

Santa Rosa Junior College

Program Resource Planning Process

Agriculture 2019

1.1a Mission

The mission of the Santa Rosa Junior College Agriculture/Natural Resources Department is to increase the knowledge, improve the skills, and enhance the lives of those served by its programs, preparing leaders in agriculture, food systems, and natural resources who are equipped to address the diverse food, fiber and fuel needs of society. The department has diverse curriculum in Agribusiness, Animal Science, Brewing, Equine Science, Environmental Horticulture, Floral Design, Sustainable Agriculture, Natural Resources, Veterinary Technician, Viticulture, and Wine Studies.

1.1b Mission Alignment

The Santa Rosa Junior College Agriculture and Natural Resources Department's mission reflects the college's mission statement fundamental purpose. The Agriculture and Natural Resources department provides lower division academic education, prepares students for transfer to four-year institutions, provides current career education in eleven programs, and supports local economic development and job growth. The Ag/NR department has supported the environmental stewardship of Sonoma County and California through the Natural Resources, Sustainable Agriculture, and Environmental Horticulture programs.

1.1c Description

Curriculum

The SRJC Agriculture/Natural Resources Department teaches credit courses in Animal Science, Equine Science, Veterinary Technology, Viticulture, Agribusiness, Sustainable Agriculture, Wine Studies, Environmental Horticulture, Natural Resources, and Recreation Management.

The Ag/NR Department has continued with major curriculum work in each of its program areas to meet the California Community College Agriculture Core Course Model Programs. SRJC Agriculture & Natural Resources program coordinators and instructors meet annually with Community College, CSU, and UC instructors to collaborate on curriculum. These courses follow a statewide articulation numbering system with CC, CSU, and UC agriculture courses statewide. Many of these courses also satisfy General Education requirements and UC/CSU numbered status.

Facilities

Shone Farm

The Agriculture/Natural Resources Department's 365-acre self-sustaining Shone Farm, has been integral to the laboratory "learn by doing" philosophy of the instructional program of the department. Animal Science, Brewing, Equine Science, Sustainable Agriculture, Viticulture,

Wine Studies, and Natural Resources programs use the diverse farm entities extensively within their programs.

Computer Laboratory

The computer laboratory in room 2060 of Lark Hall is used primarily for Agribusiness courses and the Natural Resources course in GIS. The department budget has not been increased to support a fully functioning computer laboratory with upgraded computers and desks. More Ag/NR programs are now using computer classrooms elsewhere on campus due to the lack of computers, correct ergonomic desk setup, and adequate staffing.

Greenhouse/Nursery Compound

The greenhouse/nursery compound *on campus* has been in disrepair and neglect after 34+ years of operation. The unit still serves nearly 300 students yearly in a myriad of Environmental Horticulture, Agriculture, and Sustainable Agriculture classes, but has not had any significant capital improvements since the unit was built. Due to the dilapidated conditions of this unit, serious safety issues have arisen, including student trip and slip hazards, structural collapse and other hazards associated with a glass enclosed compound. The compound is ill suited for the commercial cultural practices associated with the nursery operations such as planting, thinning, transplanting, potting, and other operations. The unit is in need of equipment associated with the nursery operations as well as the landscaping operations conducted on campus.

The district has recently proposed the idea of moving the Agriculture Department, including Environmental Horticulture, to Shone Farm. This relocation would require construction of a new greenhouse, which is a more appropriate and feasible option than renovation or replacement of the existing greenhouse on campus. The Environmental Horticulture Advisory Committee will weigh-in on design of the new approximately 2,500 square foot greenhouse and ancillary facilities. A Strong Work Force grant proposal was recently submitted (May 2019) for \$300,000 to construct the greenhouse as well as an outdoor landscape construction lab area.

Pending construction of a new facility, the faculty have identified several smaller, yet critical projects that need completion, e.g. minimal upgrades to keep existing greenhouse working.

1.1d Hours of Office Operation and Service by Location

The Agriculture and Natural Resource Department is open Monday through Friday, from 8:30am-5:00pm. Ag/NR classes are taught on the Santa Rosa Campus, Petaluma Campus, and Shone Farm Campus, typically Monday through Thursday from 9:00am-9:00pm. The Ag/NR department is only able to staff one location. The Santa Rosa Campus is staffed by one full-time Administrative Assistant located in Lark Hall.

1.2 Program/Unit Context and Environmental Scan

AGRICULTURE BUSINESS MANAGEMENT

Agribusiness accounts for nearly one-fifth of the United States (U.S.) Gross National Product (GNP) and employs close to one-fourth of the labor force. This sector includes firms in the value chain system such processing, marketing, sales and distribution. In California, 53% of the total revenue in agriculture comes from the agribusiness industry (United States, Department of Agriculture, 2014). Agribusiness jobs account for 34 percent of the

workforce in the value chain in California. Over the next five years, the Agribusiness industry is expected to grow by at least 18 percent (distribution-14% and processing-4.4%) in Sonoma County. Additionally, the average salary for Agribusiness industry employees in Sonoma County is approximately \$51,000 per annum (Chancellors Office, California Community Colleges, 2014).

Although there has significant growth in the Agriculture Business sectors, the number of community college programs that train students in this major are not keeping up with the trend. In California, there are 591 agriculture programs at California Community Colleges, of which, only 37 (6.5%) offer certificates or degrees in agriculture business. As such, there is real need to increase enrollment in Agribusiness to meet industry needs. Graduates from Agribusiness programs are usually employed as loan officers, banker, lobbyists, sales/marketing managers, farm managers, distribution managers, personnel specialists, labor contractors and public relations specialists.

Most of the students enrolled in agribusiness courses intend to transfer to one of the following institutions: California State Polytechnic University, San Luis Obispo, California State University, Fresno, California State University, Chico, California State University Stanislaus, California State University, Sonoma and University of California, Davis. There are active articulation agreements between our program and the aforementioned institutions. In developing the new Associate Degree for Transfer (AST) in agribusiness, courses were designed and sequenced to ensure that students who complete the requirements for the AST would also meet the prerequisites to transfer as juniors to California State Universities. Although a larger number of students enrolled in agribusiness transfer to four-year institutions, there is a sizeable number of students that complete our certificate or degree programs to return to the workforce. In order to meet the needs of both pathways of students (career and transfer), courses have been designed to provide a wide range of skills that are required for both industry and four-year institutions. The structure and content of agribusiness courses will be continually updated to meet both industry needs and transfer requirements for four-year institutions.

ANIMAL SCIENCE

World food demand for food of animal origin will double in the next 25 years in order to feed an expected population of 9.1 billion. Trends in the animal science industry show an increase in vertical integration with a decrease in the number of producers, but larger sized operations; increased specialization to improve efficiency; increased geographic concentration. The above needs will need to be achieved while minimizing the costs to animals, environment and humans. While consolidation continues to be a trend in agriculture across the country, Sonoma County is home to many niche livestock production enterprises that offer opportunities to students locally. Animal agriculture products accounted for the top four out of the top five agricultural products in Sonoma County in 2017. While the dairy industry continues to struggle nationwide, market milk alone accounted for \$137 million of agricultural products in Sonoma County. The equestrian industry was valued at \$613 million in 2014 and contributes an estimated 7,700 jobs to the local economy. Current SRJC courses, certificates, and majors have been refined to meet both of these trends.

Employment trends show an average increase in the need of Animal Science graduates by 12.9%. Currently, 6.4% of all animal scientists have a professional degree, 23.5% have a doctoral degree, 21% have a master's degree, and 35% have a bachelor's degree. Effective Fall 2019, Santa Rosa Junior College students will be able to choose one of two tracks, either a certificate in Animal Science for students who wish to immediately enter the workforce or an Associate's Degree of Transfer which will guarantee admission into a four year university. Two California State Universities (Chico and Fresno), two California State Polytechnic Universities (San Luis Obispo and Pomona) and University of California, Davis have Animal Science programs. Equine Science is a program offered within Animal Science programs at most Fresno, San Luis Obispo, Pomona and Davis. In order to offer students a clear path to transfer, the equine science program has come under the animal science program. Equine classes will be offered as part of the Animal Science certificate. Work began in 2018 to insure transferability of Santa Rosa Junior College into these programs.

Animal Science associates degree students Santa Rosa Junior College are helping to produce the increased value of animal agriculture production in California; between 2000 and 2010 there was a boost of more than \$3.2 billion in total economic output from animal agriculture for the state. This growth increased household incomes by more than 17,000 jobs, according to a report funded by the United Soybean Board. At the national level, the study found that the rise in value of US animal agriculture production in the last decade resulted in more than \$22 billion in total economic output. This produced a nearly \$4 billion increase in household incomes and 128,700 jobs.

In 2010, the total economic impact of animal agriculture in California was more than \$19 billion, compared to \$289 billion nationally. The effect on household earnings was \$3.6 billion in the state and \$51 billion nationally. Animal agriculture contributed 101,178 California jobs and more than 1.8 million jobs to the US economy.

The average animal scientists has a starting salary of \$31,540. The average salary earned is \$53,230.

California community colleges that offer Animal Science programs include Modesto College, Merced College, College of the Sequoias, Reedley College, Shasta College, and Bakersfield College. California community colleges that offer Equine Science courses include Modesto College, Sierra College, College of the Sequoias, and Shasta College. Feather River College in Quincy offers a 2 year degree as well as a 4 year degree in Equine Science. There are no outside requirements for licensing/accrediting of Animal Science programs for SRJC or any other community college institutions

There has been minimal change in outside funding. Partnerships have been developed with community members for leasing of grazing animals as well as the use of horses for equine classes. Partnership with UC Cooperative Extension have increased the ability to offer programs such as grazing schools. A partnership with Gold Ridge Conservation District will also potentially fund renovations to pasture as well as increase the sustainability with Shone Farm.

ENVIRONMENTAL HORTICULTURE

In the last 3 years, the landscape and horticulture industries have benefitted from the strong economy and the local housing shortage. These factors have increased property values and resulted in a tight labor market. New and existing commercial and residential properties are increasingly worthy of significant investment in the landscape due to their higher property values, while workers have more opportunities and higher pay due to pent-up demand for their services. The rebuilding efforts in the aftermath of the 2017 fires only intensified this situation.

Continued interest and state and local legislation focused on improving the quality of the environment and increasing the number of sustainable landscape and construction projects have been another cause for increasing growth in the horticulture industry over the last decade.

Some examples of the legislative mechanisms that have increased demand for landscape and horticulture services include:

- California's Green Building Code (CALGreen) – requires storm water management
- Water-Efficient Landscaping Ordinance (WELO) – requires drought tolerant plant material, avoiding invasive species, determination and compliance with a site-specific water budget.
- California Public Resources Code §4291 – Requires defensible space and wildfire-resistant landscaping.

California's environmental horticulture industry leads the nation with 21.9% of total nursery production and 8.6% of lawn and garden retail sales. California represents over a quarter of U.S. wholesale nursery production and retail sales, creating a total of 192,065 California jobs. 74,940 jobs come from production, 76,225 jobs from lawn and garden retailing, and 40,900 result from indirect and induced effects. The total payroll exceeds \$5.58 billion, with \$2.52 billion from floral and nursery production and over \$3.05 billion from lawn and garden retailing. (Economic Impact Report, 2008-2009 next census: 2015-2016). Combined, nursery and floriculture are California's #4 agricultural commodity, producing 8.0% of the state's total agricultural output. Nursery products, flowers and foliage are produced in 55 of California's 58 counties. California leads the country in potted flowering plants, and is a dominate state in cut flower production as well as the production of bedding and garden plants. (California Agricultural Statistic Report 2013).

The strong economy and some of the factors mentioned above have made the current job market promising. EDD labor market information data projects a 9.6% increase in Landscaping and Groundskeeper Supervisor positions for 2016-2026 in California and a 9% increase in Sonoma County. For Landscape Groundskeepers and Workers, the projection is a 14% increase in California and a 14% increase in Sonoma County.

The employment outlook for the category of Farmworkers, Laborers, Crop and Nursery Workers in California is more modest with 4% project growth from 2016-2026. The 2018 Environmental Horticulture Industry Analysis confirmed the decreasing job market in the regional nursery industry. However, recent developments in micropropagation of plants for the nursery, hemp, cannabis, wine, and orchard crop industry have led to an increased demand for this skill. Our program is currently piloting micropropagation skills to integrate into existing classes.

Graduates who possess landscape construction & maintenance, landscape design, or nursery management skills are qualified to advance into supervisory and management positions within landscape contracting firms, design or landscape construction companies, municipal, state, county, and federal agencies, entrepreneurial landscape maintenance

enterprises, and other occupations that require the application of plant knowledge, drafting/design, irrigation design, and landscape construction skills.

There are multiple areas that offer interesting employment options and starting pay to students who are prepared by SRJC's Environmental Horticulture program, including:

Wholesale nursery propagator (\$15-40/hr.)	Landscape Estimator (\$50/hr.)
Wholesale nursery grower (\$10-25/hr.)	Foreperson (\$10-22/hr.)
Field Superintendent Manager (\$30-45/hr.)	Crew Leader (\$10-22/hr.)
Sales Manager (\$20-25/hr.)	Landscape Gardener (\$10-15/hr.)
Marketing Manager (\$20-30/hr.)	Salesperson (\$15-20/hr.)
Floral Designer (\$35-50/hr.)	Integrated Pest Management specialist (\$50-70/hr.)
Landscape Contractor (\$50-80/hr.)	Salesperson retail florist (\$20-35/hr.)
Landscape Designer (\$55-95/hr.)	Instructor (\$50-80/hr.)
Irrigation Designer (\$75/hr.)	Landscape Design Assistant (\$15-23/hr.)
Private Horticulture Consultant (\$50/hr.)	
Certified tree worker (\$25-40/hr.)	
Park Superintendent (\$35-50/hr.)	
Project Supervisor (\$20-30/hr.)	

The variation of salaries is dependent upon the level of education, type of employment, specific job tasks and skills. Experienced workers typically earn \$10-22 /hr. Management and supervisory positions have the greatest earning at \$3,500 to \$5,500 per month. Owners/operators of many landscape maintenance businesses earn between \$4,500-8,500 per month. Many residential landscape contractors earn between \$150,000 -500,000 per year, gross income.

Environmental Horticulture programs can be found at the following community colleges: Cabrillo College, Foothill College, Santa Barbara City College, Modesto Junior College, Diablo Valley College, Merritt College, Butte Community College, Shasta College, College of the Sequoias and Antelope Valley Community College.

Continued work to align SRJC's horticulture courses with the Course information descriptor (CID) curriculum is expanding the opportunities for transfer and articulation within the California Community College System as well as the CSU and UC systems.

EQUINE SCIENCE

Current estimates place 6.9 million horses in the United States involving 7.1 million Americans in diverse, sophisticated and high tech positions that annually employ 1.4 million full-time employees in all regions of the country. These people serve the industry, providing over \$2.5 billion in goods and services annually. This relates to a total impact of \$112.1 billion on the US Gross domestic product. In Sonoma County, the value of agricultural production and household horse-riding activities amount to 468 million dollars, almost one quarter of the value of Sonoma County farming. Horses are Sonoma County's #2 agricultural industry. Current production and market indicators suggest that the equine science industry will continue to experience growth. Areas for growth in the industry include breeding, training, and maintaining horses, operating tracks, show and recreational facilities as well as numerous ancillary activities. These include feed, tack, equipment, and real estate sales, legal services, art, photography and literature. Students who have earned a degree at Santa Rosa Junior College with a major in Equine Science are more than qualified for a wide variety of diverse careers in the equine industry.

California community colleges that offers Equine Science courses include Modesto College, Sierra College, College of the Sequoias, and Shasta College. These institutions, however, do not offer full certificates or majors in Equine Science, like SRJC. The only other California community college which offers a full degree in equine science is Feather River College in Quincy. This program offers a markedly different program than SRJC however, as it is geared towards competitive rodeo and backcountry horsemen. SRJC's program, in contrast, is a broad technical study of all phases of equine business and management practices, coupled with general studies to produce graduates that are well rounded individuals capable of entering all phases of the equine industry. Another thing that sets SRJC's Equine Science program apart from all other colleges in the nation, is our therapeutic riding program. Recognized as one of the most progressive forms of therapy, therapeutic riding offers students with disabilities the ability to control a horse as well as one's own body. The college offers courses for training in therapeutic riding, as well as courses for riders that work to increase balance, muscle control, strength, concentration, patience, responsibilities, and teamwork. Only one other community college in the nation has a therapeutic riding program.

With the exception of the therapeutic riding program being certified by the North American Handicapped Riding Association, there are no outside requirements for licensing/accrediting Equine Science at SRJC or these other institutions.

NATURAL RESOURCE MANAGEMENT

The demand for education in Natural Resources (NR) is high and sorely lacking at the community college level in Northern CA. NR graduates work in an ever-expanding breadth of jobs related to the conservation and management of natural resources in the US and beyond. Academics in the NR program include a cross section of disciplines that focus on long-term health, productivity, diversity and quality of NR. Students learn practices in conserving and enhancing water quality, soil productivity, biodiversity and recreational opportunities. From urban, private and industrial lands to conservation easements and wilderness areas, NR practitioners are needed to guide the use and sustainability of our nation's natural resources.

There is a growing need for educational institutions to support, and facilitate, natural resource education for entry level and high level management positions. Currently,

acceleration and an expansion of knowledge of the Natural Resource field is needed in the area of project based learning and student exposure to partnerships and cooperation and coordination with natural resource professionals including the U. S. Forest Service, other public and private researchers, and private NGO conservation organizations

The practical lab activities, included in the NR program at SRJC, compliment academic coursework and move students directly into transfer colleges and/or technical career positions. The program is aligned with newly updated curriculum including data collection and analysis and the hands-on implementation of natural resource practices.

Recent Program Review successes allow for students to receive their AS in Natural Resources from SRJC with courses articulating with CSU programs for transfer students.

Articulation is established with four year institutions for transfer for a series of NR courses including: NRM 72, 60, 12, 51, 87, and 88. In addition, the Certificate in Natural Resources is designed for students interested in technician level employment or for those students interested in a career change. All changes represent NR Advisory Committee recommendations that mirror industry needs/demands.

Specific student learning opportunities/trends for the NR program include:

- Land management practices that show effective restoration techniques in sequestering CO2 and slowing climate change.
- Education in Sudden Oak Death (SOD) management
- Fire fuel reduction
- GIS/GPS mapping
- Enhancement and promotion of ecological corridors in and around our ag areas.
- Renewable energy technologies
- Demonstration areas for rainwater catchment, bioswale construction, etc.
- Assessment of economic, social and environmental values currently provided by forests, (ie: carbon capture/banking, water capture, etc.)

Jobs available to natural resource graduates is diverse and in a wide range of settings. The U.S. Bureau of Labor Statistics lists some of the tasks handled by these professionals as: Monitoring watershed, finding ways to preserve water supplies, writing policies for managing natural resources, consulting with companies to help them become more environmentally responsible, working with government entities to enforce regulations and write environmental documents.

The U.S. Bureau of Labor Statistics predicts the field of natural resources to grow at a much faster than average pace over the next few years. Example of anticipated career changes for natural resources include: Forestry Technicians: Expected growth of 9% over 2018-25 as more jobs are created by recent State and Federal legislation designed to prevent destructive wildfires by thinning the forests and by setting controlled burns in dry regions susceptible to forest fires. Parks and Recreation: Employment of recreation workers is projected to increase by 15 percent between 2018 and 2025. This growth is being driven by an increased interest in open space recreation and population increase and increased interest in the out of doors for recreational opportunities.

Partnerships or cooperative ventures existing with local employers include: Sonoma County Agricultural and Open Space District, Sonoma Land Trust, Sonoma County Regional Parks, U.S. Army Corps of Engineers, State Parks, National Park Service and CA Department of Fish and Wildlife to name a few.

SUSTAINABLE AGRICULTURE

Now that organic food has a nationally recognized production standard and is overseen by the United States Department of Agriculture, organic food has become legitimized in America as sales steadily climb. The number of certified organic farms and processing facilities in the United States increased nearly 3 percent from the end of 2010 to the end of 2011, with California still leading the nation with the most organic operations, according to the U.S. Department of Agriculture. USDA database shows a total of 17,673 U.S. farms and processing facilities were certified to the standards of the National Organic Program as of the end of 2011. That's 478 more operators than the end of 2010. The current total is also a 240 percent increase since the program started tracking that information in 2002. The database shows California has 3,853 certified organic operations. That's compared to 2,714 organic farms in 2008, although that number comes from the USDA Census of Agriculture and includes farms that are certified and exempt. U.S. Deputy Secretary of Agriculture Kathleen Merrigan said USDA has been working to increase the number of certified organic operations in the nation by 20 percent by 2015. Starting from the 2009 baseline of 16,564 operations, she said the goal is to hit a total of 20,655 certified operations in another three years.

With such a rapidly growing market in Sustainable Agriculture, there are multiple areas that offer interesting employment options to students who are prepared in SRJC's Sustainable Agriculture program. Employment opportunities upon completion of the SRJC Sustainable Agriculture program may include:

- Farm owner
- Niche grower of specialty produce, flowers, herbs, fruits and nuts
- Farm or garden manager - field or office
- Farming / Gardening consultant - private or company employee
- Seasonal Farm intern / apprentice (plant, irrigate, weed, harvest)
- Farmer's Market manager / assistant and/or vendor
- Retail/Wholesale nursery production (greenhouse/sales)
- Farm Advisor and/or research assistant with County Ag Commissioner, Cooperative Extension or United States Department of Agriculture
- School Garden coordinator
- Compost production and sales
- Organic support/sales and services (fertilizers, seed, equipment, etc...)
- Sustainable livestock production / Range or ranch manager
- Chef/ restaurateur
- Pest control advisor
- Public garden / botanical garden employee
- Farm/Garden estate caretaker
- Agriculture teacher / public speaker/ company representative
- Value-added product creator (i.e. wreaths, jams, brewer, tincture, oils, etc...)
- Nursery grower/worker for container vegetables, herbs, bare-root fruit trees

Santa Rosa Junior College is the only community college in California that offers an A.S. degree and two certificates in Sustainable Agriculture. Some of the curriculum is aligned with lower division Sustainable Agriculture major preparation at UC Davis, UC Santa Cruz, Cal Poly, and other universities.

Licensing/accrediting agencies related to Sustainable Agriculture programs are optional. Certifications can be obtained if desired in CCOF, Sustainably Farmed, Humane Farmed, Biodynamically Farmed, etc.

There has been a substantial increase in grant funding. One grant acquired by the Sustainable Agriculture program for 2010-2011 was a Felton Foundation Grant for \$25,000. Additionally, a USDA Farmers Market Promotion Program grant was awarded in 2011 in the amount of \$67,719 over 2 years, aimed at promoting Shone Farm products. Additionally, the Ag Department, the SRJC Small Business Development Center and the Latino Service Providers collaborated with the University of California Cooperative Extension (the lead agency) on a \$750,000 grant aimed at training beginning future ranchers and farmers. The USDA Beginning Farmers and Ranchers grant will run for 9 months starting March 2012. The final grant awarded in the Sustainable Agriculture program came from the CCC Chancellor's Office. This \$47,000 Collaborative Sustainable Agriculture Grant is aimed at providing elementary school children exposure to sustainable agriculture. Funding will be used to provide visits to Shone Farm and a 2 week long intensive summer academy.

VETERINARY TECHNICIAN

The demand for Registered Veterinary Technicians is nothing short of extreme. There are far fewer RVTs in Sonoma County than are required by the labor market. The California 2010 EDD data shows an acceleration of need for RVTs. In 2010 there were 120 RVTs and an anticipated need of 200 by 2020. This 66.7% growth is once again the strongest for any county in California. In addition there are the estimated 250 Veterinary Assistant positions in our county. State estimates for the 2010-2020 time frame include an anticipated 31% growth in technician positions (2,600 new jobs). According to the California Veterinary Medical Board there are 138 Registered Veterinary Technicians residing in the Sonoma County as of January 2012 to fill an estimated 240 positions. EDD labor market data are consistent with the number of workplace facilities (94 current premise permits) and veterinarians (231 valid licenses) in Sonoma County. According to the US Bureau of Labor Statistics the job prospects for Veterinary Technicians is "excellent". The 2010 data update has an increased anticipated growth of 52% or over 40,000 new jobs and 50,000 openings over the next 10 years... As of 2010 Veterinary Technicians are now listed under "Healthcare Professions" by BLS rather than Professional, Scientific, and Technical Services. The job prospects are still excellent, but the category change means they are no longer at the top of their list.

Santa Rosa Junior College is the predominant source for RVTs. Over the last three years 84% (26/31) of new RVT licenses in Sonoma County were earned by SRJC students.

Over the last few years Dr. Famini has developed a google group for employment and other announcements. Over 300 current and former SRJC students are members and hospitals now routinely email job announcements to Dr. Famini in preference to Craigslist or other sources. Taking into account the usual sources (craigslist, etc.) and the google group listings there are over 300 jobs/year for veterinary support staff in the Sonoma/Marin county area.

The closest community colleges that offer a Veterinary Technician program are Consumnes River College in Sacramento (~2 hour drive) and Foothill College in Los Altos Hills (1hr 45 minute drive). There are also branches of the private school Western Career College in Pleasant Hill and San Leandro (about 1hr 15 minute drive). However, current Western Career College tuition is about \$35,000 for the two-year program. All of the above programs

are distinct from SRJC in that they are AVMA approved full time programs that include far more extensive hands-on component, maintain colonies of canine and feline patients, etc.

Recent articles mentioning the strong job market for Registered Veterinary Technicians include:

“Eight secure jobs worth landing this spring and beyond” on Fox Business News posted 3/27/2013.

“Animals Need Health Care Too” in Community College Week from 2/22/2010.

“Vet Techs in Demand” in the Press Democrat on 8/23/2009. This was a reprint of a New York Times Article.

Veterinary Technicians were listed as Number 2 in “150 Best Recession-Proof Jobs” by Laurence Shatkin, Jist Publishing, November 2008.

The critical demand for Registered Veterinary Technicians locally, statewide, and nationally continues to fuel strong student enrollment in courses. Additionally, there is an overall trend towards larger specialty hospitals and corporate ownership of hospitals (Veterinary Centers of America and Banfield). The larger and corporate hospitals tend to better utilize Registered Veterinary Technicians. This is due to both to a need for more technically advanced veterinary assistants as well as the fact that RVTs are a cheaper alternative to perform many of the tasks reserved for veterinarians in smaller hospitals. This includes a greater role in client communication, veterinary dentistry, vaccine appointments, etc. Larger and corporate practices are also less likely to allow unregistered assistants to perform tasks legally reserved for RVTs such as inducing anesthesia and placing splints.

The SRJC Veterinary Technician Program fulfills the state Veterinary Medical Board requirements for students to sit for the state Registered Veterinary Technician board exam through the alternate route. There are three routes to be eligible to sit for licensure. 1) Attend a full time American Veterinary Medical Association 2-year program (the closest program is ~100 miles from Santa Rosa) 2) Already have an equivalent license from another state and have a minimum number of clinical experience or 3) the Alternative Route. The alternative route consists of two basic requirements: Academic requirements and Clinical experience requirements. The Academic requirements consist of many specific areas of instruction within 20 semester units. The SRJC fulfills this requirement. The Clinical experience required is 4416 hours under the supervision of a veterinarian and includes a list of specific job tasks that must be completed. The SRJC program includes the Academic component only and it is up to the student to meet the clinical requirement.

The Veterinary Technician Program offers an annual seminar on the admissions requirements and pathways to Veterinary School. This is followed by a unique tour of the UC Davis School of Veterinary Medicine which includes touring the Anatomy Lab, Surgery Lab, the teaching Hospital, meeting the admissions staff and sitting in on a few veterinary school lectures. We are the only community college in the state offering this opportunity.

Several partnerships have been developed over the last few years.

- The Small Animal Emergency Medicine class is now offered every odd Spring Semester. This class is held at Animal Care Center, the largest veterinary emergency center in the county. This class included over a dozen guest speakers from both Animal Care Center

and PetCare emergency veterinary hospitals. It has become the most popular elective in the program.

- In order to provide hands-on class activities with live animals the program now partners with several local rescue groups: Bergin University for Canine Studies (formerly Assistance Dog Institute), Pets As Loving Support therapy dogs, cats from two local non-profit rescue groups, and Reading Therapy Dogs from another group. Animals from Sonoma County Reptile Rescue are also used in a single class per semester.
- Through cooperation with Paws Are Loving Support and the Humane Society of Sonoma County we have put on a free vaccine clinic for the pets of AIDS patients. This is the capstone experience of the Small Animal Nursing (AnHlt120) course. This is a win/win/win situation where the SRJC students gain valuable experience, PALS and their pets get preventative medical care, and the Humane Society is provided with a labor force to make this event possible.
- Cooperation with the shelters in the county continues with students volunteering or working in 5 different animal shelters including the continued intern program at Sonoma County Animal Care and Control helping this municipal shelter and giving students hands on experience in a variety of capacities including animal intake, spay/neuter clinic support, etc.
- Since fall 2010, the SRJC program offers a job shadowing rotation where students are invited to observe and participate in a variety of different veterinary clinical settings. This semester long weekly rotation has exposed 12 to 15 students per semester to hospitals including: Eye Care Center for Animals, Humane Society of Sonoma County, Large Animal Hospital of Cotati, Memorial Beach Animal Hospital, Montecito Animal Hospital, PetCare, VCA Animal Care Center, VCA Forestville, and Bradner Veterinary Hospital among others.

There has been minimal change in outside funding. The Redwood Empire Veterinary Medical Association has pledged to contribute \$500 year to fund an annual scholarship that would allow a Veterinary Technician student to sit for their Board Exams. Additionally, the Association now holds their annual Continuing Education event for veterinarians at the SRJC Shone Farm. For the 2010-2011 year, Dr. Famini received \$21,410 in CTEA funding and \$7,000 in 2012-13 for Vet Tech instructional equipment.

Historically no local venue existed for working RVTs to communicate or gain a perspective of their profession outside the walls of their own clinic. Additionally, as of July 2011 there is mandatory CE requirement for RVTs. To remedy these two problems Dr. Dan Famini founded the Redwood Empire Veterinary Technician Association. Since July 2011 this organization has held monthly CE and networking meetings with 50-80 attending RVTs and veterinary support staff. Now there are 11 person Executive Board consisting of 10 RVTs and Dr. Famini, with an all RVT officer team taking this project forward.

VITICULTURE

Winegrape production in Sonoma County totaled over \$578 million in 2017. This reflects an increase over the 2016 and 2015 figures. Winegrapes are by far the number one agricultural crop produced in the County. The number two crop is market milk, valued at just over \$137 million in 2017, and the number three crop is livestock and poultry, valued at just over \$47 million in 2017. The latest statistics from the Sonoma County Winegrowers state there are approximately 60,000 planted acres of winegrapes in the County, comprising

~ 40,000 acres of red cultivars, and 20,000 acres of white cultivars. There are approximately 1,800 grape growers in Sonoma County. Producing qualified graduates to work in Sonoma County's number one agricultural industry is the primary focus of the SRJC Viticulture Program.

Shone Farm Vineyard, the teaching laboratory for the Viticulture Program, is a 90 acre commercial vineyard, comprised of Pinot noir, Chardonnay, Sauvignon blanc and Syrah. All the winegrape acreage is certified sustainable, and 8.5 acres are certified organic. These certifications, needing to be renewed on a yearly basis, provide great opportunities for the Viticulture students to learn sustainable and organic farming practices, both new and tried-and-true. The students also learn the business aspect of farming winegrapes; e.g., costs and contracts. The fruit from Shone Farm Vineyard is sold to high-end Sonoma County wineries, for example, Francis Ford Coppola, Sonoma-Cutrer, Hanna, La Crema, Rodney Strong and Shone Farm Winery. When older vineyard blocks are pulled and new acreage planted, the Viticulture students are able to follow the operations and practices in order to learn how this is done efficiently and in compliance with County regulations.

The Viticulture Advisory Committee is comprised of 15 Sonoma County winegrape industry leaders. This group provides insight and recommendations for keeping the Viticulture Program vital and relevant. The group meets three times a year to discuss Shone Farm Vineyard and Viticulture Program curriculum. Sonoma County vineyard management companies, growers and wineries provide excellent resources to the students as guest speakers, field trip destinations, internships and eventual employment. One of the strengths of the Viticulture Program is its alliance and strong relationship with the Sonoma County winegrape industry.

Another newer certificate overseen by the Viticulture Program is the Pest Control Advisor (PCA) Preparedness certificate. Students earning this certificate qualify to take the PCA exam offered by the California State Department of Pesticide Regulation (DPR). Previously only available to students graduating from a four-year university, SRJC PCA Preparedness students meet the criteria to take the DPR PCA exam by working in vineyards and/or farm supply companies while earning their certificate. All the advantages that Shone Farm has to offer the Viticulture students are extended to the PCA Preparedness students. Some students earn both certificates to broaden their skill set and hire-ability.

The Viticulture Program at SRJC is stalwartly supported by the local winegrape industry. Because of this strong support, the Viticulture and PCA Preparedness students are also reliably and firmly supported as well.

WINE STUDIES

The Wine Studies program has four emphases: Wine Evaluation & Service, Wine Business & Marketing, Enology, and Wines & Vines. The program prepares students for a variety of positions in the wine industry, such as: grower relations manager, viticulture wine quality specialist, winery laboratory assistants, cellar masters, assistant winemakers, winery education directors, wine quality control specialists, sensory evaluation personnel, wine

sales specialist, wine club administrator, sales manager, public relations and marketing coordinator, and wine merchandiser.

In 2012, the Wine Institute reported a record 5.6 percent increase in cases of California wine sold in the U.S., compared to the previous year. The estimated retail value of the shipments totaled nearly \$20 billion, according to figures that institute released. During the same period, U.S. wine exports – 90 percent of which came from California – reached a new record of \$1.39 billion in winery revenues in 2011, an increase of 21.7 percent compared to 2010. 120,000 new wine labels were approved last year by the U.S. Tax and Trade Bureau.

Total wine sales in the U.S. from all production sources – California, other U.S. states and foreign countries – climbed to a new record of 347 million cases, a 5.3 percent jump from 2010, with an estimated retail value of \$32.5 billion, John Fredrickson of Gomberg Fredrickson & Associates reported, marking the 18th consecutive year of volume growth in the U.S. California's nearly 212 million cases held a 61 percent share of the U.S. market.

Numerous SRJC Wine Studies courses are articulate with UC/CSU viticulture and enology programs.

Napa Valley College, Allan Hancock College, and Las Positas provide degrees, or certificates in the same discipline. Additionally it should be noted that there are a number of private Wine Studies programs.

There are no requirements of licensing/accrediting agencies related to wine studies. There are future plans to create some wine sommelier accredited licensing certificates.

Efforts are underway to expand opportunities for students to become involved in the Shone Farm Winery, assisting the winemaker with all aspects of the operation, from production to marketing and distribution.

2.1a Budget Needs

The Ag/NR budget is distributed to the eleven different programs and the main expenses are instructional supplies, staffing through student workers, and field trips. Instructional supplies are used in both laboratory and lecture courses. Examples include: syringes and fluids used to teach medication administration in AnHlt120 Small Animal Nursing, disinfection supplies used for appropriate cleaning between a veterinary and wine class, etc. As a result the instructional practices are restricted to inherently less successful choices such as talking about how do perform a task or watching a video instead of actually having a student learn by doing.

The primary purpose and motivation for CTE programs is the direct work place relevance. The best way to illustrate concepts is to see them functioning in the real world and discussing them with working professionals. This requires traveling to various work sites (farms, nurseries, veterinary hospitals, parks, etc.). While the entrance fees is passed on to students in the form of student fees, the costs of traveling to sites prohibits many opportunities to learn in the field.

Allocation of funds to provide for more field trips would greatly enhance the learning experience of classes in all 11 of the Ag/NR programs.

The Ag/NR department is requesting \$2,000 in additional funding in order to support the new Brewing program which will began in fall 2017 with no additional funding provided. There are four Brewing courses that are scheduled on a yearly basis. All Brewing classes will require supplies to be purchased for students to complete the Student Learning Outcomes and Objectives outlined in each course.

2.1b Budget Requests

Rank	Location	SP	M	Amount	Brief Rationale
0001	Shone Farm	02	01	\$2,000.00	New Brewing program needs funds to support program with supplies and field trips.
0002	Santa Rosa	02	01	\$5,000.00	Increase student worker money to help growing needs in the department and various programs.
0003	Santa Rosa	02	01	\$25,000.00	Increase in instructional supply budget to have adequate supplies for teaching.
0004	Santa Rosa	02	01	\$5,000.00	Funding augmentation is needed for student field trips. Increased number of field trips for students to illustrate concepts is to see them functioning in the real world
0005	Santa Rosa	02	01	\$1,000.00	Increase in instructional supply budget to reflect increase in lab costs for soils and plant labs.
0006	Santa Rosa	02	01	\$1,000.00	Increase in instructional supply budget to reflect increase in lab costs for wine lab classes.
0007	Santa Rosa	02	01	\$1,000.00	Increase in instructional supply budget to reflect increase in plant costs for Horticulture.

2.2a Current Classified Positions

Position	Hr/Wk	Mo/Yr	Job Duties
Administrative Assistant II	40.00	12.00	Ag/NR office management, monitor department and program budgets, process invoices, creates BPOs, update website, enters and tracks curriculum, coordinates advisory committee meetings, composes meeting minutes, creates marketing materials for programs, coordinates department academic schedule.
Coordinator, Science Labs	20.00	11.00	Coordinates labs for Wine Studies, Environmental Horticulture, Natural Resources, Animal Science, Veterinary Technician, General Agriculture, and Sustainable Agriculture.
Science Lab Instructional Assistant	40.00	12.00	Provides support for several programs within the department with a focus on Horticulture; supports and maintains Ag/NR teaching labs and instructional facilities, including a greenhouse and outdoor nursery.

2.2b Current Management/Confidential Positions

Position	Hr/Wk	Mo/Yr	Job Duties
Department Chair (80% release)	32.00	10.00	Chair AG/NR Department duties: scheduling, budget, coordination of faculty, staff, outreach, & administration. Based upon the Department Chair release formula, this position receives 78% release time. Each semester the chair farms out 5% of department chair load to each of the 6 program coordinators in the department. Thus the chair retains only 48% of the load.
Dean, Agriculture/Natural Resources	40.00	12.00	Supervising administrator for the Ag/Natural Resources Department, including Shone Farm. Fall of 2012 this position was filled by Ganesan Srinivasan. In Spring 2013, Dr. Ganesan was also

			given the responsibility of the Culinary Department to complete the Farm to Fork Concept.
--	--	--	---

2.2c Current STNC/Student Worker Positions

Position	Hr/Wk	Mo/Yr	Job Duties
Horticulture Student Worker	25.00	12.00	Greenhouse propagation and production of crops for lab.

2.2d Adequacy and Effectiveness of Staffing

The Ag/NR department and Shone Farm does not have adequate classified staff or student workers to support the needs of 11 different programs within the department. There is a critical need for more permanent classified staffing, particular laboratory assistance and staff to support Shone Farm instruction. A unique aspect of the Agriculture/Natural Resources Department is the need to continually care for the living animals and plants that are part of student learning labs.

Staffing Requests

1. Coordinator, Science Lab (Current: 50%; Request: 100% 10 month) (Instructional program-Santa Rosa)

The current Coordinator, Science Lab has been staffed at 50% for the last several years. Over that time period there has been the addition of entire additional programs (Veterinary Technician and the current format of Wine Studies) a significant increase in total student enrollment, total courses, diversity of course offerings. Additionally the department has been expanding to offer more classes on the Petaluma Campus. The lab needs for these classes are being met by having this same part time person preparing materials for the instructor to take with them. This arrangement provides access to our courses to a new student population, but requires greater/less time efficient prep on the part of our Lab Coordinator. Furthermore there is an inherent lack of efficiency with a part time program requiring support at specific, rigid timing dictated by the class schedule. There is a critical need to increase this position to 100%.

2. Hort Tech/Greenhouse Faculty Technician (Current: no position; Request: 100%) (Environmental Hort program-Santa Rosa)

For the college to maintain the standards and reputation of the Environmental Horticulture program, a 100% District funded Hort Tech/Greenhouse Facility Technician is needed. Currently, these tasks are performed by part-time student workers and an occasional student volunteer. Plants are sold in the SRJC bookstore as well as at the monthly plant sales (see recent plant sale survey). The current Horticulture instructor's time is being taxed with supervision of these part-time temporary employees (and volunteers). Responsibilities of this position would include: maintaining the growing areas, greenhouse, and nursery; assisting students and faculty with class projects; equipment maintenance, coordination and implementation of monthly plant sales (10 mos/year), Bookstore sales, Petaluma campus sales, school tours, coordination of facility maintenance and record keeping.

3. Science Lab Instructional Assistant (Animal/Equine) (Current: no position)

4. Science Lab Instructional Assistant (Forestry) (Current: no position)

The Natural Resources program, and Shone Farm manager, needs a staff person to maintain and sustain a healthy and sustainable forest ecosystem. Maintenance and management projects needed include: fuel reduction, trail and bridge building, restoration, reforestation, exotic/invasive species removal and log milling for Shone products, to name a few. The forest can be used successfully as an instructional lab, demonstrating proper forest management techniques, for NRM and Parks and Rec students, once key projects are underway.

5. Science Lab Instructional Assistant (Vet Tech) (Current: no position)

6. Science Lab Instructional Assistant (Wine Studies/Beer) (Current: no position)

7. Seasonal Profession Expert

2.2e Classified, STNC, Management Staffing Requests

Rank	Location	SP	M	Current Title	Proposed Title	Type
0001	ALL	02	01	Coordinator, Science Lab (50%)	Coordinator, Science Lab (100%)	Classified
0002	Shone Farm	02	01		Science Lab Instructional Asst (Ag/NR,SUSAG)	Classified
0003	Shone Farm	02	01		Science Lab Instructional Asst (ANSCI/EQSCI)	Classified
0004	Shone Farm	02	01		Science Lab Instructional Asst (Forestry)	Classified
0006	Petaluma	02	01		Science Lab Instructional Asst (Vet Tech)	Classified
0007	Shone Farm	02	01		Science Lab Instructional Asst (Beer/Wine)	Classified
0008	Shone Farm	02	01		Seasonal professional expert (hogs,cattle,poultry)	Unknown

2.3a Current Contract Faculty Positions

Position	Description
Viticulture Instructor/Program Coord.(Dept Chair)	The full-time instructor has program coordination duties with disciplinary expertise in Viticulture. Coordinates closely with advisory committees and industry associations. Involved with program and outreach responsibilities. Supervises adjunct instructors and coordinates faculty and equipment needs for the Viticulture programs. Additionally, works with Shone Farm vineyard management personnel to coordinate the farming and development of a 70 acre (and growing) vineyard.
Agribusiness Instructor/Program Coordinator	New hire fall 2013, thus probationary tenure track faculty. The full-time instructor has program coordination duties with disciplinary expertise in agribusiness. Involved with program and outreach responsibilities. Supervises adjunct instructors and coordinates faculty and equipment needs for the agribusiness program. Additionally has a computer lab to coordinate in order to effectively serve student needs.
Natural Resources Instructor/Program Coordinator	The full-time instructor has program coordination duties with disciplinary expertise in Natural Resources Management. Coordinates closely with Advisory Committee and industry associations. Involved with program and outreach responsibilities. Supervises adjunct instructors and coordinate faculty and equipment needs for the natural resource programs. Additionally works with the Shone Farm Manager to oversee 120 acres of forest, an outdoor student lab.
Veterinary Tech Instructor/Program Coordinator	The full-time instructor has program coordination duties with disciplinary expertise in Animal Health. Coordinates closely with Advisory Committees and industry associations. Maintains currency with state regulatory agencies. Involved with program and outreach responsibilities. Supervises adjunct instructors and coordinates faculty and equipment needs for the animal health programs. Working to acquire equipment and facilities to more effectively serve their student needs.
Wine Studies Instructor/Program Coordinator	The full-time instructor has program coordination duties with disciplinary expertise in Wine Studies. Coordinates closely with Advisory Committees and industry associations. Maintains currency with state regulatory agencies. Involved with program and outreach responsibilities. Supervises adjunct instructors and coordinates faculty and equipment needs for the Wine Studies programs. Working to acquire equipment and facilities to more effectively serve their student needs.
Gen. Ag./ Sustainable Ag./ Program Coordinator	The full-time instructor has program coordination duties with disciplinary expertise in Agriculture/Sustainable Agriculture. Coordinates closely with Advisory Committees

	and industry associations. Maintains currency with state regulatory agencies. Involved with program and outreach responsibilities. Supervises adjunct instructors and coordinates faculty and equipment needs for the Agriculture/Sustainable Agriculture programs. Additionally works with the Shone Farm Manager to oversee an outdoor student lab.
Animal Science/Program Coordinator	New hire Fall 2016, thus probationary tenure track faculty. The full-time instructor has program coordination duties with disciplinary expertise in Agriculture/Animal Science. Coordinates closely with Advisory Committees and industry associates. Maintains currency with state regulatory agencies. Involved with program and outreach responsibilities. Supervises adjunct instructors and coordinates faculty and equipment needs for the Agriculture/Animal Science program. Additionally, works with the Shone Farm Manager to oversee an outdoor student lab.
Environmental Horticulture/Program Coordinator	New hire Fall 2016, thus probationary tenure track faculty. The full-time instructor has program coordination duties with disciplinary expertise in Agriculture/Environmental Horticulture. Coordinates closely with Advisory Committees and industry associates. Maintains currency with state regulatory agencies. Involved with program and outreach responsibilities. Supervises adjunct instructors and coordinates faculty and equipment needs for the Agriculture/Environmental Horticulture program. Additionally, manages the SRJC Campus greenhouse.

2.3b Full-Time and Part-Time Ratios

Discipline	FTEF Reg	% Reg Load	FTEF Adj	% Adj Load	Description
Agriculture Business SR	0.6700	70.0000	0.0000	28.0000	
Agriculture Mechanics SR	0.0000	0.0000	0.2200	100.0000	Ag/NR only teaches one AGMEC course (AGMEC 50).
Agriculture SR	0.5300	98.0000	0.0000	0.0000	
Animal Health SR	0.7000	36.0000	1.2100	64.0000	There are five adjuncts in ANHLT.
Animal Science SR	0.7000	100.0000	0.0000	0.0000	
Environmental Horticulture SR	0.8400	71.0000	0.3100	28.0000	
Equine Science SR	0.2700	32.0000	0.5400	66.0000	
Floral Design	0.0000	0.0000	0.8500	98.0000	Adjunct is serving as the part-time coordinator.
Natural Resources SR	0.7100	58.0000	0.5100	42.0000	
Sustainable Agriculture SR	0.3700	66.0000	0.1800	32.0000	
Viticulture SR	0.8700	99.0000	0.0000	0.0000	There are two adjunct faculty in VIT program. .
Wine Studies SR	0.6700	42.0000	0.7000	58.0000	There are ten adjunct in the WINE program. .

2.3c Faculty Within Retirement Range

One full-time faculty member's retirement is anticipated within the next three years.

2.3d Analysis of Faculty Staffing Needs and Rationale to Support Requests

Faculty Recruitment:

The Ag/NR department has many programs; some are extremely difficult to recruit for due to the specialty expertise required. Prior to the district wide course reductions, the department interviewed individuals for the adjunct pool on a yearly basis and more often if needed. Those disciplines, which require extensive specialty expertise, may only draw a handful of applicants to the pool. The Ag/NR department interviewed 6 out of 9 disciplines for the adjunct pool.

Full Time Equivalent Faculty

The Ag/Natural Resources department is fully staffed. There are 11 programs: 8 full-time instructional faculty who also manage their respective programs and three part-time adjunct faculty who manage equine science, floral design and brewing. Prior to 2008, course offerings grew considerably with broad diversity of classes and excellent enrollment efficiencies. Given the economic downturn and the turnover of full-time faculty, a drop in enrollment resulted. It is expected that Department growth and program success will once again be realized as we move forward with the new, energized faculty that have been hired within the past couple of years.

Adjunct Faculty

The Ag/NR department has 55 current adjunct faculty members. The majority of Ag/NR classes are extremely specialized resulting in only one or two adjuncts who are able to teach the course.

Faculty Staffing Priorities

Wine/Beer Marketing and Hospitality Faculty:

- The wine industry contributes \$13 Billion in economic activity to Sonoma County
- Increasingly, the industry needs employees with basic vocational training in marketing and hospitality
 - A one- or two-year program at SRJC is ideal for the extent of training needed
- The SRJC Wine Studies program coordinator is an expert in production and wine science, not marketing and hospitality
- The program needs a dedicated marketing, hospitality, and business expert to:
 - meet industry demand for well-trained employees
 - integrate with the business program at Sonoma State University
 - anticipate trends and adjust program offerings accordingly

Natural Resources Faculty:

The anticipated retirement of the current full-time faculty/program coordinator necessitates prioritizing future staffing needs. Industry demand, student interest and transfer program articulation indicate a growing demand for discipline expertise in this fields.

2.3e Faculty Staffing Requests

Rank	Location	SP	M	Discipline	SLO Assessment Rationale
0001	ALL	02	01	General Agriculture/Agriculture Education	This person will routinely assess SLOs in any courses they are assigned.
0002	ALL	02	01	Natural Resources	This person will routinely assess SLOs in any courses they are assigned.
0003	ALL	02	01	Marketing and Hospitality Management (Wine/Beer)	This person will routinely assess SLOs in any courses they are assigned.
0004	ALL	02	01	Agriculture/Biosystems/Engineering	This person will routinely assess SLOs in any courses they are assigned.
0005	ALL	02	01	Vet Tech	This person will routinely assess SLOs in any courses they are assigned.
0006	Shone Farm	02	01	Brewing	This person will routinely assess SLOs in any courses they are assigned.

2.4b Rationale for Instructional and Non-Instructional Equipment, Technology, and Software

There are 11 different programs offering 17 certificates and 17 associate degrees in the Ag/NR Department. All the instructional programs in the Ag/Natural Resources Department are heavily dependant upon equipment and farm machinery which tend to be very costly. The equipment needs are diverse, ranging from wine lab equipment used in the Wine Studies program to machinery needed for large crop production by students in the Sustainable Agriculture program. Students must learn using state-of-the art tools and machinery similar to equipment used in the Agriculture/Natural Resources industry. Accordingly, there is a need to continually replace and acquire new equipment whether it is used in the classroom or at Shone Farm. The lengthy Instructional Equipment Request list, outlined in 2.4c, is illustrative of the equipment intensive programs in the Ag/Natural Resources Department. The rationale for all equipment requests is that existing equipment is worn out, out of date, or inadequate. Everything requested is necessary to continue to the Ag/NR Instructional programs at the caliber expected.

2.4c Instructional Equipment Requests

Rank	Location	SP	M	Item Description	Qty	Cost Each	Total Cost	Requestor	Room/Space	Contact
0001	Santa Rosa	02	01	Tissue Culture lab equipment	1	\$50,000.00	\$50,000.00	HORT	Lark	Joel Grogan
0002	Santa Rosa	02	01	Lab Equipment	1	\$15,000.00	\$15,000.00	ANSCI	Shone	Amy Housman
0003	Shone Farm	02	01	Champion 25 Ton Log Splitter	1	\$1,700.00	\$1,700.00	NRM		Kasey Wade
0004	Shone Farm	02	01	Student Success lab group workstation equip	3	\$10,000.00	\$30,000.00	AG/NR	Shone	
0005	Shone Farm	02	01	Temp control specimen storage	5	\$2,000.00	\$10,000.00	AG/NR	Shone	
0006	Santa Rosa	02	01	Greenhouse lab furnishing/equipment	1	\$15,000.00	\$15,000.00	HORT	Shone Hort Lab	Joel Grogan
0007	Santa Rosa	02	01	Outdoor Nursery lab Furnishing/equipment	1	\$2,500.00	\$2,500.00	HORT	Shone Hort Lab	Joel Grogan
0008	Santa Rosa	02	01	Tissue Culture lab furnishing	1	\$35,000.00	\$35,000.00	HORT	Shone Hort Lab	Joel Grogan
0010	Shone Farm	02	01	Cellar Automation: Water Use Flow Meters	3	\$550.00	\$1,650.00	WINE	Pavilion	Kevin Sea
0011	Santa Rosa	02	01	Construction lab furnishing/equipment	1	\$15,000.00	\$15,000.00	HORT	Shone Hort Lab	Joel Grogan
0011	Shone Farm	02	01	Cellar Automation: Installation of TankNet system	1	\$1,400.00	\$1,400.00	WINE	Pavilion	Kevin Sea
0012	Shone Farm	02	01	Cellar Automation: TankNET PC-1 Ferment. Controlle	6	\$299.00	\$1,794.00	WINE	Pavilion	Kevin Sea
0013	Shone Farm	02	01	Cellar Automation: TankNET Light Software	1	\$2,500.00	\$2,500.00	WINE	Pavilion	Kevin Sea
0014	Shone Farm	02	01	Tree Plotter, Web-based Urban Forestry Software Ap	1	\$3,000.00	\$3,000.00	NRM		Kasey Wade
0015	Shone Farm	02	01	Chainsaw Class Equipment	1	\$300.00	\$300.00	NRM		Kasey Wade
0016	Santa Rosa	02	01	HORT Lab Equipment	1	\$10,000.00	\$10,000.00	HORT	2086	Joel Grogan
0017	Shone Farm	02	01	Schmeizer no til drill	1	\$14,000.00	\$14,000.00	VIT	Shone	Merilark Padgett
0018	Santa Rosa	02	01	Thermocycler for Veriflow Brett Sys. and centrifug	1	\$11,000.00	\$11,000.00	WINE	Lark	Kevin Sea
0019	Santa Rosa	02	01	Flour Mill	1	\$6,000.00	\$6,000.00	SUSAG	Shone	Josh Beniston
0020	Santa Rosa	04	01	Laptop and portable projector	12	\$1,000.00	\$12,000.00	AGBUS	Lark 2060	George Sellu
0021	Santa Rosa	04	01	Classroom Chairs for Ag/NR Rooms	123	\$300.00	\$36,900.00	Ag/NR	Lark Hall	Maddie Giltner
0022	Santa Rosa	02	01	Electric Nursery Cart and Battery	1	\$16,000.00	\$16,000.00	HORT	Greenhouse	Joel Grogan
0023	Petaluma	02	01	Radiograph Machine - digital	1	\$130,000.00	\$130,000.00	Vet Tech	Lark Hall	Dan Famini
0024	Santa Rosa	02	01	Water Pump	1	\$800.00	\$800.00	HORT	LARK	Joel Grogan
0025	Santa Rosa	02	01	Triage Equipment	1	\$4,000.00	\$4,000.00	Vet Tech	Lark Hall	Dan Famini
0026	Santa Rosa	02	01	Floral Design Equipment	1	\$10,000.00	\$10,000.00	FLORS	Lark	Diane Dolan
0027	Santa Rosa	02	01	Whiteboards	1	\$5,000.00	\$5,000.00	AG/NR	2089, 2060	Maddie Giltner
0028	Santa Rosa	02	01	Inner Stave System	1	\$1,450.00	\$1,450.00	Wine	Lark Hall	Kevin Sea
0029	Santa Rosa	02	01	Analytical balance	1	\$800.00	\$800.00	Wine	Lark Hall	Kevin Sea
0030	Shone Farm	02	01	5000 Gallon Rainwater collection tanks	2	\$2,500.00	\$5,000.00	SUSAG	SHONE	Josh Beniston
0031	ALL	02	01	Grafting Kits	10	\$250.00	\$2,500.00	HORT	Shone Hort Lab	Joel Grogan
0032	Santa Rosa	04	01	Lab Tables for Ag/NR Classrooms	20	\$1,000.00	\$20,000.00	Ag/NR	Lark Hall	Maddie Giltner
0033	Santa Rosa	02	01	Vine Moisture Status Equipment	2	\$5,000.00	\$10,000.00	VIT	SHONE	Merilark Padgett
0034	Shone Farm	02	01	Mazzei Fertilizer Injectors	6	\$200.00	\$1,200.00	AGRI	Lark	Josh Beniston
0035	Santa Rosa	02	01	Veriflow VINO Brett Test System	1	\$850.00	\$850.00	WINE	Lark	Kevin Sea
0036	Santa Rosa	06	06	Standing desk in classroom	1	\$400.00	\$400.00	NRM	2089	Kasey Wade
0037	Petaluma	02	01	Nursing Equipment - advanced	1	\$9,200.00	\$9,200.00	Vet Tech	Lark Hall	Dan Famini
0038	Petaluma	02	01	Multiple Parameter anesthetic monitor	1	\$8,300.00	\$8,300.00	Vet Tech	Lark Hall	Dan Famini
0039	Petaluma	02	01	Holding cages/kennels	4	\$1,000.00	\$4,000.00	Vet Tech	Petaluma	Dan Famini
0040	Santa Rosa	02	01	Microoxygenation System	1	\$6,279.00	\$6,279.00	Wine	Lark Hall	Kevin Sea

0041	Shone Farm	02	01	Hoophouse Venitlation Equipment	1	\$1,500.00	\$1,500.00	SUSAG	Shone	Josh Beniston
0042	Shone Farm	02	01	Heat Lamp, Auto Waterers, Auto Waters W/Hoses	4	\$500.00	\$2,000.00	ANSCI	SHONE	Amy Housman
0043	Petaluma	02	01	Patient Examination Equipment advanced	1	\$9,150.00	\$9,150.00	Vet Tech	Lark Hall	Dan Famini
0044	Shone Farm	02	01	Portable Livestock Scale	1	\$4,500.00	\$4,500.00	ANSCI	SHONE	Amy Housman
0045	Santa Rosa	02	01	AGRI Lab Equipment	1	\$3,000.00	\$3,000.00	AGRI	Lark	Josh Beniston
0046	Santa Rosa	02	01	Greenhouse HVAC equipment	1	\$5,000.00	\$5,000.00	HORT	LARK	Joel Grogan
0047	Santa Rosa	02	01	Trailer for Nursery Cart	1	\$3,500.00	\$3,500.00	HORT	Greenhouse	Joel Grogan
0048	Santa Rosa	02	01	Walk-in Floral Refrigerator	1	\$15,000.00	\$15,000.00	FLORAL	LARK	Diane Dolan
0049	ALL	02	01	Tablet Computers	12	\$600.00	\$7,200.00	AG/NR	LARK	Maddie Giltner
0049	Shone Farm	02	01	Sheep Creep Gate (1 Small and 1 large)	2	\$300.00	\$600.00	ANSCI	SHONE	Amy Housman
0049	Santa Rosa	02	01	Atago Digital hand-held refractometers and cases	10	\$400.00	\$4,000.00	VIT	Lark Hall	Merilark Padgett-Johnson
0049	Santa Rosa	02	01	Bench top pH meter and Carbodoseur	1	\$1,298.00	\$1,298.00	Wine	Lark Hall	Kevin Sea
0049	Santa Rosa	02	01	Animal handling equipment incld chute	1	\$6,000.00	\$6,000.00	ANSCI	Shone	Amy Housman
0049	Shone Farm	02	01	Electric pump for rainwater tank	1	\$650.00	\$650.00	SUSAG	SHONE	Josh Beniston
0049	Shone Farm	02	01	SystemSure Luminometer with Reagents	1	\$1,825.00	\$1,825.00	WINE	Pavilion	Kevin Sea
0049	Santa Rosa	02	01	Vacuum Pumps for Aeration-Oxidation System	5	\$550.00	\$2,750.00	WINE	Lark	Kevin Sea
0049	Shone Farm	02	01	RTV for Forest Use	1	\$20,000.00	\$20,000.00	NRM	Shone	Kasey Wade
0049	Shone Farm	02	01	Ag Code Software	1	\$10,000.00	\$10,000.00	VIT	Shone	Merilark Padgett
0049	Shone Farm	02	01	Soil Moisture sensors	1	\$10,000.00	\$10,000.00	SUSAG	Shone	Josh Beniston
0049	Shone Farm	02	01	Wooden informational kiosks for garden and compost	2	\$1,500.00	\$3,000.00	SUSAG	Shone	Josh Beniston
0049	Shone Farm	02	01	Compost spreader - SUSAG and AGMEC	1	\$20,000.00	\$20,000.00	SUSAG	Shone	Josh Beniston
0049	Shone Farm	02	01	Garden Lab Equipment	1	\$5,000.00	\$5,000.00	SUSAG	Shone	Josh Beniston
0049	Shone Farm	02	01	Tractor implements - Power Harrow/Spader	1	\$20,000.00	\$20,000.00	SUSAG	Shone	Josh Beniston
0049	Shone Farm	02	01	Soil science lab equipment	1	\$3,000.00	\$3,000.00	AGRI	Shone	Josh Beniston
0050	Santa Rosa	02	01	ARC GIS	1	\$0.00	\$0.00	NRM	2060	Kasey Wade

2.4d Non-Instructional Equipment and Technology Requests

Rank	Location	SP	M	Item Description	Qty	Cost Each	Total Cost	Requestor	Room/Space	Contact
0001	Shone Farm	02	01	Temp Control Specimen Storage	5	\$2,000.00	\$10,000.00	Ag/NR	Shone	
0002	Shone Farm	02	01	Walk-in Freezer Refrigerator	3	\$15,000.00	\$45,000.00	Ag/NR		
0003	Santa Rosa	02	01	Storage Shelves/Carts	2	\$1,000.00	\$2,000.00	Ag/NR	Lark	Debbie Eakins
0004	Santa Rosa	02	01	10x12 Storage Shed	1	\$3,000.00	\$3,000.00	VET Tech		Dan Famini
0005	Shone Farm	02	01	Storage Shed	1	\$2,000.00	\$2,000.00	Wine Studies		Kevin Sea
0006	Shone Farm	02	01	Storage Shed/Shipping Container	1	\$6,000.00	\$6,000.00	SUSAG	Shone Farm	Josh Beniston
0007	Santa Rosa	02	01	38"x42" tables waterproof tops	10	\$600.00	\$6,000.00	FLORAL	Lark	Diane Dolan
0008	Santa Rosa	02	01	30" stools or chairs for lab tables	30	\$200.00	\$6,000.00	FLORAL	Lark	Diane Dolan
0009	Shone Farm	02	01	Printer	1	\$5,000.00	\$5,000.00	Ag/NR	Pavilion	Kevin Sea

2.5a Minor Facilities Requests

Rank	Location	SP	M	Time Frame	Building	Room Number	Est. Cost	Description
0001	Shone Farm	04	01	Urgent	Shone Hort Lab		\$250,000.00	Replacement of environmental horticulture greenhouse- new facility at Shone farm
0002	Shone Farm	04	01	Urgent	Shone hort labs		\$50,000.00	Replacement of environmental horticulture construction lab - new facility at Shone farm
0003	Shone Farm	04	01	Urgent	Shone hort labs		\$50,000.00	Replacement of environmental horticulture AND Susag outdoor nursery area at Shone farm
0004	Shone Farm	04	01	Urgent	Shone hort labs		\$35,000.00	Tissue culture lab furnishing and equipment. Will retrofit into a new modular classroom.
0005	Santa Rosa	04	01	Urgent	Shone		\$50,000.00	Remodel Central Supply. Additional space needed for storage of supplies/equip
0006	Shone Farm	04	07	Urgent	Pavilion	Winery	\$25,000.00	Electricity for new glycol unit for student training
0007	Shone Farm	04	06	Urgent	Pavilion	Winery	\$25,000.00	Storage for winery equipment for improved classroom capabilities
0008	Shone Farm	04	07	Urgent	Pavilion	Winery	\$3,000.00	Tank and catwalk anchors
0010	Santa Rosa	04	01	Urgent	Lark	2060	\$100,000.00	Remodel computer lab classroom
0011	Santa Rosa	04	01	Urgent	Lark	2091-2099	\$50,000.00	Remodel, renovate, Lark AG/NR offices to include replacing office suite carpets, blinds, repainting
0012	Santa Rosa	04	01	Urgent	Lark Greenhouse		\$1,200.00	Greenhouse vent screens to reduce insect problems and pesticide use.
0013	Santa Rosa	04	01	2-3 Yr			\$100,000.00	New CAD lab to be shared by EH, NRM, and ApTech
0014	Santa Rosa	04	01	Urgent	Lark		\$100,000.00	Enlarge access area to central supply and classrooms for loading/unloading and for outside storage
0015	Shone Farm	04	01	Urgent	Shone		\$30,000.00	Student success lab group workstation equip for new classrooms/computer lab

2.5b Analysis of Existing Facilities

Environmental Horticulture Greenhouse/Nursery Compound (On-going concern)

The greenhouse/nursery compound *on campus* has been in disrepair and neglect after 34+ years of operation. The unit still serves nearly 300 students yearly in a myriad of Environmental Horticulture, Agriculture, and Sustainable Agriculture classes, but has not had any significant capital improvements since the unit was built. Due to the dilapidated conditions of this unit, serious safety issues have arisen, including student trip and slip hazards, structural collapse and other hazards associated with a glass enclosed compound. The compound is ill suited for the commercial cultural practices associated with the nursery operations such as planting, thinning, transplanting, potting, and other operations. The unit is in need of equipment associated with the nursery operations as well as the landscaping operations conducted on campus.

The district has recently proposed the idea of moving the Agriculture Department, including Environmental Horticulture, to Shone Farm. This relocation would require construction of a new greenhouse, which is a more appropriate and feasible option than renovation or replacement of the existing greenhouse on campus. The Environmental Horticulture Advisory Committee will weigh-in on design of the new approximately 2,500 square foot greenhouse and ancillary facilities. A Strong Work Force grant proposal was recently submitted (May 2019) for \$300,000 to construct the greenhouse as well as an outdoor landscape construction lab area.

Pending construction of a new facility, the faculty have identified several smaller, yet critical projects that need completion, e.g. minimal upgrades to keep existing greenhouse working.

Lecture/Laboratory Classrooms (On-going)

Over 3759 students in the department, and eleven full time instructors and over 50 adjunct instructors per semester, utilize the laboratory classrooms in the Lark Hall complex. The classrooms are used from early in the morning to late at night with classes ranging from Soil Science to Vet Practices to Sensory Evaluation of Wines. The classrooms surround a "Central Supply" area which houses laboratory supplies and equipment for the instructors. Thirty four years ago the layout of the complex was one of the best-designed occupational learning facilities in the state of California. But, as teaching styles change over the years, facilities should change to accommodate innovations in instruction. The thirty four year old classrooms need major remodeling for whiteboards, new movable workstations and seating, and enhanced lighting. A new laboratory classroom has been added to the facilities request to address student growth requirements in the Lark classroom area.

Vet Tech lab

Note: As a result of the concerns noted below, a lab for Vet Tech is currently under design on the Petaluma Campus.

The Vet Tech program coordinator has identified a need for students to have much more hands-on instruction in a lab setting. Currently the program coordinator uses a variety of rooms at any given moment. On a typical semester the courses are spread across 6 classrooms (3 on each Santa Rosa and Petaluma Campus) with equipment being transported to each class session. This limits the capacity and quality of the program due to both logistical/transport

issues and the very significant time demand on the coordinator which prohibits other activities from being accomplished.

3.1 Develop Financial Resources

3.2 Serve our Diverse Communities

- The AG/NR Department recruits faculty, both contract and adjunct who are sensitive to the diversity of our students and community.
- The program works collaboratively with Human Resources in advertising and marketing to diverse populations.
- The AG/NR Department works with advisory committees, industry and community groups to foster diversity in employment opportunities with our CTE programs.
- The Viticulture program works collaboratively with the Sonoma County Grape Growers with a pilot program called “Workforce Training for Hispanic Workers” to gain upward mobility in management.
- The Ag/NR Department is participating in a US Department of Agriculture grant to train and mentor new farmers and ranchers, with the University of California Cooperative Extension and the Latino Service Providers.

3.3 Cultivate a Healthy Organization

3.4 Safety and Emergency Preparedness

Debbie Eakins is the Ag/NR safety leader. Debbie ensure that all facets of departmental safety and emergency preparedness are maintained including: MSDS, first aid kits, respirators, seismic preparedness, etc...

The Ag/NR department does not require any safety trainings.

3.5 Establish a Culture of Sustainability

As farmers and ranchers the Ag/NR Department has an intimate daily relationship with the land, water and air. The land is both our love and our livelihood. Our job is to care for the land, and when we do that well, the land takes care of us. Accordingly, the Ag/ NR Department engages in an infinite number of sustainable practices, such as:

- Composting
- Rain water harvesting

- Cover crops
- Organic produce production
- Pasture rotation
- Polyculture
- Local marketing via farmers markets, Community Supported Agriculture, SRJC cafeteria, etc...
- Biological pest control
- Crop rotation
- Hedgerows
- Bioswales
- Invasive species reduction

As a result of many of these practices, Shone Farm Vineyards were Certified Sustainable in 2008 and the demonstration and sauvignon blanc blocks were Certified Organic by CCOF.

Students are exposed to all these practices in class as well as in outside endeavors by faculty, such as the student organization, Students for Sustainable Communities (SSC), which is co-advised by Ag/NR faculty member Kasey Wade. This organization that coordinates the sustainability activities of college clubs has been recognized for its efforts as the recipient of the “Best Practice Award” at the 2010 Higher Education Sustainability Conference. Its members have also received other awards for their sustainability practices and efforts, such as:

- Instrumental in getting the college to endorse the Talloires Declaration; collaborated with administration, faculty and staff to make this important signing happen on April 20th, 2011.
- Conducted two successful waste audits on the Bertolini Student Center food waste containers.
- Created the “Green Squad,” an educational team making students and staff aware of the appropriate use of waste receptacles in the Bertolini Student Center Dining Commons.
- Students have led Professional Development workshops for faculty and staff to engage them in discussion on how to make the campuses more sustainable.

Another sustainable practice facilitated by the Ag/NR Department is the propagation of oak seedlings. To emphasize the importance and value of the spectacular oak trees that inhabit SRJC, the Ag/NR Department propagates oaks seedlings that each student who graduates at the annual May commencement ceremony receives.

Recent grant we have applied for that demonstrate our commitment to sustainable practices include:

- USDA-Farmers Market Program Promotion, \$65,719 (completed in September 2012)
- Summer Ag Academy for Sustainable Agriculture, \$20,914 (completed in August 2012)
- NSF-ATE grant for "Improving Pathways in Sustainable Agriculture Education for the North Bay Region of California", \$200,000 (July 1, 2013 - June 30, 2016)
- Beginning Farmers and Ranchers Development Program, \$269,626 (Oct 2011-August 2014)
- USDA Specialty Crops Block Grant Program "Training the Next Generation of Farmers for the Growing California Oil Oil Industry", \$385,211 (October 2013 - June 2016)
- USDA Specialty Crops Block Grant Program "Innovative Specialty Crops Oriented Program In Education", \$385,925 (October 2013-June 2016)

Departmentally we are committed to the reduce, reuse, recycle philosophies behind the sustainable movement. Accordingly, we recycle “disposable” items, reduce our paper use and reuse instructional materials where ever possible. To further reduce our carbon footprint, with funding, departmentally we would like to secure a biodiesel vehicle to assist in carpooling students to and from Shone Farm.

4.1a Course Student Learning Outcomes Assessment

The Ag/NR faculty members (full-time and adjunct) assess at least one course SLO every time they teach a course. Faculty members usually share the findings of their course SLO assessments with their discipline colleagues and sometimes the entire department. Sharing the findings of course SLO assessments over the past three years has helped other faculty within the Agriculture and Natural Resource (Ag/NR) department adapt their instructional practice to address similar Student Learning Outcomes in their courses or similar student learning needs. For example, one of our colleagues found that students were not successful in a specific course because of their writing skills. As such, this colleague developed a set of guidelines, tips and a rubric that have contributed to a significant improvement in the quality of student papers. Other faculty members within the department have adopted and adapted these resources to enhance writing within their courses. This response to course SLO assessment has informed the instructional practice of all faculty members and ultimately students success within our department.

Courses within each of the programs within the Agriculture and Natural Resources (Ag/NR) Department are sequenced to meet at least one of the following requirements: SRJC Certificate, Associates Degree, industry certification or industry qualification. Most of the core courses in our programs are sequenced in order to improve student success. As such, each program offers courses that are sequenced from the introductory level up to capstone courses. In addition to sequenced courses, each program within Ag/NR offers a handful of electives that do not require pre-requisites. The courses within each program are sequenced in order to meet the Program Learning Outcomes (PLOs). Each of the PLOs are assessed in at least one of the courses within that program. Over the past three years, each program has developed a PLO map that shows

the alignment between course SLOs and PLOs. Furthermore, each program has a detailed plan with a timeline for assessing all PLOs. As a department that is in tune with industry trends and needs, each program has a plan for assessing course SLOs and subsequently all PLOs within a six-year cycle. Each time a course is revised, our SLOs are revised to reflect the changes in our courses. The revision of course SLOs and PLOs are informed by industry expectations or California State University (CSU) system requirements.

4.1b Program Student Learning Outcomes Assessment

Program Level Student Learning Outcomes (SLOs) within the Ag/NR Department are completed for all programs: Natural Resource Management, Viticulture, Animal Science, Equine Science, Veterinary Technician, Environmental Horticulture, Sustainable Agriculture, Agriculture Business Management, Agriculture Science, Education and Communication, and Wine Studies. Anchor program coordinators work to ensure course offerings continue to meet program level student learning outcomes on an annual basis.

4.1c Student Learning Outcomes Reporting

Type	Name	Student Assessment Implemented	Assessment Results Analyzed	Change Implemented
Course	AGBUS 107 -MATH APPS IN AGRIC*	N/A	N/A	N/A
Course	AGBUS 2 - AG COMPUTER APPLICAT	Fall 2011	Fall 2011	Spring 2012
Course	AGBUS 51 - AGRICULTURE LEADERS	Spring 2014	Spring 2014	N/A
Course	AGBUS 52 - AG OFFICER TRAINING	Spring 2014	Spring 2014	N/A
Course	AGBUS 56 - INTRO AG WINE BUS M	Spring 2012	Fall 2013	N/A
Course	AGBUS 61 - AGRICULTURAL MARKET	Spring 2014	Spring 2014	Spring 2014
Course	AGBUS 62 - AG SALES/COMMUNICAT	Spring 2014	Spring 2014	Spring 2014
Course	AGBUS 7 - AG ECON	Spring 2012	Spring 2012	N/A
Course	AGBUS 71 - AGRICULTURAL ACCNT	N/A	N/A	N/A
Course	AGMEC 163 - SMALL GAS ENGINES	Fall 2014	Fall 2014	Fall 2014
Course	AGMEC 60 - AG MACHINE/EQUIP SK	Fall 2014	Fall 2014	Fall 2014
Course	AGRI 10 - INTRO AG SCIENCES	Fall 2014	Fall 2014	Fall 2014
Course	AGRI 20 - INTRO TO PLANT SCIEN	Spring 2012	Spring 2012	Fall 2013
Course	AGRI 50 -INTRO AGRICULTURE ED*	N/A	N/A	N/A
Course	AGRI 56 - AG ENTERPRISE PROJEC	N/A	N/A	N/A
Course	AGRI 60 - SOIL & PLANT NUTRITI	Fall 2011	Fall 2011	Spring 2012
Course	AGRI 70 - INT PEST MANAGEMENT	Spring 2014	Spring 2014	Spring 2014
Course	ANHLT 109 - COMP/ALT VEG MED	Fall 2014	Fall 2014	Fall 2014
Course	ANHLT 120 - SML ANIML VET ASSI	Fall 2011	Fall 2011	Spring 2012
Course	ANHLT 121 - ANAT SURGICAL/DENT	Spring 2014	Spring 2014	Spring 2014
Course	ANHLT 123 - SMALL ANIMAL VET E	Spring 2013	Spring 2013	Spring 2013

Course	ANHLT 126 - VET TECH PROFICIEN	Spring 2013	Spring 2013	Spring 2013
Course	ANHLT 141- SM. AN. VET ANESTH	Spring 2014	Spring 2014	N/A
Course	ANHLT 142-VET PHARM MED CALCS	Spring 2014	Spring 2014	Spring 2014
Course	ANHLT 151-VET LAB IMAGING	Fall 2012	Fall 2012	Spring 2013
Course	ANHLT 161 - VETERIN OFF PROCED	Spring 2015	Spring 2015	Spring 2015
Course	ANHLT 50 - VETERINARY ANATOMY	Spring 2012	Spring 2012	Fall 2012
Course	ANHLT 52 - SML ANM REC/TRANS C	Fall 2014	Fall 2014	N/A
Course	ANSCI 153 - SUS ANIMAL PROD	Fall 2014	Fall 2014	Fall 2014
Course	ANSCI 171-BEHAVIOR & HUMANE MG	Fall 2014	Fall 2014	Fall 2014
Course	ANSCI 2 - VETERINARY PRACTICES	Spring 2011	Spring 2011	Spring 2012
Course	ANSCI 20 - BASIC ANIMAL SCIENC	Fall 2011	Fall 2011	Fall 2012
Course	ANSCI 26 - LIVESTOCK EVALUATIO	Spring 2012	Spring 2012	Spring 2014
Course	ANSCI 27 - BEEF CATTLE SCIENCE	Spring 2011	Spring 2011	Spring 2013
Course	ANSCI 28 - SHEEP SCIENCE	Spring 2014	Spring 2014	Spring 2014
Course	ANSCI 29 - DAIRY CATTLE SCIENC	N/A	N/A	N/A
Course	ANSCI 50 - POULTRY MGMT	Fall 2012	Fall 2012	N/A
Course	ANSCI 51-ANAT/PHYS FARM ANIMAL	N/A	N/A	N/A
Course	ANSCI 61 - LIVESTOCK FEED/NUTR	Fall 2013	Fall 2013	N/A
Course	ANSCI 91 - RANGELAND MANAGEMEN	Spring 2015	Spring 2015	Spring 2015
Course	EQSCI 101 - HORSE HANDLING SKI	Spring 2014	Spring 2014	Spring 2014
Course	EQSCI 102A - BEG HORSEMANSHIP/	Spring 2014	Spring 2014	Spring 2014
Course	EQSCI 102B - INT HORSEMANSHIP/	Fall 2014	Fall 2014	N/A
Course	EQSCI 102C - ADV HORSEMANSHIP/	Fall 2014	Fall 2014	N/A
Course	EQSCI 120 - INTRO THER RIDING	Spring 2014	Spring 2014	Spring 2014
Course	EQSCI 121 - THERAPEUTIC RIDING	N/A	N/A	N/A
Course	EQSCI 122 - THER RIDING PRO OP	N/A	N/A	N/A
Course	EQSCI 125 -BASICS OF DRESSAGE*	N/A	N/A	N/A
Course	EQSCI 151 - EQUINE ACCUPRESSUR	Summer 2014	Summer 2014	Summer 2014
Course	EQSCI 162 -HORSE HOUSE & FACI*	N/A	N/A	N/A
Course	EQSCI 170 - FARRIER SCIENCE	Fall 2014	Fall 2014	Fall 2014
Course	EQSCI 180 -EQUINE BUSINESS MG*	N/A	N/A	N/A
Course	EQSCI 25 - EQUINE SCIENCE	Fall 2014	Fall 2014	Fall 2014
Course	EQSCI 51 - EQUINE NUTRITION	Fall 2011	Fall 2011	Fall 2012
Course	EQSCI 52 - EQUINE HEALTH	Spring 2014	Spring 2014	N/A
Course	EQSCI 53 - EQUINE REPRODUCTION	Spring 2014	Spring 2014	Spring 2014
Course	EQSCI 60 - EQUINE ANATOMY/PHYS	N/A	N/A	N/A
Course	EQSCI 80 - EQUINE & STABLE MG*	Fall 2014	Fall 2014	Fall 2014
Course	HORT 110 - UNIQUE TREES NO. CA	Fall 2013	Fall 2013	Fall 2013
Course	HORT 111 - UNIQ SHRBS, VNS, GC	N/A	N/A	N/A
Course	HORT 112 - PERENNIALS FOR SO C	Fall 2013	Fall 2013	Fall 2013
Course	HORT 115 - ORNAMENTAL GRASSES	N/A	N/A	N/A
Course	HORT 115.1 - DSGN ORNAMENTAL G	N/A	N/A	N/A
Course	HORT 119 - LNDSCPNG CALIF NTV	N/A	N/A	N/A
Course	HORT 12 - PLNT MATERIALS: WIN/	Spring 2013	Spring 2014	Spring 2013
Course	HORT 151 - PRUNING ORNAMENTALS	Fall 2013	Fall 2013	N/A
Course	HORT 153 - BASIC TURF CARE	N/A	N/A	N/A
Course	HORT 171 - IPM IN HORTICULTURE	Spring 2013	Fall 2013	Spring 2013
Course	HORT 180 - WATER CONSERVING LA	Spring 2014	Spring 2014	N/A
Course	HORT 181 - WATER EFFIC LANDSCA	Spring 2012	Fall 2011	Fall 2013
Course	HORT 189 - LNDSCP DRAINAGE BAS	Spring 2014	Spring 2014	N/A
Course	HORT 195A - CAD:LANDSCAPE SITE	Spring 2014	Spring 2014	N/A
Course	HORT 195B - CAD:PLANTING PLANS	Spring 2014	Spring 2014	N/A
Course	HORT 195C - CAD:IRRIGATION PLA	Spring 2014	Spring 2014	N/A
Course	HORT 50.1 - INTRO HORTICULTURA	Spring 2011	Spring 2011	Fall 2011
Course	HORT 50.2 - HORT INDUSTRY & CA	Fall 2012	Spring 2013	N/A
Course	HORT 56 - ENTERPRISE PROJECT	N/A	N/A	N/A
Course	HORT 65 - HORT WORKPLACE PRACS	Fall 2012	Fall 2012	Fall 2013

Course	HORT 66 - GRADEN CENTER OPS	Spring 2013	Fall 2013	Spring 2014
Course	HORT 70 - PLANT PROPAGATION	Spring 2013	Spring 2013	N/A
Course	HORT 71 - NURSERY PRODUCTION	Fall 2012	Spring 2013	Fall 2013
Course	HORT 72 - GREENHOUSE PRODUCTIO	Spring 2014	Spring 2014	N/A
Course	HORT 8 - PLANT MATERIALS: SU/F	Fall 2013	Spring 2014	N/A
Course	HORT 80 - LANDSCAPE PRACTICES	Spring 2012	Spring 2012	Spring 2013
Course	HORT 81 - TURFGRASS MGMT*	N/A	N/A	N/A
Course	HORT 82 - INTRO TO ARBORICULT*	N/A	N/A	N/A
Course	HORT 82.1 - TREE HEALTH MGT*	N/A	N/A	N/A
Course	HORT 91 - LANDSCAPE CONST/ESTI	Fall 2012	Spring 2012	Fall 2013
Course	HORT 92.1 - LANDSCAPE IRRIGATI	Spring 2013	Spring 2013	Spring 2014
Course	HORT 92.2 - LOW VOLUME LANDSC	Spring 2013	Spring 2013	Spring 2014
Course	HORT 93 - LANDSCAPE DRAFT & DE	Fall 2011	Fall 2011	Fall 2012
Course	HORT 94 - LANDSCPE DESIGN APPL	Spring 2014	Spring 2014	Spring 2015
Course	NRM 102 - NATIVE PLANTS RES*	N/A	N/A	N/A
Course	NRM 103 - RESTROING NATIVE HAB	Spring 2014	Spring 2014	Spring 2014
Course	NRM 110 -INTERP INTERACTION T*	N/A	N/A	N/A
Course	NRM 111 - ORIENTAT NAT RES PRK	Fall 2014	Fall 2014	Fall 2014
Course	NRM 12 - INTRO TO ENVIRON CONS	Spring 2010	Spring 2010	Fall 2011
Course	NRM 121 -GLOBAL POSITIONING S*	N/A	N/A	N/A
Course	NRM 131 - TRAILS MAINT/RECONST	Spring 2013	Spring 2013	N/A
Course	NRM 132 - CHAINSAW OPER/CARE	Spring 2014	Spring 2014	Spring 2014
Course	NRM 141 - BEG ROCK CLIMBING/SA	Spring 2014	Spring 2014	Spring 2014
Course	NRM 142 - ORIENTEERING WILDERN	N/A	N/A	N/A
Course	NRM 51 - WILDLAND TREE/SHRUBS	Spring 2011	Spring 2011	Spring 2012
Course	NRM 56 - ENTERPRISE PROJECT	N/A	N/A	N/A
Course	NRM 60 - INTRO TO OUTDOOR REC	Spring 2012	Spring 2012	N/A
Course	NRM 61 - OUTDOOR REC MGT	N/A	N/A	N/A
Course	NRM 63 - PARK INTERPRETATION	Fall 2011	Fall 2011	Fall 2012
Course	NRM 65 - REC FACILITY MAINT	N/A	N/A	N/A
Course	NRM 66 - WILDERNESS SKILLS	Spring 2012	Spring 2012	Spring 2014
Course	NRM 67-REC FACILITY MGMT	Fall 2014	Fall 2014	N/A
Course	NRM 70 - FOREST PRACTICES	Fall 2014	Fall 2014	Fall 2014
Course	NRM 72 - FIRE CNTROL/ITS USE	Spring 2014	Spring 2014	Spring 2014
Course	NRM 73 - INTRO FOREST MEASUREM	Fall 2014	Fall 2014	N/A
Course	NRM 84 - INTRO FISH/WILDLIFE C	Spring 2014	Spring 2014	Spring 2014
Course	NRM 85 - FOR HYDROL & WTRSHD M	Spring 2014	Spring 2014	Spring 2014
Course	NRM 86 - WATERSHED MONITR/ASSM	Spring 2015	Spring 2015	Spring 2015
Course	NRM 87 - GIS APPLIC IN NAT RES	Summer 2014	Summer 2014	Summer 2014
Course	NRM 88 - WATRSHD ECOL/RESTORAT	Spring 2013	Spring 2013	N/A
Course	NRM 91 - RANGELAND MANAGEMENT	Spring 2015	Spring 2015	Spring 2015
Course	SUSAG 103 - AGRICULTURAL COMPO	Spring 2014	Spring 2014	Spring 2014
Course	SUSAG 109 - ORGANIC CROP PLANN	Spring 2015	Spring 2015	Spring 2015
Course	SUSAG 116 - ORGANIC APPLE PROD	N/A	N/A	N/A
Course	SUSAG 117 - ORG FRUIT TREE & B	Summer 2014	Summer 2014	N/A
Course	SUSAG 118 - OLIVE OIL PROD & E	N/A	N/A	N/A
Course	SUSAG 119 - SPECIALTY CROP PRO	Summer 2014	Summer 2014	N/A
Course	SUSAG 120 - OR GRDING & FOOD P	Fall 2014	Fall 2014	N/A
Course	SUSAG 151 -HYDROPONIC FOOD PR*	N/A	N/A	N/A
Course	SUSAG 153 - CSA	Fall 2014	Fall 2014	N/A
Course	SUSAG 160 - DIRECT FARM MARKET	Fall 2014	Fall 2014	N/A
Course	SUSAG 162 - CSA LATE SPRING	N/A	N/A	N/A
Course	SUSAG 163 - CSA SUMMER	N/A	N/A	N/A
Course	SUSAG 50 - INTRO SUSTAIN AGRI	Fall 2013	Fall 2013	Fall 2013
Course	SUSAG 64 - WARM SEASON VEG PRO	Spring 2014	Spring 2014	N/A
Course	SUSAG 65 - COOL SEASON VEG PRO	N/A	N/A	N/A
Course	VIT 1 - WORLD VIT & WINE STYLE	Fall 2012	Fall 2012	Spring 2013

Course	VIT 113 - ORGANIC VITICULTURE	Spring 2014	Spring 2014	Spring 2014
Course	VIT 120 - VINEYARD PRUNING	Spring 2014	Spring 2014	Spring 2014
Course	VIT 121 - PRUNING TECHN VINE B	Spring 2014	Spring 2014	N/A
Course	VIT 122 - VINE CANOPY MNGMT	Spring 2014	Spring 2014	Spring 2014
Course	VIT 123 - SPRING BUD & GRAFT	Spring 2012	Spring 2012	Spring 2013
Course	VIT 130 - GRAPEVINE PHYSIOLOGY	Spring 2014	Spring 2014	Spring 2014
Course	VIT 131 - FRUIT QUALITY ASSURA	Spring 2014	Spring 2014	Spring 2014
Course	VIT 132 - ADVANCES IN VINEYARD	Spring 2014	Spring 2014	Spring 2014
Course	VIT 133 - ADVANCES IN VITICULT	Spring 2012	Spring 2012	Spring 2013
Course	VIT 51 - VITICULTURE: FALL PRA	Fall 2012	Fall 2012	Fall 2013
Course	VIT 52 - VITICULTURE: SPRING P	Spring 2010	Fall 2010	Spring 2011
Course	VIT 53 - ADV VINEYARD PRODUCTI	Spring 2013	Fall 2013	Spring 2013
Course	VIT 54 - VIT: SUMMER PRACTICES	Spring 2014	Spring 2014	Spring 2014
Course	VIT 55 - BASIC WINE VITICULTUR	Spring 2011	Spring 2011	Spring 2012
Course	VIT 60 - VINEYARD MANAGEMENT	Fall 2011	Fall 2011	Fall 2012
Course	WINE 1 - WORLD VIT & WINE STYL	Fall 2012	Fall 2012	N/A
Course	WINE 101 - WINE SALES AND DIST	Fall 2014	Fall 2014	Fall 2014
Course	WINE 102 - WINES GLBL MRKT/RTL	Fall 2013	Fall 2013	Fall 2013
Course	WINE 103 - CONSUMER DIRECT WIN	Fall 2014	Fall 2014	Fall 2014
Course	WINE 104 - AG & WINE MKTG FNDM	Fall 2012	Fall 2012	Fall 2012
Course	WINE 105 - WINE PUBLIC RELATIO	Summer 2014	Summer 2014	Summer 2014
Course	WINE 110 - PROF WINE JUDGING	Fall 2012	Fall 2012	Spring 2013
Course	WINE 111 - SONOMA APPELLATIONS	Fall 2012	Fall 2012	Fall 2013
Course	WINE 112 - WINE REGIONS OF CAL	Fall 2012	Fall 2012	Spring 2013
Course	WINE 113 - WINEMAKERS OF SONOM	Fall 2012	Fall 2012	Spring 2013
Course	WINE 114 - WINES OF CLAIF & EU	Fall 2012	Fall 2012	Spring 2013
Course	WINE 115 - WINES OF CA AUST/NE	Fall 2014	Fall 2014	Fall 2014
Course	WINE 116 - WINES OF ITALY	Fall 2014	Fall 2014	Fall 2014
Course	WINE 117 - WINES OF FRANCE	Fall 2014	Fall 2014	Fall 2014
Course	WINE 118 - ZINFANDEL-GRAPE TO	Fall 2012	Fall 2012	Spring 2013
Course	WINE 119 - EXAMINATION/PINOT N	Fall 2012	Fall 2012	Fall 2012
Course	WINE 121 - WINES OF SPAIN	Spring 2014	Spring 2014	N/A
Course	WINE 122 - DESSERT WINES OF WO	Fall 2014	Fall 2014	Fall 2014
Course	WINE 124 - CABERNET SAUVIGNON	Fall 2014	Fall 2014	N/A
Course	WINE 125 - NAPA VALLEY	Fall 2013	Fall 2013	Fall 2013
Course	WINE 130 - WINE SERVICE HOSPIT	Spring 2014	Spring 2014	N/A
Course	WINE 131 - WINE IND EVENT PLAN	Spring 2015	Spring 2015	Spring 2015
Course	WINE 150 - AMATEUR WINEMAKING	N/A	N/A	N/A
Course	WINE 3 - INTRO TO ENOLOGY	Spring 2014	Spring 2014	N/A
Course	WINE 42.1 - FALL WINERY OPERAT	Fall 2014	Fall 2014	N/A
Course	WINE 42.2 - SPR WINERY OPERATI	Spring 2014	Spring 2014	N/A
Course	WINE 55A - LAB ANALYSIS OF WIN	Fall 2014	Fall 2014	Fall 2014
Course	WINE 55B - LAB ANALYSIS OF WIN	Fall 2012	Fall 2012	Fall 2012
Course	WINE 56 - INTRO AG/WINE BUS MG	Fall 2012	Spring 2013	N/A
Course	WINE 62 - AG SALES/COMMUNICATI	Spring 2014	Spring 2014	N/A
Course	WINE 70 - WINE COMP TASTING	Fall 2014	Fall 2014	Fall 2014

4.2a Key Courses or Services that address Institutional Outcomes

[illegible]

AGRI 70	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
AGRI 98	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
AGRI 99	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANHLT 121	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANHLT 123	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANHLT 126	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANHLT 141	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANHLT 142	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANHLT 151	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANHLT 161	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANHLT 50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANHLT 51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANHLT 52	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANSCI 150	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANSCI 171	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANSCI 2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANSCI 20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANSCI 26			X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANSCI 27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANSCI 28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANSCI 29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANSCI 51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANSCI 61	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANSCI 65	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANSCI 91	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 100	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 101	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 102 A, B, C	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 120	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 121	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 122	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 125	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 150	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 151	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 154	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 162	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 170	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 180	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 52	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 53	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 60	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EQSCI 80	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 110	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 111	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 112	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 115	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 115.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 119	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 12			X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 151	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 153	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 171	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 180	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 181	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 195 (A,B,C)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 50.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 50.2			X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 56	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 65	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 66	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 70			X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 71	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 72	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 8			X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 80	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 81	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 82	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 82.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 91	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 92.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 92.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HORT 93	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

[illegible]

WINE 103	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 104	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 105	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 108	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 110	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 111	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 112	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 113	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 114	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 115	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 116	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 116.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 117	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 118	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 119	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 120	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 121	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 122	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 124	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 125	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 130			X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 131	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 150	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 151	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 42.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 42.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 55A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 55B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 56	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 62	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WINE 70			X	X	X	X	X	X	X	X	X	X	X	X	X	X

4.2b Narrative (Optional)

5.0 Performance Measures

Not Applicable.

5.1 Effective Class Schedule: Course Offerings, Times, Locations, and Delivery Modes (annual)

The AG/NR Department offers courses Monday through Friday, evening classes and weekend courses. Classes are offered based on student needs, maximizing use of college facilities, serving new or targeted populations, and ensuring enrollment growth sufficient to fund ongoing district operations. Many short courses are offered, ie.. 2-8 weeks, Fri/Sat, two weekends, etc. The majority of classes are offered on Santa Rosa campus and the SRJC Shone Farm. The Natural Resources and Wine Studies programs also offer courses on the Petaluma Campus while the Veterinary Technician program has moved to the Petaluma campus, with the exception of one to two classes on the Santa Rosa campus. Classes are also occasionally offered off site, such as Elise Allen High School, Pepperwood Preserve, Equi-Ed, and Animal Care Center. The department believes strongly in hands-on experience.

Unfortunately, classes with labs require lab set up and clean-up, and the department is too understaffed at Shone Farm, Santa Rosa, and Petaluma to set up any more labs. There is always a demand for specific courses to meet the needs of industry.

Faculty meet regularly with their respective advisory committees for updates in the industry and seek advice and recommendations concerning new courses.

5.2a Enrollment Efficiency

The AG/NR department evaluates the relevancy of each course in relation to scheduling. Based upon 2013-2014 combined totals for ALL locations in the district, the Ag/NR Department averaged 81.7% of seats filled (Fall 2013 – 81.1%, Spring 2014 – 82.3%). To maximize enrollment efficiency, courses are now offered on a rotation plan. Additionally, the AG/NR department increases their advertising and outreach efforts for low class counts.

Programs with an enrollment efficiency over 100%, based on 2013-2014 data were: Animal Science (F2013 - 100%) and Wine Studies (S2014 - 103.6%). The past year, the Ag/NR has been able to add more class offerings than previous years. This has led to more students enrolled in Ag/NR courses with a 10% increase in 13/14. However, this has meant that the Ag/NR enrollment efficiency has suffered.

The Ag/NR department is working to offer more classes as hybrid and online. Courses in Agribusiness, Natural Resources, and Wine Studies have been approved to be offered as hybrid or online.

5.2b Average Class Size

Class sizes for most of our courses are dictated by laboratory conditions, such as equipment availability, safety issues, etc. Based upon 2013-2014 combined totals for ALL locations in the district, the AG/NR classes average 24 students per class. If class sizes were to increase any further, this would come at a high cost of liability. A smaller class size provides the best hands on learning environment for students.

5.3 Instructional Productivity

2013-2014 FTES was 356.7, a 5.75% increase from 2012-2013. Ag/NR FTES represents 2.08% of the district total.

Based upon 2012-2013 data, combined totals for ALL locations in the district, the Ag/NR Department's FTES to FTEF ratio is 15.08. Each discipline is as follows:

- Agriculture: 25.4
- Agribusiness: 11.935
- Agriculture Mechanics: 14.875
- Animal Health (Veterinary Technician): 18.345
- Animal Science: 14.515
- Equine Science: 10.61
- Environmental Horticulture: 11.265
- Natural Resources: 12.8
- Sustainable Agriculture: 12.135

- Viticulture: 19.31
- Wine Studies: 14.76

Disciplines with high productivity ratio is reflective of the currency and value of the course, as well as having a full time program coordinator to assist in marketing and development of the program.

Disciplines that fall below district standards for instructional productivity reflect safety considerations of the students and the lack of full time program coordinator to effectively develop and market programs.

5.4 Curriculum Currency

There has been a major emphasis in the department for curriculum currency. Faculty have been working closely with statewide advisory groups monitoring Transfer Model Curriculum (TMC) and C-IDs (Course Identifications). Additionally, input has been obtained from the local program Advisory Committees and Ag/NR Department to ensure the currency and relevancy of our course offerings in the Ag/NR Department. The Agriculture department is nearly 100% up-to-date on curriculum currency. The outdated courses are the Internship and Work experience courses. The Ag Department will work with the Work Experience office to get the courses current.

2015-2016 Active and Current Courses by Department and Discipline				
Department	Discipline	Active Courses	Courses <u>Not</u> Current	Course Count Minus Non-Current Courses
Agriculture & Natural Resources				
	Agriculture (AGRI)	9	-2	7
	Agriculture Business (AGBUS)	9	0	9
	Agriculture Mechanics (AGMEC)	3	0	3
	Animal Health (ANHLT)	11	0	11
	Animal Science (ANSCI)	12	0	12
	Equine Science (EQSCI)	13	0	13
	Horticulture (HORT)	36	0	36
	Natural Resources (NRM)	26	-2	24
	Sustainable Agriculture (SUSAG)	13	0	13
	Viticulture (VIT)	17	0	17
	Wine Studies (WINE)	31	0	31
	Agriculture & Natural Resources Total	180	-4	176

Course Currency Report of Last Full Review Date Report Generated 5/6/2015

#	Discipline#	Last Review Date	Responsibility
2	AGBUS 2	4/27/2015	69
3	AGBUS 51	12/7/2009	69

4	AGBUS 52	12/7/2009	69
5	AGBUS 56	3/31/2014	69
6	AGBUS 61	3/9/2015	69
7	AGBUS 62	2/1/2010	69
8	AGBUS 7	3/31/2014	69
9	AGBUS 71	4/23/2013	69
1	AGMEC 163	3/31/2014	69
2	AGMEC 60	3/22/2004	69
1	AGRI 10	3/9/2015	69
2	AGRI 20	4/13/2015	69
3	AGRI 50	3/9/2015	69
4	AGRI 56	4/9/2012	69
5	AGRI 60	4/23/2013	69
6	AGRI 70	4/14/2014	69
7	AGRI 98	3/9/2015	69
1	ANHLT 109	12/9/2013	69
2	ANHLT 120	10/28/2013	69
3	ANHLT 121	11/25/2013	69
4	ANHLT 123	5/2/2011	69
5	ANHLT 126	3/23/2015	69
6	ANHLT 141	5/9/2011	69
7	ANHLT 142	5/9/2011	69
8	ANHLT 151	5/9/2011	69
9	ANHLT 161	5/9/2011	69
10	ANHLT 50	3/23/2015	69
11	ANHLT 52	5/9/2011	69
1	ANSCI 153	12/9/2013	69
2	ANSCI 171	10/4/2010	69
3	ANSCI 2	12/6/2010	69
4	ANSCI 20	3/9/2015	69
5	ANSCI 26	3/9/2015	69
6	ANSCI 27	3/9/2015	69
7	ANSCI 28	3/9/2015	69
8	ANSCI 29	3/9/2015	69
9	ANSCI 50	9/17/2012	69
10	ANSCI 51	3/29/2010	69
11	ANSCI 61	3/9/2015	69
12	ANSCI 91	3/9/2015	69
1	EQSCI 101	10/13/2014	69
2	EQSCI 102A	11/17/2014	69
3	EQSCI 120	3/28/2011	69
4	EQSCI 121	3/9/2015	69

5	EQSCI 122	4/4/2011	69
6	EQSCI 151	4/25/2011	69
7	EQSCI 170	3/28/2011	69
8	EQSCI 25	4/13/2015	69
9	EQSCI 51	3/9/2015	69
10	EQSCI 52	5/2/2011	69
11	EQSCI 53	4/18/2011	69
12	EQSCI 60	9/20/2010	69
13	EQSCI 80	11/8/2011	69
1	HORT 110	3/28/2011	69
2	HORT 111	3/28/2011	69
3	HORT 112	3/28/2011	69
4	HORT 115	9/19/2011	69
5	HORT 115.1	1/24/2011	69
6	HORT 119	9/12/2011	69
7	HORT 12	1/24/2011	69
8	HORT 127	3/23/2015	69
9	HORT 133	3/23/2015	69
10	HORT 151	9/26/2011	69
11	HORT 153	1/31/2011	69
12	HORT 171	4/2/2012	69
13	HORT 180	12/6/2010	69
14	HORT 181	3/9/2015	69
15	HORT 189	10/24/2011	69
16	HORT 195	3/23/2015	69
20	HORT 50.1	9/12/2011	69
21	HORT 50.2	9/12/2011	69
22	HORT 56	1/31/2011	69
23	HORT 65	9/12/2011	69
24	HORT 66	9/12/2011	69
25	HORT 70	9/26/2011	69
26	HORT 71	4/17/2012	69
27	HORT 72	4/17/2012	69
28	HORT 8	3/9/2015	69
29	HORT 80	10/10/2011	69
30	HORT 81	1/31/2011	69
31	HORT 82	3/7/2011	69
32	HORT 91	1/31/2011	69
33	HORT 92.1	9/26/2011	69
34	HORT 92.2	10/10/2011	69
35	HORT 93	1/31/2011	69
36	HORT 94	1/24/2011	69
1	NRM 103	3/9/2015	69
2	NRM 111	3/1/2010	69
3	NRM 12	4/13/2015	69

4	NRM 131	3/22/2010	69
5	NRM 132	3/31/2014	69
6	NRM 141	9/27/2010	69
7	NRM 142	3/29/2010	69
8	NRM 51	2/1/2010	69
9	NRM 56	4/27/2015	69
10	NRM 60	3/31/2014	69
11	NRM 63	3/9/2015	69
12	NRM 66	11/14/2011	69
13	NRM 67	3/12/2012	69
14	NRM 70	2/23/2012	69
15	NRM 72	3/31/2014	69
16	NRM 73	3/23/2015	69
17	NRM 80	3/9/2015	69
18	NRM 84	3/9/2015	69
19	NRM 85	2/14/2011	69
20	NRM 86	3/25/2002	69
21	NRM 87	3/28/2011	69
22	NRM 88	3/9/2015	69
23	NRM 91	3/9/2015	69
24	NRM 98	3/9/2015	69
25	NRM 99	5/11/2009	63
26	NRM 99I	5/11/2009	63
1	SUSAG 103	3/9/2015	69
2	SUSAG 109	5/7/2013	69
3	SUSAG 116	3/9/2015	69
4	SUSAG 117	3/9/2015	69
5	SUSAG 118	3/9/2015	69
6	SUSAG 119	3/9/2015	69
7	SUSAG 120	3/31/2014	69
8	SUSAG 153	1/27/2014	69
9	SUSAG 160	4/23/2013	69
10	SUSAG 163	12/9/2013	69
11	SUSAG 50	5/9/2013	69
12	SUSAG 64	4/16/2015	69
13	SUSAG 65	4/13/2015	69
1	VIT 1	12/8/2014	69
2	VIT 113	3/9/2015	69
3	VIT 114	3/23/2015	69
4	VIT 120	12/8/2014	69
5	VIT 121	11/17/2014	69
6	VIT 122	11/17/2014	69
7	VIT 123	11/17/2014	69
8	VIT 130	12/8/2014	69
9	VIT 131	12/8/2014	69

10	VIT 132	3/9/2015	69
11	VIT 133	10/25/2010	69
12	VIT 51	11/17/2014	69
13	VIT 52	11/17/2014	69
14	VIT 53	11/17/2014	69
15	VIT 54	11/2/2009	69
16	VIT 55	11/17/2014	69
17	VIT 60	11/17/2014	69
1	WINE 1	10/13/2014	69
2	WINE 101	10/13/2014	69
3	WINE 102	10/13/2014	69
4	WINE 103	5/2/2011	69
5	WINE 104	2/1/2010	69
6	WINE 105	5/2/2011	69
7	WINE 110	10/13/2014	69
8	WINE 111	10/13/2014	69
9	WINE 112	10/13/2014	69
10	WINE 113	10/13/2014	69
11	WINE 114	10/13/2014	69
12	WINE 115	10/27/2014	69
13	WINE 116	10/13/2014	69
14	WINE 117	10/13/2014	69
15	WINE 118	10/13/2014	69
16	WINE 119	10/13/2014	69
17	WINE 121	10/13/2014	69
18	WINE 122	10/13/2014	69
19	WINE 124	10/13/2014	69
20	WINE 125	10/13/2014	69
21	WINE 130	10/13/2014	69
22	WINE 131	10/27/2014	69
23	WINE 150	10/13/2014	69
24	WINE 3	10/13/2014	69
25	WINE 42.1	10/27/2014	69
26	WINE 42.2	10/13/2014	69
27	WINE 55A	5/9/2011	69
28	WINE 55B	5/2/2011	69
29	WINE 56	2/1/2010	69
30	WINE 62	10/13/2014	69
31	WINE 70	10/13/2014	69

5.5 Successful Program Completion

Associate of Science degrees

Program coordinators and instructors encourage individual students to continue with their classes for program completion. In 2013-2014, Associate of Science degrees were awarded for the following programs:

- Agribusiness: 0
- Agriculture Science, Education and Communication: 0
- Animal Science: 2
- Equine Science: 4
- Environmental Conservation ~ Natural Resource Management: 3
- Environmental Conservation ~ Parks & Recreation Management: 3
- Environmental Conservation ~ Watershed Management: 0
- Environmental Horticulture ~ Garden Design: 1
- Environmental Horticulture ~ Garden Design with CAD skills: 1
- Environmental Horticulture ~ Landscape Management: 2
- Environmental Horticulture ~ Nursery Management: 0
- Sustainable Agriculture: 2
- Viticulture: 9
- Wine Studies ~ Enology: 5
- Wine Studies ~ Wines Business and Marketing: 2
- Wine Studies ~ Wine Evaluation and Service: 2

In 2012-2013, 36 Associates of Science degrees have been awarded in the SRJC Ag/NR Department. While the number of associate degrees for Ag/NR majors is low, these numbers are not surprising or in any way discouraging. Completion of an AS degree in an Ag/NR major is not necessary or particularly useful for students who are Ag/NR majors intending to transfer to earn a BS in Ag/NR; these students accurately see very little benefit in completing an Ag/NR major with an AA degree. These students are so focused on transferring that they do not always complete all lower division courses here, but fit in as much as they can before transfer. Thus they may not complete all requirements for an AS degree.

Certificates

In 2012-2013, certificates were awarded in the following programs:

- Agribusiness: 0
- Animal Science: (Certificate discontinued in 2011)
- Equine Science: 1
- Environmental Conservation ~ Natural Resource Management: 1
- Environmental Conservation ~ Parks & Recreation Management: 2
- Environmental Conservation ~ Watershed Management: 2
- Environmental Horticulture ~ Garden Design: 2
- Environmental Horticulture ~ Garden Design with CAD Skills: 3
- Environmental Horticulture ~ Landscape Maintenance Skills: 0
- Environmental Horticulture ~ Landscape Management: 1
- Environmental Horticulture ~ Landscape Technician: 1
- Environmental Horticulture ~ Nursery Management: 1
- Environmental Horticulture ~ Nursery Technician: 1
- Natural Resource Management: 3
- Parks and Recreation Management: 0
- Sustainable Agriculture: 3
- Veterinary Technician: 9
- Viticulture: 3
- Watershed Management: 1
- Wine Studies ~ Enology: 2

- Wine Studies ~ Wine Business and Marketing: 2
- Wine Studies ~ Wine Evaluation and Service: 0
- Wine Studies ~ Wine and Vines: 0

The department is working with particular programs that have industry certification or licensure to further strengthen successful program completion. However, as with all career and technical education programs, it should be pointed out that many students do not have a goal of completing a certificate; instead, their focus may be on taking one or two selected courses for skill building, job enhancement, or licensure for entry into the workforce. Unfortunately, student success rates on licensure exams/certifications is not readily available from industry. Success of students is based solely on anecdotal information. The district would highly benefit in helping to acquire this information by having a "leaver study".

As a department we try to make sure that we minimize any barriers to successful completion of our majors courses. We coordinate scheduling between programs and ensure that courses are offered on a rotational basis frequently enough for students to complete their programs of study within a 2 year time period (when not under schedule reduction).

5.6 Student Success

Students receiving a grade of A, B, C or CR

Based upon 2013-2014 totals for ALL locations in the district, the Ag/NR Department has the following percentage of students receiving a grade of A, B, C or CR in each discipline as follows:

- Agriculture: 69.6%
- Agribusiness: 63.25%
- Agriculture Mechanics: 70.60%
- Veterinary Technician/Animal Health: 62.60%
- Animal Science: 81.60%
- Equine Science: 78.30%
- Environmental Horticulture: 69.20%
- Natural Resources: 75.35%
- Sustainable Agriculture: 82.35%
- Viticulture: 77.90%
- Wine Studies: 76.70%

On average across all disciplines, based upon 2013-2014 combined totals for ALL locations in the district, the Ag/NR Department has the following percentage of students receiving a grade of A, B, C or CR, 72.55%

Grade Point Average

Programs coordinators and instructors encourage individual students to strive for excellence. Based upon 2013-2014 combined totals for ALL locations in the district, the Ag/NR Department has the following average GPA in each discipline as follows:

- Agriculture: 2.73
- Agribusiness: 2.46
- Agriculture Mechanics: 2.49
- Veterinary Technician/Animal Health: 2.08
- Animal Science: 2.65

- Equine Science: 2.77
- Environmental Horticulture: 2.38
- Natural Resources: 2.90
- Sustainable Agriculture: 2.93
- Viticulture: 2.65
- Wine Studies: 2.86

The average GPA for all disciplines ranges from 2.60.

5.7 Student Access

The Ag/NR Department serves a broad range of students and has demonstrated experience in understanding and being sensitive to the diverse academic, socioeconomic, cultural, disability and ethnic backgrounds of community college students. Depending on the program enrollment of students in each discipline broken down by ethnicity and gender reflects that in the Ag/NR Department, approximately 75% of students are white, 12% Hispanic, and 13% either black, Asian, Native American, pacific islander, Filipino or other non-white ethnicity.

Review of the number of students broken down by gender reveals trends particular to programs. Animal based programs are largely female based (83-90%), while mechanic based classes are predominately male (67%). Agriculture Business, Sustainable Agriculture, and Wine Studies tend to be equally enrolled by both males and females. Review of the number of students broken down by age reveals that the Ag/NR department serves a broad range of age demographics, however the majority of student fall between 19-30. Horticulture, Viticulture, and Wine Studies, however also serve a substantial amount of students aged 46-60.

5.8 Curriculum Offered Within Reasonable Time Frame

All courses in the Ag/NR Department certificates and majors are offered on a regular or rotational basis so that students can ideally complete their programs of study within a two year period. Working with their advisory committees, program coordinators developed program course rotations that are reviewed annually. Course rotation sequences are maintained departmentally and shared with counseling and CTE coordinators.

5.9a Curriculum Responsiveness

In Spring 2010, the department developed a comprehensive master plan to determine how best to prepare students to continue their Ag/NR education or to enter the job market. This included conducting a scan of industry trends, review of labor market data, and an analysis of a number of other indicators. Advisory committee input was gathered and a community focus group was held to provide further feedback. The process concluded in spring 2011 with the development of work plans for each discipline, outlining key activities and timelines for implementation. Recommendations for revising curriculum is incorporated in the work plans.

The Ag/NR Department has advisory committees with membership numbers as follows for each program:

- Agribusiness: 9
- Animal Health: 12
- Animal Science/Equine Science: 26
- Environmental Horticulture: 9
- Natural Resources: 18
- Sustainable Agriculture: 16
- Viticulture: 21
- Wine Studies: 11

Members represent a diversity of professional opportunities within each of the respective disciplines.

Members that represent industry and also serve as adjunct faculty are as follows for each program:

- Agribusiness: 0
- Animal Health: 1
- Animal Science/Equine Science: 1
- Environmental Horticulture: 1
- Natural Resources: 3
- Sustainable Agriculture: 1
- Viticulture: 0
- Wine Studies: 1

The SRJC Agriculture/Natural Resources Department has continued with major curriculum work in each of its program areas to meet the California Community College Agriculture Core Course Model Programs. SRJC Agriculture & Natural Resources program coordinators and instructors meet annually with community college, CSU, and UC instructors in collaboration with current and new courses within their occupational curriculum. These courses follow a statewide articulation numbering system with CC, CSU, and UC agriculture courses statewide. Some of these courses also satisfy General Education requirements and UC/CSU numbered status. Agribusiness, Natural Resources, Animal Science, Environmental Horticulture, Viticulture, Welding, Equine Science and Park Management courses went through major updates and revision, with the addition of Student Learning Outcomes (SLOs). All Agriculture and Natural Resources Programs have a transfer track to CSU and UC agriculture majors. Additionally, the certificate programs during the major curriculum work were enhanced to meet the local employer and industry needs in the community. Program advisory committees were utilized for the review and approval process. During the California Agricultural Teacher Association quarterly meetings, Tech Prep and/or career pathways were discussed with local high schools and the Agriculture and Natural Resources Department.

5.9b Alignment with High Schools (Tech-Prep ONLY)

During the California Agricultural Teacher Association (CATA) quarterly meetings, Tech Prep and/or career pathways are discussed with local high schools and the SRJC Agriculture and Natural Resources Department. Additionally, the faculty are in the process of discussing articulation opportunities with Eve Nighswonger. This entails identifying Ag courses to put on the credit by exam list. Faculty have been concerned that the typical Ag transfer institutions may not accept credits granted to students through the credit by exam process so this needs to be further explored.

5.10 Alignment with Transfer Institutions (Transfer Majors ONLY)

The SRJC Agriculture/Natural Resources Department has continued with major curriculum work in each of its program areas to meet the California Community College Agriculture Core Course Model Programs. SRJC Agriculture & Natural Resources program coordinators and instructors meet annually with community college, CSU, and UC instructors in collaboration with current and new courses within their occupational curriculum. These courses follow a statewide articulation numbering system with CC, CSU, and UC agriculture courses statewide. Some of these courses also satisfy General Education requirements and UC/CSU numbered status. All Agriculture and Natural Resources Programs have a transfer track to CSU and UC agriculture majors.

5.11a Labor Market Demand (Occupational Programs ONLY)

The value of agriculture-related degrees cannot be underestimated. No other industry can feed the world's population that is growing at a rate where we cannot produce enough food for the number of people. According to research (Feedstuffs, October 26, 2009) our food production must double by 2050. Currently 21 million American workers produce, process and sell the nation's food and fiber, and the average age of today's farmer is 55.3 years old. Due to imminent retirements and the difference between the current rate of global agriculture productivity and the pace require to meet future needs of our growing world population, graduates in agriculture degree programs are needed. According to the latest data from AgCareers.com, 81% of jobs in the Ag industry require education beyond high school and almost half require at least a bachelor's degree. According to the AgCareers.com/AgrowKnowledge Enrollment and Employment Outlook Report in 2008 there was a deficit of 9,317 graduates with agriculture degrees to fill open positions in the US. The USDA also estimates there are or will be 54,500 annual openings for individuals with baccalaureate or higher degrees in food, renewable energy and environmental specialties between 2010 and 2015. The USDA study projected only 53,500 qualified graduates will be available each year and stated that employers have expressed a preference for graduates from colleges of agriculture and natural resources that tend to have more relevant work experience.

Although the US unemployment rates remained high in 2012, AgCareers.com experienced a significant increase in jobs posted on their website. In 2012, AgCareers.com had almost 40,000 job openings posted in the United States (up 16% from the previous year). That is more than 3,300 agriculture-related job openings each month. Further demonstrating the need for educated agriculturalists,

the November 2011 Monthly Labor Review projected particularly strong (double-digit) growth in certain agricultural careers such as agricultural inspectors, animal scientists, food scientists and technologists, natural sciences managers, pest control workers, soil and plant scientists, and veterinarians. December 2011, the Washington Post printed results of a Georgetown University study showing that recent college graduates with degrees in agriculture and natural resources were among those with the lowest unemployment rates in the nation at 7 percent, surpassed only by graduates with degrees in health (5.4 percent) and education (5.4 percent).

Agriculture positions are not only production-based, but encompass a broad range such as sales representatives, research scientists, quality assurance, marketing and engineers, just to name a few. The average starting salary for a graduate in the Ag industry is almost \$49,000 (according to the AgCareers.com/AgrowKnowledge Enrollment and Employment Outlook Report and the AgCareers.com Compensation Benchmark Review).

Agriculture is the top economic driver in California and generates over \$43 billion in revenue for the state. According to the California Department for Food and Agriculture, California agriculture is experiencing record growth and production with a 15 percent increase in the sales value of its products in 2011. The state's 81,500 farms and ranches received a record \$43.5 billion for their output last year, up from the \$38 billion reached during 2010. California remained the number one state in cash farm receipts with 11.6 percent of the US total. The state accounted for 15 percent of national receipts for crops and 7.4 percent of the US revenue for livestock and livestock products. California's agricultural abundance includes more than 400 commodities. The state produces nearly half of US-grown fruits, nuts and vegetables.

The California Community College Centers for Excellence recently completed an environmental scan of the agriculture value chain in California (www.coeccc.net/Environmental_Scans/ag_scan_cv_11.pdf) and found that there are currently 2.5 million individuals employed in more than 800 job titles within the agriculture value chain in the state. The average annual salary for agricultural value chain workers in California is \$50,000 (California careers as a whole average \$43,000). While the number of production jobs (currently 206,303) is expected to decrease in the next five years (due to the increasing efficiencies and mechanization), a net increase of 181,000 jobs is expected throughout the entire agricultural value chain, which includes support, research, technology, production, processing/packaging, marketing, and sales and distribution.

In a recent 2011 survey by the Economic & Workforce Development Initiative through the California Community Colleges, agriculture employers were asked to describe their organizations level of interest regarding educational and training programs that could be developed by community colleges for the agriculture value chain and workforce. The majority of responses indicated interest in on-site customized training for current employees and a certificate specific to occupations.

Following are highlights of industry trends related to the disciplines within the Ag/NR Department.

AGRICULTURE BUSINESS MANAGEMENT

Agribusiness accounts for nearly one-fifth of the United States (U.S.) Gross National Product (GNP) and employs close to one-fourth of the labor force. This sector includes firms in the value chain system such processing, marketing, sales and distribution. In California, 53% of the total revenue in agriculture comes from the agribusiness industry (United States, Department of Agriculture, 2014). Agribusiness jobs account for 34 percent of the workforce in the value chain in California. Over the next five years, the Agribusiness industry is expected to grow by at least 18 percent (distribution-14% and processing-4.4%) in Sonoma County. Additionally, the average salary for Agribusiness industry employees in Sonoma County is approximately \$51,000 per annum (Chancellors Office, California Community Colleges, 2014).

Although there has been significant growth in the Agriculture Business sectors, the number of community college programs that train students in this major are not keeping up with the trend. In California, there are 591 agriculture programs at California Community Colleges, of which, only 37 (6.5%) offer certificates or degrees in agriculture business. As such, there is a real need to increase enrollment in Agribusiness to meet industry needs. Graduates from Agribusiness programs are usually employed as loan officers, banker, lobbyists, sales/marketing managers, farm managers, distribution managers, personnel specialists, labor contractors and public relations specialists.

Most of the students enrolled in agribusiness courses intend to transfer to one of the following institutions: California State Polytechnic University, San Luis Obispo, California State University, Fresno, California State University, Chico, California State University Stanislaus, California State University, Sonoma and University of California, Davis. There are active articulation agreements between our program and the aforementioned institutions. In developing the new Associate Degree for Transfer (AST) in agribusiness, courses were designed and sequenced to ensure that students who complete the requirements for the AST would also meet the prerequisites to transfer as juniors to California State Universities. Although a larger number of students enrolled in agribusiness transfer to four-year institutions, there is a sizeable number of students that complete our certificate or degree programs to return to the workforce. In order to meet the needs of both pathways of students (career and transfer), courses have been designed to provide a wide range of skills that are required for both industry and four-year institutions. The structure and content of agribusiness courses will be continually updated to meet both industry needs and transfer requirements for four-year institutions.

ANIMAL SCIENCE

World food demand for food of animal origin will double in the next 25 years in order to feed an expected population of 9.1 billion. Trends in the animal science industry show an increase in vertical integration with a decrease in the number of producers, but larger sized operations; increased specialization to improve efficiency; increased geographic concentration. The above needs will need to be achieved while minimizing the costs to animals, environment and humans. Current SRJC courses, certificates, and majors have been refined to meet these trends.

Employment trends show an average increase in the need of Animal Science graduates by 12.9%. Currently, 6.4% of all animal scientists have a professional degree, 23.5% have a doctoral degree, 21% have a master's degree, and 35% have a bachelor's degree. Only 5.3% have an Associate degree. Due to these demographics, the majority of SRJC's animal science offerings are geared towards the transfer student. In fall 2011, the Animal Science Coordinator, with advisory committee input, determined that based on employment options, the Animal Science certificate was no longer necessary, and subsequently approved for discontinuance.

Animal Science associates degree students served Santa Rosa Junior College are helping to produce the increased value of animal agriculture production in California; between 2000 and 2010 there was a boost of more than \$3.2 billion in total economic output from animal agriculture for the state. This growth increased household incomes by more than 17,000 jobs, according to a report funded by the United Soybean Board. At the national level, the study found that the rise in value of US animal agriculture production in the last decade resulted in more than \$22 billion in total economic output. This produced a nearly \$4 billion increase in household incomes and 128,700 jobs.

In 2010, the total economic impact of animal agriculture in California was more than \$19 billion, compared to \$289 billion nationally. The effect on household earnings was \$3.6 billion in the state and \$51 billion nationally. Animal agriculture contributed 101,178 California jobs and more than 1.8 million jobs to the US economy.

The average animal scientists has a starting salary of \$31,540. The average salary earned is \$53,230.

California community colleges that offer Animal Science programs include Modesto College, Merced College, West Hills College, College of the Sequoias, Reedley College, Shasta College, and Bakersfield College. There are no outside requirements for licensing/accrediting of Animal Science programs for SRJC or any other community college institutions. In the coming year however, due to the growing concern for animal welfare it may necessary to investigate the development of an Animal Care and Use Committee for Shone Farm.

There has been minimal change in outside funding. Partnerships have been developed with community members for leasing of breeding animals, in order to preserve the limited livestock budget.

ENVIRONMENTAL HORTICULTURE

Increased interest in the quality of the environment, conservation, and restoration projects has stimulating growth in the horticulture industry over the last several years. California's environmental horticulture industry leads the nation with 21.9% of total nursery production and 8.6% of lawn and garden retail sales. California represents over a quarter of U.S. wholesale nursery production and retail sales, creating a total of 192,065 California jobs. 74,940 jobs come from production, 76,225 jobs from lawn and garden retailing, and 40,900 result from indirect and induced effects. The total payroll exceeds \$5.58 billion, with \$2.52 billion from floral and nursery production and over \$3.05 billion from lawn and garden retailing. (Economic Impact Report, 2008-2009 next census: 2015-2016). Combined, nursery

and floriculture are California's #4 agricultural commodity, producing 8.0% of the state's total agricultural output. Nursery products, flowers and foliage are produced in 55 of California's 58 counties. California leads the country in potted flowering plants, and is a dominate state in cut flower production as well as the production of bedding and garden plants. (California Agricultural Statistic Report 2013).

Nevertheless, due to the economic downturn, particularly in the construction industry, the current job market is difficult. EDD labor market information data projects a 9.6% increase in Landscaping and Groundskeeper Supervisor positions for 2008-2018 in California and a 9% increase in Sonoma County. For Landscape Groundskeepers and Workers, the projection is a 14% increase in California and a 14% increase in Sonoma County.

The employment outlook for the category of Farmworkers, Laborers, Crop and Nursery Workers in California is flat with a -.1% change. In Sonoma County, a 4.49% increase is projected. The Environmental Horticulture Advisory Committee confirmed the weakening job market in the nursery industry and the value and need for the two nursery certificates will be assessed in the coming year.

Longer term, as the economic recovery continues, the landscape field should strengthen. Private and commercial property values are enhanced by professionally designed landscapes, and the services of large and small landscape firms should return to be in high demand. In addition, a significant number of independent, entrepreneurial landscape/garden designers offer services throughout the county.

Graduates who possess landscape management skills are qualified to advance into supervisory and management positions within landscape contracting firms, design or landscape construction companies, municipal, state, county, and federal agencies, entrepreneurial landscape maintenance enterprises, and other occupations that require the application of plant knowledge, drafting/design, irrigation design, and landscape construction skills.

There are multiple areas that offer interesting employment options and starting pay to students who are prepared by SRJC's Environmental Horticulture program, including:

- Wholesale nursery propagator (\$15-40/hr.)
- Wholesale nursery grower (\$10-25/hr.)
- Field Superintendent Manager (\$30-45/hr.)
- Sales Manager (\$20-25/hr.)
- Marketing Manager (\$20-30/hr.)
- Floral Designer (\$35-50/hr.)
- Landscape Contractor (\$50-80/hr.)
- Landscape Designer (\$55-95/hr.)
- Irrigation Designer (\$75/hr.)
- Private Horticulture Consultant (\$50/hr.)
- Certified tree worker (\$25-40/hr.)
- Park Superintendent (\$35-50/hr.)
- Project Supervisor (\$20-30/hr.)
- Landscape Estimator (\$50/hr.)
- Foreperson (\$10-22/hr.)
- Crew Leader (\$10-22/hr.)
- Landscape Gardener (\$10-15/hr.)
- Salesperson (\$15-20/hr.)
- Integrated Pest Management specialist (\$50-70/hr.)
- Salesperson retail florist (\$20-35/hr.)
- Instructor (\$50-80/hr.)
- Landscape Design Assistant (\$15-23/hr.)

The variation of salaries is dependent upon the level of education, type of employment, specific job tasks and skills. Experienced workers typically earn \$10-22 /hr. Management and supervisory positions have the greatest earning at \$3,500 to \$5,500 per month. Owners/operators of many landscape maintenance businesses earn between \$4,500-8,500 per month. Many residential landscape installation contractors earn between \$150,000 -500,000 per year, gross income.

Environmental Horticulture programs can be found at the following community colleges: Cabrillo College, Foothill College, Santa Barbara City College, Reedley College, Modesto Junior College, Butte Community College, College of the Sequoias and Antelope Valley Community College.

Numerous SRJC Environmental Horticulture classes articulate with the CSU (Cal Poly and Fresno) and UC system (UC Davis).

EQUINE SCIENCE

Current estimates place 6.9 million horses in the United States involving 7.1 million Americans in diverse, sophisticated and high tech positions that annually employ 1.4 million full-time employees in all regions of the country. These people serve the industry, providing over \$2.5 billion in goods and services annually. This relates to a total impact of \$112.1 billion on the US Gross domestic product. In Sonoma County, the value of agricultural production and household horse-riding activities amount to 468 million dollars, almost one quarter of the value of Sonoma County farming. Horses are Sonoma County's #2 agricultural industry. Current production and market indicators suggest that the equine science industry will continue to experience growth. Areas for growth in the industry include breeding, training, and maintaining horses, operating tracks, show and recreational facilities as well as numerous ancillary activities. These include feed, tack, equipment, and real estate sales, legal services, art, photography and literature. Students who have earned a degree at Santa Rosa Junior College with a major in Equine Science are more than qualified for a wide variety of diverse careers in the equine industry.

California community colleges that offers Equine Science courses include Modesto College, Sierra College, College of the Sequoias, and Shasta College. These institutions, however, do not offer full certificates or majors in Equine Science, like SRJC. The only other California community college which offers a full degree in equine science is Feather River College in Quincy. This program offers a markedly different program than SRJC however, as it is geared towards competitive rodeo and backcountry horsemen. SRJC's program, in contrast, is a broad technical study of all phases of equine business and management practices, coupled with general studies to produce graduates that are well rounded individuals capable of entering all phases of the equine industry. Another thing that sets SRJC's Equine Science program apart from all other colleges in the nation, is our therapeutic riding program. Recognized as one of the most progressive forms of therapy, therapeutic riding offers students with disabilities the ability to control a horse as well as one's own body. The college offers courses for training in therapeutic riding, as well as courses for riders that work to increase balance, muscle control, strength, concentration, patience, responsibilities, and teamwork. Only one other community college in the nation has a therapeutic riding program.

With the exception of the therapeutic riding program being certified by the North American Handicapped Riding Association, there are no outside requirements for licensing/accrediting Equine Science at SRJC or these other institutions.

In 2010, CTEA funding was used to acquire a hotwalker, with installation by Shone Farm. Additionally in 2011, the Equine Science program obtained \$21,000 in funding from the CalRecycle Tire Derived products program for shredded rubber and stall mats for use in the equine unit and beef unit.

NATURAL RESOURCE MANAGEMENT

Natural Resource Management is a rapidly growing field, particularly in light of challenges to our environment like global warming, exponential population growth and potentially dangerous carbon emissions.

Environmental scientists work to find ways to meet and overcome those challenges, in order to maintain a livable environment for generations to come.

The jobs available to natural resource management graduates is diverse and in a wide range of settings. The U.S. Bureau of Labor Statistics lists some of the tasks handled by these professionals as: Monitoring watershed, finding ways to preserve water supplies, writing policies to preserve natural resources, consulting with companies to help them become more environmentally responsible, working with government entities to develop regulations and ensure they are followed. Scientists in this field often have backgrounds similar to those that work in physical or life science, but their focus is on environmental issues. Most that come into this field have a strong math and science background, and a minimum of a two-year degree in natural resource management to get into an entry level position. The U.S. Bureau of Labor Statistics predicts the field of natural resource management to grow at a much faster than average pace over the next few years.

Example of anticipated career changes for natural resource management include:
Forestry Technicians: Expected growth of 9% over 2008-18 as more land is set aside to protect natural resources or wildlife habitats. Also, more jobs may be created by recent Federal legislation designed to prevent destructive wildfires by thinning the forests and by setting controlled burns in dry regions susceptible to forest fires.

Parks and Recreation: Employment of recreation workers is projected to increase by 15 percent between 2008 and 2018. This growth is being driven by an increased interest in the "No Child Left Inside" program, which is fueling civic and social organizations and fitness and sports centers to increase their outdoor recreation activities.

Other Community Colleges offering Natural Resource Management programs in California include Truckee Meadows Community College, Reedley Community College, Shasta College, De Anza College, American River Community College, Butte Community College and Feather River Community College. Four year institutions in California that SRJC graduates transfer to in Natural Resource Management include UC Davis and Santa Cruz, and CSU Chico, Humboldt, Bakersfield, and Channel Islands. Numerous SRJC courses articulate with these four year institutions.

Licensing/accrediting agencies related to SRJC's Natural Resource Management program include the Seasonal Law Enforcement Park Ranger Academy – Windsor Training Center (recommended).

Partnerships or cooperative ventures existing with local employers include: Sonoma County Agricultural and Open Space District, Sonoma County Regional Parks, U.S. Army Corps of Engineers, North Bay Conservation Corps, National Park Service and Forests Unlimited.

SUSTAINABLE AGRICULTURE

Now that organic food has a nationally recognized production standard and is overseen by the United States Department of Agriculture, organic food has become legitimized in America as sales steadily climb. The number of certified organic farms and processing facilities in the United States increased nearly 3 percent from the end of 2010 to the end of 2011, with California still leading the nation with the most organic operations, according to the U.S. Department of Agriculture. USDA database shows a total of 17,673 U.S. farms and processing facilities were certified to the standards of the National Organic Program as of the end of 2011. That's 478 more operators than the end of 2010. The current total is also a 240 percent increase since the program started tracking that information in 2002. The database shows California has 3,853 certified organic operations. That's compared to 2,714 organic farms in 2008, although that number comes from the USDA Census of Agriculture and includes farms that are certified and exempt. U.S. Deputy Secretary of Agriculture Kathleen Merrigan said USDA has been working to increase the number of certified organic operations in the nation by 20 percent by 2015. Starting from the 2009 baseline of 16,564 operations, she said the goal is to hit a total of 20,655 certified operations in another three years.

With such a rapidly growing market in Sustainable Agriculture, there are multiple areas that offer interesting employment options to students who are prepared in SRJC's Sustainable Agriculture program. Employment opportunities upon completion of the SRJC Sustainable Agriculture program may include:

- Farm owner
- Niche grower of specialty produce, flowers, herbs, fruits and nuts
- Farm or garden manager - field or office
- Farming / Gardening consultant - private or company employee
- Seasonal Farm intern / apprentice (plant, irrigate, weed, harvest)
- Farmer's Market manager / assistant and/or vendor
- Retail/Wholesale nursery production (greenhouse/sales)
- Farm Advisor and/or research assistant with County Ag Commissioner, Cooperative Extension or United States Department of Agriculture
- School Garden coordinator
- Compost production and sales
- Organic support/sales and services (fertilizers, seed, equipment, etc...)
- Sustainable livestock production / Range or ranch manager
- Chef/ restaurateur
- Pest control advisor
- Public garden / botanical garden employee
- Farm/Garden estate caretaker
- Agriculture teacher / public speaker/ company representative

- Value-added product creator (i.e. wreaths, jams, brewer, tincture, oils, etc...)
- Nursery grower/worker for container vegetables, herbs, bare-root fruit trees

Santa Rosa Junior College is the only community college in California that offers an A.S. degree and two certificates in Sustainable Agriculture. Some of the curriculum is aligned with lower division Sustainable Agriculture major preparation at UC Davis, UC Santa Cruz, Cal Poly, and other universities.

Licensing/accrediting agencies related to Sustainable Agriculture programs are optional. Certifications can be obtained if desired in CCOF, Sustainably Farmed, Humane Farmed, Biodynamically Farmed, etc...

There has been a substantial increase in grant funding. One grant acquired by the Sustainable Agriculture program for 2010-2011 was a Felton Foundation Grant for \$25,000. Additionally, a USDA Farmers Market Promotion Program grant was awarded in 2011 in the amount of \$67,719 over 2 years, aimed at promoting Shone Farm products. Additionally, the Ag Department, the SRJC Small Business Development Center and the Latino Service Providers collaborated with the University of California Cooperative Extension (the lead agency) on a \$750,000 grant aimed at training beginning future ranchers and farmers. The USDA Beginning Farmers and Ranchers grant will run for 9 months starting March 2012. The final grant awarded in the Sustainable Agriculture program came from the CCC Chancellor's Office. This \$47,000 Collaborative Sustainable Agriculture Grant is aimed at providing elementary school children exposure to sustainable agriculture. Funding will be used to provide visits to Shone Farm and a 2 week long intensive summer academy.

VETERINARY TECHNICIAN

The demand for Registered Veterinary Technicians is nothing short of extreme. There are far fewer RVTs in Sonoma County than are required by the labor market. The California 2010 EDD data shows an acceleration of need for RVTs. In 2010 there were 120 RVTs and an anticipated need of 200 by 2020. This 66.7% growth is once again the strongest for any county in California. In addition there are the estimated 250 Veterinary Assistant positions in our county. State estimates for the 2010-2020 time frame include an anticipated 31% growth in technician positions (2,600 new jobs). According to the California Veterinary Medical Board there are 138 Registered Veterinary Technicians residing in the Sonoma County as of January 2012 to fill an estimated 240 positions. EDD labor market data are consistent with the number of workplace facilities (94 current premise permits) and veterinarians (231 valid licenses) in Sonoma County. According to the US Bureau of Labor Statistics the job prospects for Veterinary Technicians is "excellent". The 2010 data update has an increased anticipated growth of 52% or over 40,000 new jobs and 50,000 openings over the next 10 years... As of 2010 Veterinary Technicians are now listed under "Healthcare Professions" by BLS rather than Professional, Scientific, and Technical Services. The job prospects are still excellent, but the category change means they are no longer at the top of their list.

Santa Rosa Junior College is the predominant source for RVTs. Over the last three years 84% (26/31) of new RVT licenses in Sonoma County were earned by SRJC students.

Over the last few years Dr. Famini has developed a google group for employment and other announcements. Over 300 current and former SRJC students are members and hospitals now routinely email job announcements to Dr. Famini in preference to Craigslist or other sources. Taking into account the usual sources (craigslist, etc.) and the google group listings there are over 300 jobs/year for veterinary support staff in the Sonoma/Marin county area.

The closest community colleges that offer a Veterinary Technician program are Consumnes River College in Sacramento (~2 hour drive) and Foothill College in Los Altos Hills (1hr 45 minute drive). There are also branches of the private school Western Career College in Pleasant Hill and San Leandro (about 1hr 15 minute drive). However, current Western Career College tuition is about \$35,000 for the two-year program. All of the above programs are distinct from SRJC in that they are AVMA approved full time programs that include far more extensive hands-on component, maintain colonies of canine and feline patients, etc.

Recent articles mentioning the strong job market for Registered Veterinary Technicians include:

“Eight secure jobs worth landing this spring and beyond” on Fox Business News posted 3/27/2013.

“Animals Need Health Care Too” in Community College Week from 2/22/2010.

“Vet Techs in Demand” in the Press Democrat on 8/23/2009. This was a reprint of a New York Times Article.

Veterinary Technicians were listed as Number 2 in “150 Best Recession-Proof Jobs” by Laurence Shatkin, Jist Publishing, November 2008.

The critical demand for Registered Veterinary Technicians locally, statewide, and nationally continues to fuel strong student enrollment in courses. Additionally, there is an overall trend towards larger specialty hospitals and corporate ownership of hospitals (Veterinary Centers of America and Banfield). The larger and corporate hospitals tend to better utilize Registered Veterinary Technicians. This is due to both to a need for more technically advanced veterinary assistants as well as the fact that RVTs are a cheaper alternative to perform many of the tasks reserved for veterinarians in smaller hospitals. This includes a greater role in client communication, veterinary dentistry, vaccine appointments, etc. Larger and corporate practices are also less likely to allow unregistered assistants to perform tasks legally reserved for RVTs such as inducing anesthesia and placing splints.

The SRJC Veterinary Technician Program fulfills the state Veterinary Medical Board requirements for students to sit for the state Registered Veterinary Technician board

exam through the alternate route. There are three routes to be eligible to sit for licensure. 1) Attend a full time American Veterinary Medical Association 2-year program (the closest program is ~100 miles from Santa Rosa) 2) Already have an equivalent license from another state and have a minimum number of clinical experience or 3) the Alternative Route. The alternative route consists of two basic requirements: Academic requirements and Clinical experience requirements. The Academic requirements consist of many specific areas of instruction within 20 semester units. The SRJC fulfills this requirement. The Clinical experience required is 4416 hours under the supervision of a veterinarian and includes a list of specific job tasks that must be completed. The SRJC program includes the Academic component only and it is up to the student to meet the clinical requirement.

The Veterinary Technician Program offers an annual seminar on the admissions requirements and pathways to Veterinary School. This is followed by a unique tour of the UC Davis School of Veterinary Medicine which includes touring the Anatomy Lab, Surgery Lab, the teaching Hospital, meeting the admissions staff and sitting in on a few veterinary school lectures. We are the only community college in the state offering this opportunity.

Several partnerships have been developed over the last few years.

- The Small Animal Emergency Medicine class is now offered every odd Spring Semester. This class is held at Animal Care Center, the largest veterinary emergency center in the county. This class included over a dozen guest speakers from both Animal Care Center and PetCare emergency veterinary hospitals. It has become the most popular elective in the program.
- In order to provide hands-on class activities with live animals the program now partners with several local rescue groups: Bergin University for Canine Studies (formerly Assistance Dog Institute), Pets As Loving Support therapy dogs, cats from two local non-profit rescue groups, and Reading Therapy Dogs from another group. Animals from Sonoma County Reptile Rescue are also used in a single class per semester.
- Through cooperation with Paws Are Loving Support and the Humane Society of Sonoma County we have put on a free vaccine clinic for the pets of AIDS patients. This is the capstone experience of the Small Animal Nursing (AnHlt120) course. This is a win/win/win situation where the SRJC students gain valuable experience, PALS and their pets get preventative medical care, and the Humane Society is provided with a labor force to make this event possible.
- Cooperation with the shelters in the county continues with students volunteering or working in 5 different animal shelters including the continued intern program at Sonoma County Animal Care and Control helping this municipal shelter and giving students hands on experience in a variety of capacities including animal intake, spay/neuter clinic support, etc.
- Since fall 2010, the SRJC program offers a job shadowing rotation where students are invited to observe and participate in a variety of different veterinary clinical settings. This semester long weekly rotation has exposed 12 to 15 students per semester to hospitals including: Eye Care Center for Animals, Humane Society of Sonoma County, Large Animal Hospital of Cotati, Memorial Beach Animal Hospital, Montecito Animal Hospital, PetCare, VCA Animal Care Center, VCA Forestville, and Bradner Veterinary Hospital among others.

There has been minimal change in outside funding. The Redwood Empire Veterinary Medical Association has pledged to contribute \$500 year to fund an annual scholarship that would allow a Veterinary Technician student to sit for their Board Exams. Additionally, the Association now holds their annual Continuing Education event for veterinarians at the SRJC Shone Farm. For the 2010-2011 year, Dr. Famini received \$21,410 in CTEA funding and \$7,000 in 2012-13 for Vet Tech instructional equipment.

Historically no local venue existed for working RVTs to communicate or gain a perspective of their profession outside the walls of their own clinic. Additionally, as of July 2011 there is mandatory CE requirement for RVTs. To remedy these two problems Dr. Dan Famini founded the Redwood Empire Veterinary Technician Association. Since July 2011 this organization has held monthly CE and networking meetings with 50-80 attending RVTs and veterinary support staff. Now there are 11 person Executive Board consisting of 10 RVTs and Dr. Famini, with an all RVT officer team taking this project forward.

VITICULTURE

Winegrape production in Sonoma County totals over four hundred million dollars annually and accounts for the greatest revenue of all agricultural crops in the county (Figures from Sonoma County Ag Comm Office 2010 Crop Report can be found at http://www.sonoma-county.org/agcomm/crop_report.htm). About 73% of Sonoma County's agricultural production is growing wine grapes—60,302 acres of vineyards, with over 1100 growers.

The long-term outlook for the wine industry is positive as demographic trends suggest the consumer market will remain strong. In 2012, the Wine Institute reported a record 5.6 percent increase in cases of California wine sold in the U.S., compared to the previous year. The estimated retail value of the shipments totaled nearly \$20 billion, according to figures that institute released. During the same period, U.S. wine exports – 90 percent of which came from California – reached a new record of \$1.39 billion in winery revenues in 2011, an increase of 21.7 percent compared to 2010. 120,000 new wine labels were approved last year by the U.S. Tax and Trade Bureau.

Total wine sales in the U.S. from all production sources – California, other U.S. states and foreign countries – climbed to a new record of 347 million cases, a 5.3 percent jump from 2010, with an estimated retail value of \$32.5 billion, John Fredrickson of Gomberg Fredrickson & Associates reported, marking the 18th consecutive year of volume growth in the U.S. California's nearly 212 million cases held a 61 percent share of the U.S. market.

Additionally it should be noted that Sonoma County's reputation as a major wine producing area will grow over the next several years as a result of recent legislation and marketing efforts. A state requirement that wines produced in the county include

the phrase "Sonoma County" along with its American Viticulture Area was signed into law in fall 2011 and will go into effect in 2014. Similar laws are credited with increasing the profile of other California wine growing areas (including neighboring Napa County) resulting in an increase in viticulture productions.

Partnerships: Partnerships exist between the SRJC Viticulture program and local wineries purchasing fruit from Shone Farm Vineyard. Dependent upon contract negotiations, these wineries include Benzinger, Rodney Strong, Merry Edwards, La Crema, Arrowwood, Korbel, Clos Du Bois, and Sonoma Cutrer. Also the Sonoma County Winegrape Commission has been conducting workshops and trainings at the Shone Farm and SRJC viticulture students have been invited to participate at no charge.

Increase of funding from Sonoma County Vineyard Technical Group for some specialized pieces of equipment for Viticulture classes has been provided. Additionally the Sonoma County Winegrape Commission has provided a weather station for Shone Farm, which serves as a resource for all of Sonoma County as well as an educational tool for students.

Napa Valley College and Allan Hancock College provides a community college certificate or major in viticulture.

WINE STUDIES

The Wine Studies program has four emphases: Wine Evaluation & Service, Wine Business & Marketing, Enology, and Wines & Vines. The program prepares students for a variety of positions in the wine industry, such as: grower relations manager, viticulture wine quality specialist, winery laboratory assistants, cellar masters, assistant winemakers, winery education directors, wine quality control specialists, sensory evaluation personnel, wine sales specialist, wine club administrator, sales manager, public relations and marketing coordinator, and wine merchandiser.

In 2012, the Wine Institute reported a record 5.6 percent increase in cases of California wine sold in the U.S., compared to the previous year. The estimated retail value of the shipments totaled nearly \$20 billion, according to figures that institute released. During the same period, U.S. wine exports – 90 percent of which came from California – reached a new record of \$1.39 billion in winery revenues in 2011, an increase of 21.7 percent compared to 2010. 120,000 new wine labels were approved last year by the U.S. Tax and Trade Bureau.

Total wine sales in the U.S. from all production sources – California, other U.S. states and foreign countries – climbed to a new record of 347 million cases, a 5.3 percent jump from 2010, with an estimated retail value of \$32.5 billion, John Fredrickson of Gomberg Fredrickson & Associates reported, marking the 18th consecutive year of volume growth in the U.S. California's nearly 212 million cases held a 61 percent share of the U.S. market.

Numerous SRJC Wine Studies courses are articulate with UC/CSU viticulture and enology programs.

Napa Valley College, Allan Hancock College, and Las Positas provide degrees, or certificates in the same discipline. Additionally it should be noted that there are a number of private Wine Studies programs.

There are no requirements of licensing/accrediting agencies related to wine studies. There are future plans to create some wine sommelier accredited licensing certificates.

Efforts are underway to expand opportunities for students to become involved in the Shone Farm Winery, assisting the winemaker with all aspects of the operation, from production to marketing and distribution.

In Summary

In light of all these positive employment trends student enrollment in the Ag/NR Department continues to be high. The department anticipates this trend to continue and will need to work closely with the administration to avoid too drastic of a schedule reduction. Many Ag/NR classes are already over-enrolled and given the size of classrooms, laboratory requirement of most Ag/NR classes, lack of full time laboratory support staff, it is not possible to increase these any further. Much of what the department would like to do in terms of expansion and interdepartmental collaboration will only be possible with permanent staffing support.

5.11b Academic Standards

The Ag/NR Department meets annually to discuss academic standards ensuring that coursework is reflective of CC/CSU/UC level work.

6.1 Progress and Accomplishments Since Last Program/Unit Review

Rank	Location	SP	M	Goal	Objective	Time Frame	Progress to Date
0000	Shone Farm	01	01	<p>Short-term Vision (1-5 years) - Each instructional program in the Ag Department (Horticulture, Ag Business, Wine Studies, Viticulture, Animal Science, Sustainable Ag, Animal Health, Natural Resources, Brewing, Equine Science, Floral Design) will develop a strategic plan to include their recommendation for their program's instructional use of Shone Farm and their respective program instructional plan. Each program coordinator's strategic vision will include: curriculum design, equipment and supplies needs, farm locations and facilities relevant to your their program, classroom needs, student learning opportunities/trends for their program, number of students served by each program, products produced by each program, amount of acreage needed for each program, staff needed for each program.</p> <p>Long-term Vision (6 – 10 years) - Each Program Coordinator will include a short narrative for their long term (6-10) year plan for their Shone Farm Instruction use and respective program instructional plan.</p>	To have a concrete plan and guidelines for Shone Farm Instructional programs and operations.	2017 - 2018	Strategic Plan Facilitator; Faculty and Staff Time
0000	Shone Farm	04	02	<p>Measure H - \$3.8M for Shone Farm Projects</p> <p>Measure H funding will be used for the development and/or improvement of the following facilities at Shone:</p> <ul style="list-style-type: none"> -New Classroom -Balletto Tasting Room -Kitchen Upgrades and Storage 	1. Provide adequate and improved facilities for instructional components. 2. Improve/upgrade pavilion facilities for classes and events to help generate capital.	2017- 2019	Measure H
0000	Santa Rosa	01	01	Begin implementation of the redesigned/revitalized NRM Certificate/Major entitled: Natural Resources.	1. Complete 6 year review of representative curriculum. 2. Assist students in completing past catalog rights by offering substitute classes.	2018-2019	
0000	Santa Rosa	01	01	Provide NR expertise for Shone Farm strategic plan.	1. Begin working with CalFire for Shone's Forest Management Plan 2. Apply for CalFire reimbursement funding.	2018-2019	
0000	Shone Farm	04	01	Redesign Porter Barn to improve condition of Porter Barn. Redesign will also address functionality issues with current design and student learning. Barn will also be retrofitted	1. Provide adequate and improved facilities for instructional components. 2. Update electric and other wear and tear issues on Porter Barn. 3. Develop pens for new livestock endeavors.	2018-2019	

				to improve food safety and incorporate new species into the animal science			
0001	Shone Farm	01	01	Select and hire interns for Shone Forest following the model that was set in Spring '18 using donated funds from Dean Whittier	1. Provide hands-on instruction for NRM students. 2. Reduce fuels in the forest using BMP as presented by CalFire. 3. Build/maintain forest trails to industry standards. 4. Remove invasive species, specifically French Broom, to sustain ecological resiliency.5. Assist in the development of the Forest Management Plan	2018-2019	

6.2b PRPP Editor Feedback - Optional

—

6.3a Annual Unit Plan

Rank	Location	SP	M	Goal	Objective	Time Frame	Resources Required
0000	Shone Farm	01	01	<p>Short-term Vision (1-5 years) - Each instructional program in the Ag Department (Horticulture, Ag Business, Wine Studies, Viticulture, Animal Science, Sustainable Ag, Animal Health, Natural Resources, Brewing, Equine Science, Floral Design) will develop a strategic plan to include their recommendation for their program's instructional use of Shone Farm and their respective program instructional plan. Each program coordinator's strategic vision will include: curriculum design, equipment and supplies needs, farm locations and facilities relevant to your their program, classroom needs, student learning opportunities/trends for their program, number of students served by each program, products produced by each program, amount of acreage needed for each program, staff needed for each program.</p> <p>Long-term Vision (6 – 10 years) - Each Program Coordinator will include a short narrative for their long term (6-10) year plan for their Shone Farm Instruction use and respective program instructional plan.</p>	To have a concrete plan and guidelines for Shone Farm Instructional programs and operations.	2017 - 2018	Strategic Plan Facilitator; Faculty and Staff Time
0000	Shone Farm	04	02	<p>Measure H - \$3.8M for Shone Farm Projects</p> <p>Measure H funding will be used for the development and/or improvement of the following facilities at Shone:</p> <ul style="list-style-type: none"> -New Classroom -Balletto Tasting Room -Kitchen Upgrades and Storage 	1. Provide adequate and improved facilities for instructional components. 2. Improve/upgrade pavilion facilities for classes and events to help generate capital.	2017- 2019	Measure H
0000	Santa Rosa	01	01	Begin implementation of the redesigned/revitalized NRM Certificate/Major entitled: Natural Resources.	1. Complete 6 year review of representative curriculum. 2. Assist students in completing past catalog rights by offering substitute classes.	2018-2019	
0000	Santa Rosa	01	01	Provide NR expertise for Shone Farm strategic plan.	1. Begin working with CalFire for Shone's Forest Management Plan 2. Apply for CalFire reimbursement funding.	2018-2019	
0000	Shone Farm	04	01	Redesign Porter Barn to improve condition of Porter Barn. Redesign will also address functionality issues with current design and student learning. Barn will also be retrofitted	1. Provide adequate and improved facilities for instructional components. 2. Update electric and other wear and tear issues on Porter Barn. 3. Develop pens for new livestock endeavors.	2018-2019	

				to improve food safety and incorporate new species into the animal science			
0001	Shone Farm	01	01	Select and hire interns for Shone Forest following the model that was set in Spring '18 using donated funds from Dean Whittier	1. Provide hands-on instruction for NRM students. 2. Reduce fuels in the forest using BMP as presented by CalFire. 3. Build/maintain forest trails to industry standards. 4. Remove invasive species, specifically French Broom, to sustain ecological resiliency.5. Assist in the development of the Forest Management Plan	2018-2019	