Pass)

**AG 114 Wine Business**  
3.0 units  
Acceptable for credit: Transfer CSU  
Advisories: BUS 101 - Introduction to Business; ENGL 514 - Writing Skills 4
The course will cover the basics of wine business for commercial wine production, sales, marketing, logistics, compliance and administration. The class combines short lecture and hands-on experience to gain practice with, and examine the limitations of, each analysis. The student will work in small groups analyzing regional wine industries. (Fall, Spring) (Letter Grade or Pass/No Pass)

**AG 120 Viticulture Operations 1**  
3.0 units  
Acceptable for credit: Transfer CSU  
Advisories: AG 102 - Introduction to Viticulture
Vineyard practices for the fall season including cultivation, frost control, planting, training, irrigation, disease, and pest control. Laboratory work will stress practical applications of viticulture theory. Operations in commercial vineyards will be studied through field trips. (Fall) (Letter Grade or Pass/No Pass)

**AG 121 Viticulture Operations 2**  
3.0 units  
Acceptable for credit: Transfer CSU  
Vineyard practices for the spring season including cultivation, frost control, planting, training, irrigation, disease, and pest control. Laboratory work will stress practical applications of viticulture theory. Operations in commercial vineyards will be studied through field trips. (Spring) (Letter Grade or Pass/No Pass)

**AG 122 Viticulture Operations 3**  
1.0 unit  
Acceptable for credit: Transfer CSU  
Vineyard practices for the summer season including canopy management, crop load assessment and adjustment, pest and disease monitoring and management, weed control, irrigation, and grape quality improvement techniques. (Summer) (Letter Grade or Pass/No Pass)

**AG 125 Soils and Plant Nutrition**  
4.0 units  
Acceptable for credit: Transfer to UC, CSU  
C-ID Course Number: AG-PS 128L  
Advisories: CHEM 120 - Introductory Chemistry
A study of the physical, chemical, and biological properties of soils, including plant nutrition and factors affecting the availability of nutrients. Composition, value, use and application of fertilizer materials and soil amendments will be covered. The course is not open to students who are enrolled in or have received credit for VEN 125. (Fall, Spring) (Letter Grade or Pass/No Pass)

**AG 130 Integrated Pest Management**  
4.0 units  
Acceptable for credit: Transfer CSU  
Prerequisite: AG 102 - Introduction to Viticulture; or AG 161 - Introduction to Plant Science
A study of the various pests and diseases found in California vineyard, fruit, vegetable, nut and grain crops - emphasizing pest and disease identification, sampling and monitoring techniques, and control methods. Integrated pest management approaches will be emphasized, including the latest biocontrol strategies, biotechnological advances, and disease modeling for risk management. Students will visit local vineyards and farms providing "hands-on" learning opportunities. Two separate lab sections will be offered in order to provide students the appropriate option for their agricultural field of interest. Section I will be for the Viticulture focus, Section II will be for the Agriculture focus. (Letter Grade or Pass/No Pass)

AG 134 Internship Seminar 1.0 unit
Acceptable for credit: Transfer CSU
Corequisite: Concurrent enrollment in AG 149, CWE 149 or CWE 302
Provides students with a seminar format to discuss, analyze, and critically evaluate their work-based learning experiences. This forum emphasizes job market Information, attitudes, and abilities that facilitate job success; skills necessary for maintaining employment; and techniques for enhancing job advancement opportunities. (Fall) (Letter Grade Only)

AG 135 Grapevine Physiology 1.0 unit
Acceptable for credit: Transfer CSU
Advisories: AG 102 - Introduction to Viticulture
An advanced study of grapevine physiology and phenology. Topics include vine balance, flowering and fruit set, stages of berry growth and vine water status. This course is designed for those working in the wine grape industry and already familiar with vineyard operations. (Letter Grade or Pass/No Pass)

AG 140 Viticulture Operations 4 3.0 units
Acceptable for credit: Transfer CSU
Prerequisite: AG 121 - Viticulture Operations 2
Advanced vineyard practices for the fall season including crop projection, grape quality assessment, grape maturity monitoring, harvest coordination, post-harvest practices, and budgeting. Management planning and financial aspects of the operations are emphasized. (Fall) (Letter Grade or Pass/No Pass)

AG 141 Viticulture Operations 5 3.0 units
Acceptable for credit: Transfer CSU
Prerequisite: AG 121 - Viticulture Operations 2
Advanced vineyard practices for the winter and spring seasons including vine balance determination, pruning, cover crop management, frost protection, vine training, vineyard research trials, and budgeting. Management planning and financial aspects of the operations are emphasized. (Spring) (Letter Grade or Pass/No Pass)

AG 142 Viticulture Operations 6 1.0 unit
Acceptable for credit: Transfer CSU
Advanced vineyard practices for the summer season including equipment operation and maintenance, vine training, vineyard research trials, and budgeting. Management planning and financial aspects of the operations are emphasized. (Summer) (Letter Grade or Pass/No Pass)

AG 149 Cooperative Work Experience: Occupation 1.0 - 8.0 units
Acceptable for credit: Transfer CSU
Limitations on Enrollment: To participate in Cooperative Work Experience: (1) students must be working at a job within their major, (2) students must be able to become involved in new or expanded responsibilities on the job, (3) the employer must be willing to cooperate with the college in the supervision and evaluation of the student and (4) the student must attend all coordination/consultation meetings in addition to other work and class responsibilities. NUMBER OF TIMES COURSE CAN BE REPEATED: Students enrolled in CWE 149 may earn up to 8 units of credit per semester not to exceed 16 units in total. Any units earned in any other Cooperative Work Experience course will be included in the 16 unit maximum. CWE Units Unpaid Placement: 1 unit 60 hours 2 units 120 hours 3 units 180 hours 4 units 240 hours 5 units 300 hours 6 units 360 hours 7 units 420 hours 8 units 480 hours CWE Units Paid Placement: 1 unit 75 hours 2 units 150 hours 3 units 225 hours 4 units 300 hours 5 units 375 hours 6 units 450 hours 7 units 525 hours 8 units 600 hours Supervised employment extending classroom-based learning to an on-the-job learning environment relating to the student's career and educational goals. In addition, these work experiences improve the student's basic work skills and professional competencies by creating career awareness, improving work habits, and fostering positive workplace attitudes. (Fall, Spring, Summer) (Letter Grade or Pass/No Pass)

AG 150 Introduction to Agribusiness 3.0 units
Acceptable for credit: Transfer CSU
C-ID Course Number: AB 104
Provides a basic understanding of the business and economics of the agricultural industry; an introduction to the economic aspects of agriculture and their implications to the agricultural producer, consumer and the food system; management principles encountered in the day to day operation of an agricultural enterprise as they relate to the decision making process. (Letter Grade or Pass/No Pass)

AG 151 Winery Equipment 2.0 units
Acceptable for credit: Transfer CSU
Prerequisite: Completion of or concurrent enrollment in; AG 101 - Introduction to Winemaking/Enology
Presents all aspects of winery equipment; function, use, location, safe operation and repair. A strong emphasis is placed on safety and legal compliance. Production, storage and packaging equipment are included. (Fall) (Letter Grade or Pass/No Pass)

AG 152 Introduction to Animal Science 3.0 units
Acceptable for credit: Transfer to UC, CSU
C-ID Course Number: AG-AS 104
A scientific approach to the livestock industry encompassing aspects of animal anatomy, physiology, nutrition, genetics and epidemiology. Emphasis on the origin, characteristics, adaptations and contributions of livestock to the modern agriculture industry. Field trips may be required. (Letter Grade or Pass/No Pass)

AG 153 Introduction to Sustainable Agriculture 3.0 units
Acceptable for credit: Transfer CSU
Introduction to the history, definitions, concepts, principles and practices of sustainable agricultural systems. Includes an examination of case studies to connect sustainable agriculture principles to actual farming practices. (Letter Grade or Pass/No Pass)

AG 154 Introduction to Fruit Science 3.0 units
Acceptable for credit: Transfer CSU
The botany, taxonomy, and development of major fruit, vine, and nut crops in California including variety selection, production practices including site selection establishment, fertilization, pollination, irrigation, harvest, storage, processing, marketing, pest management, and pruning. (Letter Grade or Pass/No Pass)
AG 155 Introduction to Mechanized Agriculture  
3.0 units  
Acceptable for credit: Transfer CSU  
Basic mechanical skills in woodworking, cold metal, electricity, plumbing, concrete, and project construction skills as related to farm maintenance and repair. Development of hand and power tool skills as well as emphasis on safety practices for all mechanical areas. Shop safety. Laboratory required. (Letter Grade or Pass/No Pass)

AG 156 Intro to Environmental Horticulture 3.0 units  
Acceptable for credit: Transfer to UC, CSU  
General course in environmental horticulture with emphasis on nursery operations, landscaping, turf management, and floral industries including: basic botany, cultural practices, propagation, structures and layout, pest management, planting, container gardening and houseplants, floral design, plant identification, turfgrass installation and care, and survey of career opportunities. Laboratory required. (Letter Grade or Pass/No Pass)

AG 157 Agricultural Sales, Communication & Leadership 3.0 units  
Acceptable for credit: Transfer CSU  
The study of principles and practices of the selling process: selling strategies and approaches, why and how people buy, prospecting, territory management, and customer service. Self-management, communication, and interpersonal skills necessary in developing managerial abilities, leadership qualities, and facilitating teamwork within the agribusiness sector will be explored. Students will gain experience through role-play, formal sales presentations, and job shadowing. The course content is organized to give students an in-depth understanding of the factors and influences that affect the agribusiness industry on a day-to-day basis. (Letter Grade or Pass/No Pass)

AG 158 Agricultural Economics 3.0 units  
Acceptable for credit: Transfer to UC, CSU  
The place of agriculture and farming in the economic system; basic economic concepts and problems of agriculture; pricing and marketing problems, factors of production; and state and federal farm programs affecting the farmer's economic position. (Fall, Spring) (Letter Grade or Pass/No Pass)

AG 160 Plant Propagation and Production 3.0 units  
Acceptable for credit: Transfer CSU  
C-ID Course Number: AG-EH 116L  
Plant propagation and production practices with emphasis on nursery operations including sexual and asexual reproduction, planting, transplanting, fertilizing, plant pest and disease control; structures and site layout; preparation and use of propagating and planting mediums; use and maintenance of common tools and equipment; regulations pertaining to plant production. Laboratory required. (Letter Grade or Pass/No Pass)

AG 161 Introduction to Plant Science 3.0 units  
Acceptable for credit: Transfer CSU  
C-ID Course Number: AG-PS 104  
Introduction to plant science including structure, growth processes, propagation, physiology, growth media, biological competitors, and post-harvest factors of food, fiber, and ornamental plants. (Letter Grade or Pass/No Pass)

AG 189 Independent Projects in Agribusiness 1.0 - 3.0 units  
Acceptable for credit: Transfer CSU  
Courses for students capable of independent work who demonstrate the need or desire for additional study beyond the regular curriculum. Enrollment allows students to pursue activities such as directed field experience, research, or development of skills and competencies under faculty advisement and supervision. Independent Projects may be earned in most disciplines. Students wishing to enroll in Independent Projects should contact the appropriate instructor identified in the class schedule. If the project proposed is acceptable to that instructor, a contract will be issued no later than the end of the second week of the semester. Units are awarded depending upon satisfactory performance and the amount of time committed by the student to the course. Allowable units vary according to discipline, and are based on the following formula: 1 unit - 48 hours per semester 2 units - 96 hours per semester 3 units - 144 hours per semester (Letter Grade or Pass/No Pass)

AG 301 Pairing Wine and Food 0.5 units  
Acceptable for credit: D - Credit - Degree Applicable  
Limitations on Enrollment: Must be 21 years of age or older.  
Designed to familiarize students with the components of tasting wine and food, to develop wine evaluation techniques, and to pair wines with appropriate food. (Fall, Spring, Summer) (Letter Grade or Pass/No Pass)

AG 302 Progressive Wine and Food Pairing 0.5 units  
Acceptable for credit: D - Credit - Degree Applicable  
Limitations on Enrollment: Must be 21 years of age or older.  
Designed to give students an understanding of how to ensure food flavors and intensity are maximized, while serving a wider range of wines. (Fall, Spring, Summer) (Letter Grade or Pass/No Pass)

AG 303 European Wine and Food 0.5 units  
Acceptable for credit: D - Credit - Degree Applicable  
Limitations on Enrollment: Must be 21 years or older.  
Designed for students wishing to expand their knowledge of wine and food pairings. Focuses on European as well as California wines with appropriate regional food. (Fall, Spring) (Letter Grade or Pass/No Pass)

AG 304 Dessert Wine and Food Pairing 0.5 units  
Acceptable for credit: D - Credit - Degree Applicable  
Limitations on Enrollment: Must be 21 years of age or older.  
Designed for advanced students wishing to expand their knowledge in wine and dessert pairings. Champagnes, sparkling wines and a variety of dessert wines (ports, sherries, Madeira) will be presented. (Fall, Spring, Summer) (Letter Grade or Pass/No Pass)

AG 305 Pairing the Wines and Foods of Provence 0.5 units  
Acceptable for credit: D - Credit - Degree Applicable  
Advisories: AG 301 - Pairing Wine and Food  
Limitations on Enrollment: Must be 21 years of age or older.  
Designed for advanced students wishing to expand their knowledge of wine and food pairings. Focuses on the distinctive foods and wines of the Provence region in southern France. (Fall, Spring, Summer) (Letter Grade or Pass/No Pass)

AG 306 Pairing the Wines and Foods of Tuscany 0.5 units  
Acceptable for credit: D - Credit - Degree Applicable  
Advisories: AG 301 - Pairing Wine and Food  
Limitations on Enrollment: Must be 21 years or older at time of registration.
Designed for advanced students wishing to expand their knowledge of specific wine and food pairings. Focuses on the distinctive foods and wines of the Tuscan region in northern Italy. (Fall, Spring, Summer) (Letter Grade or Pass/No Pass)

**AG 307 Vineyard Irrigation** 3.0 units
Acceptable for credit: D - Credit - Degree Applicable
Students will receive a general background in vineyard irrigation water management, including theory and practice lectures. Vineyard water stress monitoring, ETO, crop coefficients and drip irrigation topics will be covered. (Fall, Spring, Summer) (Letter Grade or Pass/No Pass)

**AG 308 Wine Analysis** 3.0 units
Acceptable for credit: D - Credit - Degree Applicable
Students will receive a general background in wine analysis with theory and demonstrations. Most common and important wine analysis in current winemaking industry settings will be practiced in teams providing hands-on experience. (Fall) (Letter Grade or Pass/No Pass)

**AG 310 Winemaking Operations I** 2.0 units
Acceptable for credit: D - Credit - Degree Applicable
Advisories: AG 101 - Introduction to Winemaking/Enology
Limitations on Enrollment: Must be 18 years of age or older and registered in the Enology/Viticulture major or must be 21 years old if not enrolled in the major.
The first course in a four-semester sequence, students are introduced to winemaking from grape harvest through bottling. (Fall) (Letter Grade or Pass/No Pass)

**AG 311 Winemaking Operations II** 2.0 units
Acceptable for credit: D - Credit - Degree Applicable
Advisories: AG 310 - Winemaking Operations I; and AG 101 - Introduction to Winemaking/Enology
Limitations on Enrollment: Must be 18 years of age or older and registered in the Enology/Viticulture major or must be at least 21 years old.
The second course in a four-semester sequence, students will chemically analyze, fine, and bottle the red and white wines that were fermented in the previous semester. (Spring) (Letter Grade or Pass/No Pass)

**AG 312 Advanced Viticulture** 3.0 units
Acceptable for credit: D - Credit - Degree Applicable
Prerequisite: AG 102 - Introduction to Viticulture
This course will prepare students to understand and make decisions for the viticultural process including canopy management, frost protection, specific deficit irrigation, morphology and physiology of the grapevine. (Spring) (Letter Grade or Pass/No Pass)

**AG 314 Organic/Biodynamic Winegrowing** 3.0 units
Acceptable for credit: D - Credit - Degree Applicable
Introduction to professional organic and biodynamic wine grape production with ecological production methods. Theory and practice with an emphasis on environmental growing conditions. Includes appropriate planting, maintenance, soil fertility, biodiversity, and ecological pest management, current winery practices, and cost analysis. (Spring) (Letter Grade or Pass/No Pass)

**AG 315 Fertilizers & Plant Nutrition** 4.0 units
Acceptable for credit: D - Credit - Degree Applicable
This course will provide an introduction to fertilizers and plant nutrition. Essential nutrients for plant development will be studied as well as deficiency symptoms and methods of correcting these deficiencies. Fertilizer and other soil amendments will be studied as well as the proper management and application methods for these products. This course is not open to students who have completed VEN 315. (Fall, Spring) (Letter Grade or Pass/No Pass)

**AG 316 Introduction to Wine Microbiology** 3.0 units
Acceptable for credit: D - Credit - Degree Applicable
Prerequisite: AG 101 - Introduction to Winemaking/Enology
Introduction to the natural development, physiology, biochemistry and control of yeasts and bacteria involved in the making, aging and spoilage of wine, including conditions that affect microbial growth and ecology during vinification, characteristics of various wine microorganisms, and identification and prevention of spoilage. (Letter Grade or Pass/No Pass)

**AG 318 Advanced Winemaking** 3.0 units
Acceptable for credit: D - Credit - Degree Applicable
Limitations on Enrollment: Must be 21 years old or older at the time of taking this class.
Prerequisite: AG 101 - Introduction to Winemaking/Enology
Students will receive an advanced background in winemaking, in a lecture setting. Relevant winemaking issues are analyzed and discussed. The course will cover the principles of viticulture for winemaking, wine chemistry, principles and practices of making standard types of wines, with special reference to methods of vinification and stability. A brief discussion of winemaking costs and alternatives is presented. (Letter Grade or Pass/No Pass)

**AG 320 Wine Tasting Room Sales** 1.5 units
Acceptable for credit: D - Credit - Degree Applicable
Presents all aspects of wine tasting room service and sales. Cellar clubs, selling techniques, wine vocabulary, and the laws and regulations of serving wine in California are covered. Legalities of shipping wine interstate and the various means of wine shipment are discussed. (Spring, Summer) (Letter Grade or Pass/No Pass)

**AG 321 Winemaking Operations III** 2.0 units
Acceptable for credit: D - Credit - Degree Applicable
Limitations on Enrollment: Student must be at least 21 years old at the time of registration.
Prerequisite: AG 310 - Winemaking Operations I
The third course in a two year sequence, students are introduced to all practical winemaking from grape harvest through bottle aging, including specific winemaking procedures. (Fall) (Letter Grade or Pass/No Pass)

**AG 322 Winemaking Operations IV** 2.0 units
Acceptable for credit: D - Credit - Degree Applicable
Limitations on Enrollment: Student must be at least 21 years old at the time of registration.
Prerequisite: AG 311 - Winemaking Operations II
The fourth course in a two year sequence (four semesters), students are introduced to all practical process of winemaking from grape harvest through bottle aging, including specific winemaking procedures such as stability treatments, personnel management, and wine packaging and quality control. Students must be at least 21 years old on the first day of class and present a valid picture ID. (Spring) (Letter Grade or Pass/No Pass)

**AG 324 Small Acreage Grape Growing** 1.0 unit
Acceptable for credit: D - Credit - Degree Applicable
Learn about small vineyard establishment and maintenance. Topics include: selection of site, variety and rootstock, vineyard layout, irrigation, trellising, planting and pest control. (Letter Grade or Pass/No Pass)
AG 330 Harvest Boot Camp 0.5 units
Acceptable for credit: D - Credit - Degree Applicable
Limitations on Enrollment: Student must be at least 18 years old.
Course provides a basic understanding of the vocabulary and procedures for harvesting both at the vineyard and at the winery. Efficiency and safety issues are addressed. Management principles encountered in the day-to-day harvest operation. (Letter Grade or Pass/No Pass)