



Instructional Programs

2017-2018 Self-Study

Three-Year Program Review Template

Horticulture

Natural Science

Statement of Collaboration

The program faculty listed below collaborated in an open and forthright dialogue to prepare this Self Study. Statements included herein accurately reflect the conclusions and opinions by consensus of the program faculty involved in the self-study.

Participants in the Self-Study

Jeffery Feaster

Valerie Loew

Authorization

After the document is complete, it must be signed by the Principal Author, the Department Coordinator, and the Dean prior to submission to the Program Review Committee.

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1.0 Mission and Goals

The College's Mission, Vision, Core Values and Goals drive all college activities. The Program Review committee would like to understand the connection of your program to the College's Mission, Vision, Core Values and Goals. Summarize how your program supports each area.

Mission: The Horticulture department supports the Fullerton College mission of offering flexible pathways for students to earn degrees, certificates and skills. The Horticulture department offers a wide variety of certificates for students looking to gain a particular skill set for job advancement. We also offer an AA, and AS for transfer to four year institutions. Many individuals take our classes for more personal reasons like improving their landscape or installing or repairing an irrigation system, and a multitude of other skills that will help them at home. Some students even start their own businesses. As instructors in a vocational program we love to see our students' transition into the workforce. We also support the college mission by fostering a supportive and inclusive environment for our students. The horticulture students are a diverse group both in age and ethnicity. We have first time college students, and students of retirement age. Everyone has the same opportunities, whether it is in the classroom or out. They participate in group projects, work in the gardens and greenhouses together. These activities encourage its members to be responsible towards one another.

Vision: Our vision and goals as instructors in the Horticulture department supports the vision of the college for positive change. In almost all of our classes we are teaching students about sustainability. We encourage students to grow their own food, conserve and recycle water, reduce their chemical and fertilizer footprint by planting plants that encourage beneficial insects and replenish nutrients back into the soil. As students participate in our hands on classes, they are inspired to try these skills at home. These small and transformative lessons can impact our local communities' one household at a time.

Core Values: The Horticulture department being set apart from the main campus has developed its own sense of community with our own students. There is a cohort of students that move through the program together, this builds strong community. Our interns who are both horticulture students and employees of the department, spend many hours per week in the department and build strong relationships not only with each other but the faculty and staff as well.

The facility is open for division and campus functions, as well as the community. We host the Fullerton Beautiful garden tour; we have 3 large plant sales each year which attracts hundreds of visitors to the facility.

The faculty and staff are constantly learning new skills and about new plant material by attending various workshops and visiting nurseries, and garden center. We can then pass these skills and knowledge to our students. We support the involvement of all in the decision making process, and expect to be involved in all aspects of the renovation of the Horticulture department, and to provide input on plant material for other parts of campus.

We support innovation and have recently completed our first year teaching Aquaponics/Hydroponics in the new facility. Finally, as mentioned earlier, we accept the responsibility for the betterment of the world by teaching and demonstrating to our students sound horticultural skills that minimize the ecological footprint that we all impart on the planet.

College Goals: As a department we are constantly working to improve the success and retention of our students. Most of our courses have extensive college level reading as part of the curriculum. To assist underprepared students, lectures and other course materials including chapter summaries, study guides, and links to video are routinely posted onto MyGateway and Canvas.

With Tableau, we now have access to data that can be used to understand and identify where specifically the achievement gaps are. This will allow us to make more informed decisions. We no longer have to wait for program review to view data, as long as this data base is continually updated.

We have received outside funding for the department from grants, and strong workforce and will continue to apply for more. We are constantly involved in community outreach by being a resource for plant problems, plant identification, as well as a source of information for people looking to hire landscape professionals. We continue to reach hundreds of community members through our plant sales.

2.0 Program Data & Trends Analysis

2.1 Key Performance Indicators (KPI)

For each KPI listed below, analyze and report your findings and describe what they mean.

(Attach 5-year longitudinal data from Office of Institutional Research and Planning (OIRP) to Appendix.)

KPI	Findings
Enrollment 2012-13 = 378 2013-14 = 390 2014-15 = 363 2015-16 = 371 2016-17 = 344	Our enrollments have decreased since our last program review 369 vs 393. As we seek to have more students earn certificates, and as college enrollment was high, we were allowed to offer and not cancel classes that had 60% or lower fill rates. While this is beneficial for the students, it has allowed these numbers to drop by not offering classes that might be in higher demand. Our course offerings have also declined. This can be attributed to the amount of overload and evenings full time faculty wish to teach, and the lack of a qualified pool of adjunct faculty to fill in the gaps
Total FTES 2012-13 = 61 2013-14 = 56 2014-15 = 56 2015-16 = 57 2016-17 = 64.5	The total FTES has risen slightly since our last program review 58.9 vs 55. In 2016-17 the aquaponics and permaculture classes were offered. Permaculture is a 5-unit class, and Aquaponics/Hydroponics a 4-unit class, the increase that students spend in class (WSCH) will cause the FTES to increase, which it did and most likely the reason for this increase in 16-17 which increased our overall average
Sections 2012-13 = 22 2013-14 = 22 2014-15 = 18 2015-16 = 21 2016-17 = 18	The number of sections has decreased slightly since our last program review 20.2 vs 21. During this time period we had to cancel a class taught by an adjunct due to illness, another reason is the strain it takes on full time faculty teaching both day and evening classes. Again a lack of qualified adjunct faculty to relieve this burden will tend to keep class offerings down.
FTEF 2012-13 = 5.6 2013-14 = 5.2 2014-15 = 4.9 2015-16 = 5.6	The FTEF has increased slightly since our last program review 5.36 vs 5.24. We have 1.5 full time faculty in the department as one position is split with Biology. We usually have 2 adjuncts teaching 1 class each. This means that the full time instructors are teaching overload, and multiple evenings during the semester

2016-17 = 5.5	
Fill Rate 2012-13 = 94% 2013-14 = 92% 2014-15 = 106 % 2015-16 = 84 % 2016-17 = 88%	The fill rates have declined since our past program review 92.8 % vs 100.6%. As the economy and job availability increase we typically see a decrease in enrollment. As mentioned previously several classes were allowed to be offered even though they had low enrollment. They had not been offered in years, and were part of a certificate program. These classes surely added to the decreased fill rate. The trend in enrollments across the college is also seeing a decline in enrollment
WSCH/FTEF 2012-13 = 330 2013-14 = 323 2014-15 = 341 2015-16 = 306 2016-17 = 352	The average WSCH/FTEF has declined since our last program review from 330.4 vs 339. Last year it was at its highest level at 352. Longer classes like permaculture add additional WSCH which will increase this number. While we are lower than Fullerton college as a whole, our number are similar to other vocational programs that we use as comparison, Automotive Technology, Construction Technology and Photography. These programs have similar class sizes as ours
Retention 2012-13 = 82% 2013-14 = 80 % 2014-15 = 82 % 2015-16 = 86 % 2016-17 = 81%	The average retention rate for Horticulture has risen slightly from our last program review 82.2% vs 81%. This is mostly due to the increase in 2015-16. We suspect that the courses offered during any particular play a large role in the retention rates. Our retention rates are similar to the College as a whole. It is slightly higher than Biology and other departments that offer more general education classes. As an instructor in the biology department I see a greater number of W's given in the general education classes that I teach.
Success 2012-13 = 66% 2013-14 = 64 % 2014-15 = 68 % 2015-16 = 76 % 2016-17 = 68 %	Our average success rate has increased slightly since our last program review 68.4% vs. 64.8%. While we do not have any evidence as to why these changes occur, we believe a lot has to do with the course offerings each year. We offered new courses (Aquaponics, Permaculture) that were in high demand and attracted new students to the department. These classes had a higher success rate. Some courses are inherently more challenging than others which tends to lower success rates. Other departments' rollover their courses each semester, changes to success rates can be then be better analyzed for the possible reasons for these changes. During this recent set of 5 year KPI data we have cycled through 33 unique courses. We tend to be lower in success rates than other vocational programs at the college possibly due to the college level reading and scientific concepts that are found throughout our curriculum

2.2 Peer Institution Comparison

Complete the table below.

College/Program:	Your Program	Antelope Valley	Bakersfield	Modesto	Santa Barbara
Retention:	F14 84% F15 86% F16 81% Avg. = 83.6%	F14 97% F15 86% F16 85% Avg. = 89%	F14 81% F15 85% F16 88% Avg. = 84.6%	F14 86% F15 90% F16 69% Avg. = 80%	F14 91% F15 89% F16 89% Avg. = 89.6%
Success:	F 14 65% F15 76% F16 70 % Avg. = 70%	F14 79% F15 69% F16 79.5% Avg. = 75.8%	F 14 69% F15 78.5% F16 76% Avg. = 74.5	F 14 61% F15 77% F16 46% Avg. = 61 %	F 14 78% F15 81.5% F16 83.6% Avg. = 81 %
Degrees Awarded:	AN1415 11 AN1516 15 AN16717 17	AN1415 4 AN1516 4 AN16717 3	AN1415 0 AN1516 3 AN16717 5	AN1415 6 AN1516 1 AN16717 3	AN1415 1 AN1516 2 AN16717 1
Certificates Awarded:	AN1415 4 AN1516 3 AN16717 0	AN1415 4 AN1516 4 AN16717 1	AN1415 1 AN1516 1 AN16717 2	AN1415 1 AN1516 0 AN16717 0	AN1415 1 AN1516 2 AN16717 4
Transfers:					

How does your program compare with peer institutions? Provide a narrative of your comparison. (Peer institutions are colleges or programs identified by the Office of Institutional Research and Planning (OIRP)). If we look at the 3-year average at each of our peer institutions for success and retention, we tend to be on the lower end of the scale. We are higher than Modesto and significantly lower than Santa Barbara. While we know that these institutions are HSI, we do not know the ethnic makeup for these particular departments. In our case (Horticulture) if we look at the past 5 years' enrollments, 46 % of our students are Hispanic while the next largest ethnicity is White at 36 %. During this same time period success rate among Hispanics was 64.7% compared to 72.5% for Whites. We do not know if this is a reason for the lower overall success rate compared to

our peer institutions, we can only make assumptions. As far as the other indicators we have a variety of certificates and degrees that can be earned, which is probably why we award more. We do have some suspicions about the numbers of degrees awarded. We have an end of the year awards ceremony where students who receive degrees and certificates are recognized, we do not see these numbers at this event.

2.3 Achievement Gap

Indicate achievement gap for each of the groups listed below. (Attach to Appendix the Success and Retention by Ethnicity Data as identified by the Office of Institutional Research and Planning.)

After looking at student head count by ethnicity, it appears that we can ignore most of the ethnic groups due the sample size being too small. Three groups Hispanic (46%), White (36%), and Asian (6%) make up 88% of our students. Males outnumber females 65% to 35%. Using these groups, we can see that there are achievement gaps. Female students are more successful than their male counterparts 72% compared to 66% respectively. Asian students although a smaller proportion of our students outperform both Whites and Hispanics 90% compared to 72% and 65% respectively.

Group	% Retention	% Success
Males	AN13 85% AN14 78% AN15 83% AN16 85% AN17 76.5% Avg. = 81.5%	AN13 67% AN14 62% AN15 65% AN16 74% AN17 62% Avg. = 66%
Females	AN13 79% AN14 82% AN15 81% AN16 88% AN17 87% Avg. = 83.4%	AN13 66% AN14 68% AN15 71% AN16 81% AN17 76% Avg. = 72.4%
Asian-American	AN13 93% AN14 100% AN15 91% AN16 87% AN17 90% Avg.= 92.2%	AN13 89% AN14 100% AN15 91% AN16 83% AN17 86 % Avg.= 89.8%
African-American	AN13 90% AN14 100% AN15 40% AN16 89% AN17 75% Avg. = 78.8%	AN13 74% AN14 77% AN15 40% AN16 89% AN17 50 % Avg. = 52%
Filipino	AN13 13% AN14 33% AN15 80% AN16 0% AN17 100% Avg. = 56.5%	AN13 13 % AN14 0% AN15 40% AN16 0% AN17 76.5% Avg. = 33.4%
Hispanic	AN13 80% AN14 78% AN15 81% AN16 85% AN17 78%4 Avg. = 80.4%	AN13 64% AN14 61% AN15 65% AN16 73% AN17 61% Avg. = 64.8%
Native American	AN13 100% AN14 50% AN15 67% AN16 0% AN17 100% Avg. = 79.25%	AN13 100% AN14 50% AN15 67% AN16 73% AN17 61%
Other Non-White	AN13 91% AN14 83% AN15 67% AN16 80% AN17 100% Avg. = 84.2 %	AN13 73% AN14 61% AN15 44% AN16 70% AN17 89% Avg. = 67.5
Pacific Islander	AN13 100% AN14 100% AN15 0% AN16 0% AN17 0% Avg. = 100%	AN13 0% AN14 0% AN15 0% AN16 0% AN17 0% Avg. = 0 %
White	AN13 82% AN14 80% AN15 84% AN16 90% AN17 82. % Avg. = 83.6	AN13 63% AN14 70% AN15 71% AN16 82% AN17 76 % Avg. = 72.4 %
Unknown	AN13 100% AN14 82% AN15 90% AN16 75% AN17 75% Avg. = 84.5 %	AN13 75% AN14 54% AN15 50% AN16 75% AN17 50% Avg. = 61%
Range (Max-Min)		

2.4 Program Effectiveness

Since your previous Program Review Self-Study, what significant changes have occurred that impact the effectiveness of your program? We have had several changes that have had a positive effect on the program. The development of the Aquaponics/Hydroponics facility and courses have given the department increased attention from management, students and the public. We were able to secure funding for this project from various sources. We are currently the only college with the facilities to offer such courses in Southern California. The hiring of a permanent dean who supports our program is also significant. From the beginning he has been an advocate for the program. With the oversight of the dean and his support staff, the natural science budget is better understood and managed. This has freed up additional monies which allowed us to purchase supplies and equipment to improve and support the program. We also have a well-qualified and reliable adjunct faculty member to teach our irrigation classes, we are currently cycling through these courses without gaps.

We have had some changes in our opinion that have had a negative impact on the program. For over twenty years the Horticulture Department was allowed to have its own groundskeeper. This person did all of the specialty pruning for our plants so the students could see the proper plant care and growth habits. Additionally, this person was also involved in the general maintenance of the nursery, troubleshooting and fixing irrigation issues, application of herbicides to control weeds, and a multitude of other things. Over the last several years the hours of the groundskeeper were reduced, until this past year they were completely eliminated. Since this time the overall plant quality in the department become an eyesore. There are weeds everywhere, the plants are overgrown, and plants have died because they don't get irrigated. We used to be proud of the facility because of the plant material, now it is just embarrassing.

2.5 Describe any laws, regulations, trends, policies, procedures or other influences that have an impact on the effectiveness of your program. Please include any other data (internal or external) that may be relevant to student achievement, learning, and trends within your Basic Skills, CTE, or Transfer Education programs. While we hate to admit this, with the legalization of marijuana in California, we have a student population eager to learn the science of hydroponics. This course has been popular with students, and since its inception has attracted new faces to the program. Just to be clear, we grow tomatoes in our facility! Another positive trend is the fact that people want to grow their own food. Community gardens have been constructed in cities and schools, and restaurants want fresh locally and organically grown food and spices. We have the curriculum that meets the needs of this community of people. The other major factor that has had an impact on the program is drought. The recent drought has influenced the landscape to the typical California home. Cities were giving incentives to remove lawns and penalties for not reducing water use. This has opened up other opportunities for the department. We teach water conservation, collection and other sustainable methods of growing plants in the permaculture class. We have also added a new irrigation class (Drip Irrigation) into the curriculum. We have been preaching the benefits of using drought tolerant plants in the landscape for years, and are selling more and more of them at our plant sales. Searching for new drought tolerant plants is constantly occurring in the department.

2.6 Provide any other data that is relevant to your self-study.

Since our last program review we have been able to add additional classes into the offerings, and get funding to teach these new classes. Funding sources included Strong Workforce, various grants, and some from the college.

3.0 Strengths, Weaknesses, Opportunities, Challenges (SWOC)

Based on your analysis in 2.1 through 2.6, answer the following questions:

3.1 What are the strengths of your program? The full time faculty of the Horticulture department have been directly involved in the ornamental plant industry. We have real world experience in propagating, growing, and selling plant material both wholesale and to the public. We have dealt with regulatory agencies at both the state and local level. We are familiar with the best practices when it comes to nursery design, management and operation. We stay current in our field by visiting nurseries, arboretums, and interacting with professionals in the industry. We bring this experience to the class every day. Our past experiences whether good or bad will help our students as they enter the work force or start a business. We are dedicated to help our students achieve their goals.

Our internship program is another strength of the program. Each year we hire 4-5 students to work as interns. The interns gain valuable experience and skills that will allow them to work in the nursery industry. They also learn to be responsible and work as a team. The proceeds from the plant sales fund our internship program. Our laboratory technician Diane Komos oversees the day to day activities of the interns. Diane is the reason for the success of the internship program. Under her direction and guidance, we always have plenty of quality plant material to sell at our plant sales.

The Horticulture department has all the buildings and facilities that a production nursery would have. We also have an incredible amount of specimen plants that are used in many classes in our program. These are additional strength of the program.

Finally, the department offers many opportunities to earn various degrees, certificates, skills and experience. Our Aquaponics/Hydroponics facility is unique to area. This curriculum and facility has allowed us to attract new students, and outside funding from grants and Strong Workforce that we may not have received otherwise.

3.2. What are the weaknesses of your program? As mentioned in our strengths the grounds of the Horticulture department serve as an outside laboratory for our curriculum. This area is used for all of our plant identification classes, most of the other classes will spend extensive amounts of time outdoors in the facilities and buildings. We attract hundreds of individuals to the facility during our plant sales, Fullerton Beautiful garden tour and other activities. The groundskeeper for the department has been removed from the facility leaving no one to take care of the plant material. The grounds are now unsightly and full of weeds.

The physical buildings are old and in disrepair, the passage of Measure J will hopefully allow the facility to be upgraded to current standards and meet ADA requirements

The Horticulture department currently has 45 classes in the catalog. This large numbers of classes and the small number of full time faculty has made assessing CSLO's challenging. Many classes are taught

infrequently, and others taught by adjunct faculty. To say the least, some of these classes have fallen through the cracks in terms of assessment. Even when classes are assessed, it is hard to have meaningful discussions about the results when you are the only one teaching the class. This is not an excuse, just an observation.

The large number of courses also makes six-year curriculum review a challenge.

While we have lots of plant material in the department, we still have to travel around campus to find additional specimens. Each plant identification class covers close to 200 different plants during the course of the semester. Many plants on campus have been removed, have died, or have been pruned so poorly they are not suitable for use in our classes. We have to travel into surrounding neighborhoods, and take fieldtrips to find sufficient plants.

3.3 What opportunities exist for your program? The opportunities for the department are in the advances to greenhouse coverings, structural design, and automation. As we look upgrade our greenhouse and facilities, we need to upgrade to current technology. More automation and mechanization are the norm. Being able to monitor the control the greenhouse remotely by smart phone are technologies available now. Students need to learn and experience current technology not from 20 years past. Take a trip to our neighboring university CSU Fullerton. There you can see water conserving landscape design. We need to make more efficient use of water not only in the Horticulture department but campus wide.

As the economy improves we usually see a downturn in enrollment. We need to reach out to our feeder high schools to attract potential students.

We will continue to look for opportunities to promote our Aquaponics course. This is, and can be a big draw since it is not a common course at most colleges. Homeowners, schools, and restaurants are interested in growing their own vegetables. This is evidenced by our annual tomato sale, if we can attract a fraction of these people we could increase enrollment in several courses. Adding the pass/ no pass option into some of our curriculum might help this endeavor.

Our Biotech program in the Biology department will be offering a tissue culture class. Partnering with them would allow us to propagate additional plant material while students hone their skills in the lab. We would also consider adding some of these courses as optional courses for several of our certificates.

3.4 What challenges exist for your program? As a small department our main challenge is to find adjunct faculty that are qualified, reliable and available to teach in the evenings and or Saturdays. This will allow us to offer more courses / year helping students to complete programs in a shorter time frame. This might also free up full time faculty to work on other projects in the department, as well as the curriculum and SLO issues.

We have recently been awarded Strong Workforce money to upgrade our large greenhouse. We will probably have to move everything out from the house to accomplish this. We have also been promised that the whole department will be renovated. The challenge will be to continue teaching our classes as construction occurs in the department, there is no swing space for greenhouses and other outbuildings. Preserving as much our plant material is also important for our plant identification classes. Trying to keep up with current technology will always be a challenge for a vocational program such as ours

4.0 Student Learning Outcomes (SLO) Assessment

4.1 List your program level SLOs and complete the expandable table below.

	Program Student Learning Outcomes (PSLOs)	Date Assessment Completed	Date(s) Data Analyzed	Date(s) Data Used For Improvement	Number of Cycles Completed
1.	Upon completion of courses leading to the Landscape Design and Management certificate students will be apply horticultural concepts to real-world problems and solutions	Fall 2014-Spring 2017	Continuously during cycle	Fall 2017	This is 1 cycle
2.	Upon completion of courses leading to the Greenhouse and Nursery Production certificate students will be able to apply horticultural concepts to real-world problems and solutions	Fall 2014-Spring 2017	Continuously during cycle	Fall 2017	This is 1 cycle
3.	Upon completion of courses leading to the A.S. in Landscape Management students will be able to identify plants, abiotic components, and horticulturally-significant insects	Fall 2014-Spring 2017	Continuously during cycle	Fall 2017	This is 1 cycle

4.2 Assessment: Complete the expandable table below.

Program Student Learning Outcomes Assessment for Instructional Programs at Fullerton College			
Intended Outcomes	Means of Assessment & Criteria for Success	Summary of Data Collected	Use of Results
1. In the Landscape Design and management certificate students understood how to make application from course material real scenarios	Assessed using CSLOs from required courses. Common questions, samples and problems on exams	89% of the assessed students demonstrated proficiency. We had very low assessment of SLOs last cycle, so we really have no reliable data for comparison	Looking at the data, one class in particular had only a 62.5% success rate. Identifying this class and the methods used to evaluate SLOs would be a starting point for potential improvement Overall the faculty are satisfied with the results
2. In the Greenhouse and Nursery production certificate students understood how to make applications from course material to real scenarios	Assessed using CSLOs from required courses. Common questions, samples and problems on exams	66.7% of the students demonstrated proficiency. We had very low assessment of SLOs last cycle, so we really have no reliable data for comparison	For this certificate it appears only two of the required classes were assessed during this cycle. Both had low success rates. Identifying these courses and the assessment methods

			will be conducted to determine what changes can be made either in instruction or assessments to improve the outcome. The faculty are not satisfied with this outcome
3. In the Landscape Management A.S. we selected the lowest of the 3 PSLOs. Students will be able to identify plants, abiotic components, and horticulturally-significant insects	Assessed using CSLOs from required courses. Common questions, samples and problems on exams	77% of the students assessed demonstrated proficiency We had very low assessment of SLOs last cycle, so we really have no reliable data for comparison	The range of proficiency in the classes mapped to this PSLO is from 89% to 60 %. Identifying the classes at the lower end of the scale will help us to improve the overall # of students proficient in the PSLO. Identification of plants and insects is challenging.

4.3 What percentage of your program level SLOs have ongoing assessment? Comment on progress/lack of progress.

100% of our PSLOs have on going assessment. This has been a vast improvement from our previous program review, we still have room to improve as we strive to asses all of our courses as they rotate through the class schedule. ELumen has become a useful tool in understanding this data.

4.4 How has assessment of program level SLOs led to improvements in student learning and achievement? Since we had such poor participation of both CSLOs, and PSLOs during our last program review, we will have to use this cycle's data as a benchmark. We have now had data to discuss, and can see that particular courses have low success rates. Once we identify what these courses we can then look at the overall assessment process. We are also looking at modifying CSLOs as we move through our 6-year curriculum review process.

4.5 How has assessment of program-level SLOs led to improvements in transfer or certificate/degree awards? Many students are not looking to transfer and we do not seem to collect that data as an institution. We do have a higher number of degrees and certificates awarded than our peer institutions, but since we have really only begun to collect PSLO data I doubt we can make any meaningful connections. I think the greatest potential to increase certificates and degrees is to do a better job at scheduling courses, (SAP#1) and finding qualified adjuncts to teach courses where the full time faculty lack proficiency.

4.6 What challenges remain to make your program level SLOAs more effective?

The biggest challenge for us is being a department of 2 and having 45 active courses in curriculum. Some of these courses will be deleted during the 6-year review process, many others are taught by adjunct faculty. Getting everyone involved in this process is challenging. Seeing the reports that were generated by our SLO coordinator gives us a tool to drive discussion and hopefully improvement. It all

has to start at the CSLO level. During this last cycle we offered 33 different courses. Our goal is to assess all CSLOs in the courses that are offered infrequently, and at least 1 CSLO in the courses that are offered on a regular basis.

This is the first self-study to utilize eLumen for CSLO/PSLO analysis. The faculty are still learning to utilize its full potential, and learn more about what is and is not working in our courses. This program review template was created when the campus used a paper-based system to track performance. Perhaps the Program Review Committee should take a look at modifying Section 4 to more directly link to eLumen reports.

5.0 Evaluation of Progress Toward Previous Goals/SAP's (Future program review templates for this section will identify "previous goals" as "previous *strategic action plans*"-- SAP's.)

5.1 List the goals from your last self-study/program review.

- SAP #1 Create a Campus STEM Resource Center
- SAP #2 Outreach
- SAP #3 Create a 3-4 year plan of Horticulture course offerings
- SAP #4 Certificate program for Disney Employees
- SAP #5 Improve technology in classrooms
- SAP # 6 Create a Permaculture Certificate Program
- SAP# 7 New Horticulture Curriculum
- SAP # 8 Repair and Restore the Native Plant Garden

5.2 Describe the level of success and/or progress achieved in the goals listed above.

SAP#1: Create a Campus STEM Resource Center

- Campus hired full-time STEM counselor
- STEM website created
- Some duties of proposed STEM Director are being performed by faculty on an *ad hoc* basis
 - Developed mailing list for biology majors
 - Organized Biology Majors Mixer
 - Informal mentoring and advising students
 - Division seminar series
 - Developing undergrad research program

SAP #2: Outreach and Education to the local community and High Schools

- Created a small scale aquaponics display at the Green Scene at the Fullerton Arboretum to promote our new aquaponics course at the Horticulture Department
- We have had tours for the general public of the Aquaponics facility at all of our most recent plant sales
- We had a lecture at our last plant sale about landscaping and replacing your lawn with California native plants by one of our adjunct faculty members
- Local High School administrators visited the Horticulture department and the Aquaponics facility
- We host a table during the annual KinderCaminata event each spring
- We Created a Plant Science Club
- We donate left over plant material to local schools and community gardens
- We did not get funding for a vehicle so all outreach with the exception of the Green Scene has been done on site

SAP #3 Create a 3-4 year plan of Horticulture course offerings

- With the addition of new courses, and starting our six-year review where some courses will most likely be deleted we decided to wait before this process is completed to create a schedule of course offerings We currently have 44 courses in the catalog. Orange Coast College by comparison has 27

- We have been told that if this schedule is created and the courses are part of a certificate then they will not be cancelled due to low enrollment, which is why some courses are offered on an infrequent basis.

SAP #4 Certificate program for Disney Employees

- After several meetings and a visit to Disneyland, the resort management seemed not interested to pursue any further discussions about this endeavor

SAP #5 Improve technology in classrooms

- Room 1603 did receive an upgraded ceiling mounted projector, and better control from the instructor workstation to switch from one input to another.
- No chords in the way
- There is still no Doc camera in room 1603
- We only have a toggle switch that goes from PC to Laptop

SAP # 6 Create a Permaculture Certificate Program

- The Permaculture Design Certificate course was offered during Fall of 2016 and Spring of 2017.
- A small food forest lab was planted to demonstrate energy recycling, nutrient cycling techniques, water harvesting methods, swale technology, hugelkulture, and symbiotic plant guilds.
- A cob oven was designed and built to demonstrate how primitive technologies intersect modern application and usage of materials.
- A budget is required to purchase supplies to keep building and expanding the food forest to keep the lab operational.
- Cross collaboration between Principles of Horticulture 1 and 2 keep the food forest lab in operation during periods when the Permaculture course is not being offered.
- The food forest lab was used for demonstration purposes for school tours, and for other courses within the Natural Science Department.
- Existing greenhouse structures are on schedule to be replaced per the Strong Workforce Grant 2017/2018.
- Outdoor lighting was installed and is operational in the horticulture lab area.
- Collaboration with the local chapter of the California Rare Fruit Growers Association resulted in numerous scholarships for students in the Horticulture Program for 2016/2017. The scholarships will be ongoing.

SAP# 7 New Horticulture Curriculum

- The new course: Hydroponics and Aquaponics was successfully launched Fall 2016 and taught again Spring 2017.
- A new Hydroponic and Aquaponics lab was designed and built with generous support from the Natural Science Department and Innovation Grant money.
- The Aquaponics lab has been used as a research tool for undergraduate students from the Oceanography Department when the formal class is not being offered.
- Numerous tours for were provided for different departments of the campus, the public, and for the President's office. Students were featured in various campus communications highlighting their newly acquired aquaponics skills.

- Ongoing budget needs to be allocated to keep the lab operational as no funds were allocated for equipment replacement for air pumps, water pumps, growing rafts, filters, fish, fish food, lighting and seeds.
- Additional courses are making their way through the curriculum development process.

SAP # 8 Repair and Restore the Native Plant Garden

- The electricity to the pump has been restored
- The stream area has cracks that need patching
- We will continue to address issues and get the water feature working

5.3 How did you measure the level of success and/or progress achieved in the goals listed above?

Several of the SAP's #3, #4 had no progress. SAP #3 will be rolled over into this program review because we feel it is important for students and counselors to develop an education plan.

SAP # 1 was partially fulfilled by the counseling department hiring a STEM counselor. SAP #5 has been completed, this should be sufficient until the building is upgraded.

SAP #8 the native plant garden renovation will proceed. We will do what we can with or without funding. We have restored the electrical supply to the pump that operates the water feature. This is the only thing that has been accomplished so far.

SAP#2 we are always doing some sort of outreach in the department through our plant sales and other activities listed above. We have not visited our local high schools.

SAP#6 Enthusiasm for the Permaculture course resulted in the course being offered back to back semesters. Normally there is a one to two semester gap between course offerings. Additionally, collaboration with a local chapter of the California Rare Fruit Grower Club resulted in plant donations and student scholarships. Students that enrolled in the permaculture course that had never taken any of our horticulture courses continued to take courses the following semester.

SAP#7 New curriculum offers students more diversity into the umbrella of horticulture, resulting in wider career choices. The Hydroponic/Aquaponics course provided students with the knowledge to seek beyond entry-level jobs in the emerging hydroponic job market. Several students were hired immediately after the course in high tech hydroponic jobs. These opportunities would probably not have been available to the students without the coursework from this class.

5.4 Provide examples of how the goals in the last cycle contributed to the continuous quality improvement of your program.

SAP #5 Upgrades to the technology in room 1603 has made a difference in our students' ability to see the projected images and video more clearly from the ceiling mounted projector. The monitor has better resolution, and is easy to operate. There are no cords on the floor for the instructors to step on.

SAP#6 The permaculture program was offered for the first time in both the Fall 16 and Spring 17 semesters. Both classes were full, and students who completed the course earned a permaculture certificate

SAP#7 Develop new horticulture curriculum, this was completed, the permaculture class was one of the courses, and the Aquaponics/Hydroponics was another. This class was also offered in the Fall 16 and Spring 17 semesters. We received funding to build the aquaponics facility and it was completed in the summer of 2016. This class and facility received a lot of attention from the administration, and

community. It is being used this semester by students doing undergraduate research under the supervision of Sean Chamberlin and Valerie Loew.

5.5 In cases where resources were allocated toward goals in the last cycle, how did the resources contribute to the improvement of the program? The resources used to build the Aquaponics facility put the Fullerton College Horticulture program on the map. This program garnered a lot of attention and additional monies were awarded from various grants and Strong Workforce. This program led to new students. These students just didn't take the Aquaponics class; they have continued on taking various horticulture classes.

5.6 If funds were not allocated in the last review cycle, how did it impact your program? There were no real negative impacts to the program due to lack of funding. Several of the SAP's required no resources. The lack of funding for outreach was offset by lots of publicity from the aquaponics facility. We feel that we should still try to connect with our feeder schools. Especially Fullerton High School which is right next door. A vehicle would still be a valuable asset to the department.

6.0 Strategic Action Plans (SAP) [formerly called Goals (6) and Requests for Resources (7)]

Using the tables below, list the strategic action plans (SAPs) for your program. These plans should follow logically from the information provided in the self-study. Use a separate table for each SAP.

SAPs for this three-year cycle:

STRATEGIC ACTION PLAN # 1		
Describe Strategic Action Plan: (formerly called short-term goal)	Create a 3-4 year plan of Horticulture course offerings	
List College goal/objective the plan meets:	College Goal #: 1 Fullerton College will increase student success Objective #: 3 increase the number of degrees and certificates awarded Objective # 4 increase the number of transfers Objective #5 increase the persistence rate of students	
Describe the SAP: (Include persons responsible and timeframe.)	<ul style="list-style-type: none"> The Horticulture faculty will create a table that lists the current courses and when they will be offered 3-4 years into the future This will allow students to create an academic plan for transfer This will allow students to have a better idea when they might complete a certificate This information will be updated each academic year and posted on the website This timeline should be completed once courses are identified for deletion The pool of instructors capable of teaching courses also needs to be addressed The department faculty Jeff Feaster and Valerie Loew will be responsible for completion of this plan Spring 19 is the target for completion 	
What <i>Measurable Outcome</i> is anticipated for this SAP?	<ul style="list-style-type: none"> Students will be able create an academic plan Adjunct faculty will know when their courses will be offered Faculty will be able to address the equipment and supply needs of courses in accordance with the budgeting and resource allocation timelines An increase in degrees and certificates awarded Increase number of transfers Increase the persistence rate of students in the program 	
What specific aspects of this SAP can be accomplished without additional financial resources?	This plan can be accomplished without additional funding	
If additional financial resources would be required to accomplish this SAP, please complete the section below. Keep in mind that requests for resources must follow logically from the information provided in this self-study.		
Type of Resource	Requested Dollar Amount	Potential Funding Source
Personnel		

Facilities		
Equipment		
Supplies		
Computer Hardware		
Computer Software		
Training		
Other		
Total Requested Amount		

STRATEGIC ACTION PLAN # 2		
Describe Strategic Action Plan: (formerly called short-term goal)	Repair and Restore the native plant garden, water feature, greenhouse, and buildings for undergraduate research	
List College goal/objective the plan meets:	<p>College Goal: Goal #1: Fullerton College will increase student success. Goal #2: Fullerton College will reduce the achievement gap Goal#3 Fullerton college will strengthen its connections with the community</p> <p>Objective #: Objective 1.2: Increase course retention and success. Objective 1.3: Increase the number of degrees and certificates awarded. Objective 1.4. Increase the number of transfers. Objective 1.5: Increase the persistence rate of students. Objective 2.2-4: Increase success, retention and persistence of Hispanic and African-American students by 2% Objective 2.5: Increase the number of students participating in STEM activities Objective 3.4: Increase the funding capabilities of the college Objective 3.5: Increase engagement of the college with the community through college events, community services and other partnerships</p>	
Describe the SAP: (Include persons responsible and timeframe.)	<p>This project would benefit both the Horticulture and Biology programs. The following list includes descriptions of how both departments will benefit from this renovation</p> <ul style="list-style-type: none"> • Renovation of the greenhouse will allow the faculty and staff of the Natural Sciences to grow plant material to be used in the biology courses • Renovation of the greenhouse would give students additional space for research projects • Renovation of the greenhouse may provide an area to house plant material when the Horticulture department needs additional space during the renovation • Restoring the water feature to become operational will allow 	

	<p>it to be used for student research</p> <ul style="list-style-type: none"> • Restoring the water feature will add to the overall aesthetics of the area. • The water feature and surrounding plant material will be used as an additional outdoor laboratory for the ecology class to study the population size of mosquito fish, and plant adaptations • Additional plant material added to the garden will showcase the beauty of California native plants and will be an area for the general public to see how these plants can be used in the landscape • The renovation of the buildings will provide additional space to house the ant colonies and prepare specimens from our proposed undergraduate research • Expand our capability to mentor students, and obtain greater support for research activities, so that more students may take advantage of research opportunities. • This area can be used as an additional tool for outreach for incoming students, like the Science Department open house. • Additional plant material will be used in the plant identification classes offered by the Horticulture Department of Fullerton College. • Plant material can be used as a source of propagation material for the Horticulture Departments plant sales • A new irrigation system with micro emitters and a smart controller will be used to water the plant material and reduce runoff • Irrigation that is ET based can be used as a demonstration for the public and campus as we move towards increased water conservation and sustainability on this campus. • Installation of a low voltage LED lighting system to make the area more aesthetically pleasing in the evening • Pursue outside funding sources as we increase undergraduate research opportunities <p>Our vision is to make the native plant area and buildings a usable space for students and faculty. This area can enhance the classroom experience and provide students an area for research. The Horticulture program offers students a wide variety of classes. Many of these classes have a laboratory component where students actually work on projects within the department. This area would provide additional projects for the irrigation class, landscape lighting class, and the landscape management class.</p> <p>The electricity to the water feature has been restored, the pond has cracks that need repair, but could be operational in the Spring 18.</p> <p>The irrigation system upgrades can be a class project for the Horticulture irrigation class that will be offered next semester.</p>
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	Pruning and removal of some trees will have to be coordinated with facilities. Jeff Feaster and Ken Collins are the responsible parties. Work on projects that do not need funding will begin during the winter break, the irrigation class and landscape management class can begin projects in the Spring 18 semester
What <i>Measurable Outcome</i> is anticipated for this SAP?	<ul style="list-style-type: none"> • Increased course retention and success in Horticulture courses. • Increased number of degrees and certificates awarded. • Increased number of transfers. • Increased persistence rate of majors' students. • Increase engagement of the college with the community through college events, community services and other partnerships • Increased number of students participating in STEM
What specific aspects of this SAP can be accomplished without additional financial resources?	The area can be maintained by our student clubs as activities under the supervision of science department faculty, the Horticulture classes can also prune, rake and remove plant debris from the area in coordination with the ground keepers. Students are willing to help make this a usable space. Patching the stream can be done for under \$100.00.

If additional financial resources would be required to accomplish this SAP, please complete the section below. Keep in mind that requests for resources must follow logically from the information provided in this self-study.

Type of Resource	Requested Dollar Amount	Potential Funding Source
Personnel		
Facilities	\$10,000.00	College Planning & Budget Steering Committee
Equipment	\$4000.00	College Planning & Budget Steering Committee
Supplies	\$1500.00	Natural Science
Computer Hardware		
Computer Software		
Training		
Other		
Total Requested Amount	\$15,500.00	

STRATEGIC ACTION PLAN # 3

Describe Strategic Action Plan: (formerly called short-term goal)	Create a Groundskeeper position for the Horticulture Department
List College goal/objective the plan meets:	<p>College Goal #1: Fullerton College will increase student success</p> <p>College goal #3: Fullerton College will strengthen connections with the community</p> <p>Objective #:</p> <p>Objective 1.2: Increase course retention and success.</p> <p>Objective 1.3: Increase the number of degrees and certificates awarded.</p> <p>Objective 1.4. Increase the number of transfers.</p> <p>Objective 3.4: Increase the funding capabilities of the college</p> <p>Objective 3.5: Increase engagement of the college with the community through college events, community services and other partnerships</p>
Describe the SAP: (Include persons responsible and timeframe.)	<p>The Horticulture department has a long history of having a dedicated groundskeeper to take care of the extensive plant material in the department. Over the last several years the hours of our groundskeeper have been slowly reduced to zero. There have been several retirements of groundskeepers that have not been replaced. We propose that a groundskeeper be hired for the Horticulture department that would not be part of M&O.</p> <p>An electric flatbed cart would be required to transport materials to and from the 1600 and 400 buildings.</p> <p>This cart would also be used the day to day horticulture operations</p> <p>This cart would also be used for the horticulture department groundskeeper position to haul trash to the dumpster</p> <p>To be able to attract new students, a program has to have something to offer. We have many classes and programs to offer students, but unfortunately the department looks like it is ready to close. The classroom /office building and the associated deck is in terrible shape as well as the mist houses, greenhouses and most of the outbuildings.</p> <p>Fortunately, the Horticulture facility is due to be renovated.</p> <p>In spite of the old buildings we always had beautiful landscaping. When you came to the department you looked past the buildings and noticed the plant material. Now the landscape looks like the buildings. What does it say about a horticulture program that can't take care of its own landscape? Isn't this what we do? In real estate before you sell a house you spruce up the landscape, we are trying to sell a program. We want to attract students; we need to fix our landscape.</p> <p>The groundskeeper position would report to the horticulture faculty</p>

	<p>and staff. The groundskeeper would be in charge of maintaining the existing plant material, trouble shooting irrigation problems. Please see the NOCCCD description for a groundskeeper in the appendix for a complete list of duties. The groundskeeper would also assist the laboratory technician when necessary, and help in the preparations for the plant sales.</p> <p>We would like this position to be filled as soon as possible</p> <p>Persons responsible are Jeff Feaster, Valerie Loew and Diane Komos</p>	
What <i>Measurable Outcome</i> is anticipated for this SAP?	<p>Better plant quality for our plant identification classes</p> <p>Attract more students to the program</p> <p>Additional students will increase the certificate and transfer rates or the program</p> <p>Strengthen contacts with alumni</p> <p>Strengthen partnerships with local businesses and industry</p>	
What specific aspects of this SAP can be accomplished without additional financial resources?	When appropriate courses are offered, it can be part of the lab curriculum	
<p>If additional financial resources would be required to accomplish this SAP, please complete the section below. Keep in mind that requests for resources must follow logically from the information provided in this self-study.</p>		
Type of Resource	Requested Dollar Amount	Potential Funding Source
Personnel	5387.00/mo (\$64,644)	District/College funding
Facilities		
Equipment	\$7500 , 6 ft. electric flatbed cart	College funding
Supplies		
Computer Hardware		
Computer Software		
Training		
Other		
Total Requested Amount	\$72, 144	

STRATEGIC ACTION PLAN # 4

Describe Strategic Action Plan: (formerly called short-term goal)	Add Biology 196 Tissue Culture Methods to Horticulture Certificates/ collaboration in growing plant material
List College goal/objective the plan meets:	College Goal #: 1 Fullerton College will increase student success College Goal #:2 Fullerton College will reduce the achievement gap Objective #: 1.3 Increase the number of degrees and certificates awarded Objective 1.4 Increase the numbers of transfers Objective 1.5 Increase the number of students participating in STEM activities Objective 2.5 Increase the number of students from underrepresented groups participating in STEM
Describe the SAP: (Include persons responsible and timeframe.)	We propose to partner with the Biotech program to provide plant material and space to grow plant material for the Tissue culture methods class. Hopefully the biotech program will be housed in the new STEM building that will be located in the current Horticulture facility. This collaboration will benefit both programs. Tissue culture is a plant propagation technique used to mass produce plants, it requires specialized equipment and skills that this class and its prerequisite provide. We would like to add this course to several of our existing degrees and certificates as a restricted elective. The biotech courses might gain additional students from the Horticulture program who are interested in adding this technique to their skill set. The Bio 196 course would be added to the following; Greenhouse and Nursery Production Certificate Ornamental Horticulture Certificate Ornamental Horticulture Associates Science Degree
What <i>Measurable Outcome</i> is anticipated for this SAP?	Provide an additional skill set to Horticulture students Make students qualified for high end nursery production jobs Grow additional plant material Increase students participating in the Biotech courses Increased publicity for the Horticulture program
What specific aspects of this SAP can be accomplished without additional financial resources?	The Biology 196 class can be added to the certificates and degrees as part of our 6-year curriculum which is currently in progress

If additional financial resources would be required to accomplish this SAP, please complete the section below. Keep in mind that requests for resources must follow logically from the information provided in this self-study.

Type of Resource	Requested Dollar Amount	Potential Funding Source
Personnel		
Facilities		
Equipment		
Supplies		
Computer Hardware		
Computer Software		
Training		
Other		
Total Requested Amount	No Cost	N/A

7.0 Long Term Plans

Describe the long term plans (four-six years) for your program. Please consider future trends in your narrative. (Identifying financial resources needed for these plans is optional.) The long term plans for the program are to make sure the Horticulture department gets the upgrades that it has been promised. (Measure J) We have proposed not just a new horticulture classroom and office building, but a STEM center that would house the vocational programs of the Natural Sciences department. The 400 building has reached its capacity in its ability to grow, it has also exceeded its ability to provide office space. This new facility would alleviate some of these issues, and give the new Biotech a chance to increase, and a place to house its equipment, this will require much planning and discussion. From the perspective of the horticulture program we will need to be intimately involved in everything from greenhouse selection, controls, benches, covering, orientation, location etc. We are also concerned about preserving as much of the current landscape as possible, and disrupting the program, plant sales, and internship as little as possible.

8.0 Self-Study Summary

This section provides the reader with an overview of the highlights, themes, and key elements of this self-study. It should not include new information that is not mentioned in other sections of this document. The Horticulture department is proud of the progress it has made since the last program review. We have created a new aquaponics/hydroponic facility and courses that has attracted many new faces to the department. We are committed to continue to be innovative, and create new opportunities for our students. We have increased our CSLO and PSLO assessments, and have data to reflect on. We strive to assess our CSLOs at the 100 % level, and schedule meetings to have meaningful dialog about the results. Our opportunities lie in reducing curriculum, and creating an easier pathway for students to complete certificates by producing a course offering spreadsheet that allow students, counselors and adjunct faculty to better plan for future semesters. We have to get a handle on our curriculum and delete courses that are no longer viable or popular due to a changing industry. Much of the discussion has been about the building and its landscape. As instructors in a horticulture program it saddens us to see the grounds in its current state. We just don't have the time nor do we think it is part of our job to do this on our own time. When we have classes that are learning about pruning we gladly have them work in the landscape. This is not sufficient. This program review is about reflecting on how well we are doing in multiple fronts. We have seriously analyzed our performance in many areas and admit that we have fallen short. It is the Colleges job to take care of the facilities, yet they

do not in regards to the landscape of the Horticulture department. We hope these comments do not fall on deaf ears.

9.0 Publication Review

Fullerton College is committed to assuring integrity in all representations of its mission, programs, and services. As such, during the program review self-study process programs are required to document their publications (websites, brochures, pamphlets, etc.), when they were last reviewed, and denote the publication is accurate in all representations of the College and program missions and services. In the far right column please provide the URL where the publication can be accessed. If it cannot be accessed via the Internet, please contact Lisa McPheron, Director of Campus Communications at lmcpheon@fullcoll.edu.

Information on the college's graphic standards is available here: <http://news.fullcoll.edu/campus-communications/web-help/graphics/>.

Please identify when the publication was last reviewed, and confirm that it is accurate in how it represents the college. In the far right column please provide the URL where the publication can be accessed. If it cannot be accessed via the Internet, please provide a sample of the publication with your program review self-study.

For publications that you have identified as inaccurate, please provide the action plan for implementing corrections below.

Publication	Date last reviewed	Is the information accurate?	URL of publication

Routing & Response Page

Originator → IMS → Appropriate President's Staff Member → Program Review Chair

Originator

Electronically submit completed Program Review to Division Dean/IMS for review.

Appropriate Immediate Management Supervisor (IMS)

RESPONSE

Printed name of IMS

Title

Date

Select one and provide response if necessary. Forward electronically to appropriate Vice President's Office.

☐

I concur with the findings contained in this Program Review.

☐

I concur with the findings contained in this Program Review with the following exceptions (include a narrative explaining the basis for each exception):

Area of exception:

☐

I do not concur with the findings contained in this Program Review (include a narrative explanation):

Appropriate President's Staff Member

Acknowledging Receipt

Printed Name

Signature

Title

Date

Print Program Review, sign, and route both hard copy and electronic version to Program Review Chair.



Fullerton College Mission Statement

MISSION

Fullerton College advances student learning and achievement by developing flexible pathways for students from our diverse communities who seek educational and career growth, certificates, associate degrees, and transfer. We foster a supportive and inclusive environment for students to be successful learners, responsible leaders, and engaged community members.

VISION

Fullerton College will transform lives and inspire positive change in the world.

*Approved by Fullerton College
President's Advisory Council and
accepted by President Schulz
May 2017.*

VALUES

Community

We promote a sense of community that enhances the well-being of our campus and surrounding areas.

Diversity

We embrace and value the diversity of our entire community.

Equity

We commit to equity for all we serve.

Excellence

We honor and build upon our tradition of excellence.

Growth

We expect everyone to continue growing and learning.

Inclusivity

We support the involvement of all in the decision-making process.

Innovation

We support innovation in teaching and learning.

Integrity

We act in accordance with personal integrity and high ethical standards.

Partnership

We work together with our educational and community partners.

Respect

We support an environment of mutual respect and trust that embraces the individuality of all.


Responsibility

We accept our responsibility for the betterment of the world around us.

Appendix

KPI data

Table of Contents	Program Overview	Enrollments	Enrollment Details	Courses	Majors	Persistence (Slow to Display)	Completion	Faculty	De
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Key Performance Indicators:

Program Overview

*NOTE: An Academic Year combines the Summer, Fall, and Spring terms (e.g., Academic Year 2013 includes Summer 2012, Fall 2012, and Spring 2013).

View By:

Academic Year

Division

All

Program

Horticulture

Enrollments

	2013	2014	2015	2016	2017
Enrollments	378	390	363	371	344
Student Headcount	220	242	218	206	220
Course Success	65.9%	64.1%	67.5%	76.3%	68.0%
Course Retention	82.3%	79.7%	82.1%	86.0%	80.8%

Program Awards

(NOTE: These are total program awards, not unique students)

	2013	2014	2015	2016	2017
Degree	17	24	35	28	24
Certificate	4		4	3	

Sections

	2013	2014	2015	2016	2017
Active Sections	22	22	18	21	18
Average Section Size	17.1	17.6	20.3	17.7	19.1
Course Fill Rate	94.0%	92.4%	106.1%	83.6%	87.9%

Faculty

	2013	2014	2015	2016	2017
Total FTEF	5.6	5.2	4.9	5.6	5.5
WSCH per FTEF	329.8	322.6	340.8	306.1	351.9

Enrollment Data

Enrollment Data by Ethnicity

Year	2013	2014	2015	2016	2017
Hispanic	155	167	176	185	176
White	131	142	132	132	123
Asian	28	10	23	23	21
Amer. Indian / Alaska Native	1	8	3	3	2
Black / African American	19	13	5	9	4
Filipino	8	3	5		1
Native Hawaiian / Pacific Islander	1	1		1	
Two or More	11	18	9	10	9
Unknown	24	28	10	8	8
	378	390	363	371	344

Retention and Success Data

Retention and success by Gender and Ethnicity

Retention					
year	2013	2014	2015	2016	2017
Male	85.20%	78.40%	82.60%	85.00%	76.50%
Female	78.70%	82.00%	81.20%	87.60%	86.90%
Different / Unknown	50.00%	100.00%	83.30%	100.00%	100.00%
Asian-American	92.90%	100.00%	91.30%	87.00%	90.50%
African-American	89.50%	100.00%	40.00%	88.90%	75.00%
Filipino	12.50%	33.30%	80.00%		100.00%
Hispanic	80.00%	77.80%	81.30%	85.40%	77.80%
Native American	100.00%	50.00%	66.70%	0.00%	100.00%
Other Non-White	90.90%	83.30%	66.70%	80.00%	100.00%
Pacific Islander	100.00%	100.00%		0.00%	
White	81.70%	80.30%	84.10%	90.20%	82.10%
Unknown	100.00%	82.10%	90.00%	75.00%	75.00%

Success					
year	2013	2014	2015	2016	2017
Male	66.70%	62.00%	64.80%	73.70%	62.00%
Female	66.10%	67.70%	71.00%	81.00%	76.20%
Different / Unknown	37.50%	100.00%	83.30%	100.00%	100.00%
Asian-American	89.30%	100.00%	91.30%	82.60%	85.70%
African-American	73.70%	76.90%	40.00%	88.90%	50.00%
Filipino	12.50%	0.00%	40.00%		100.00%
Hispanic	63.90%	60.50%	65.30%	73.00%	60.80%
Native American	100.00%	50.00%	66.70%	0.00%	0.00%
Other Non-White	72.70%	61.10%	44.40%	70.00%	88.90%
Pacific Islander	0.00%	0.00%		0.00%	
White	63.40%	69.70%	71.20%	81.80%	76.40%
Unknown	75.00%	53.60%	50.00%	75.00%	50.00%

Peer Institution Data

			Fall 2014	Fall 2014	Fall 2015	Fall 2015	Fall 2016	Fall 2016
			Credit	Credit	Credit	Credit	Credit	Credit
			Retention Rate	Success Rate	Retention Rate	Success Rate	Retention Rate	Success Rate
Antelope Valley Total			96.74 %	79.35 %	86.57 %	68.66 %	85.23 %	79.55 %
	Non Distance Education Methods Total		96.74 %	79.35 %	86.57 %	68.66 %	85.23 %	79.55 %
		Horticulture-010900	96.74 %	79.35 %	86.57 %	68.66 %	85.23 %	79.55 %
Bakersfield Total			81.25 %	68.75 %	84.69 %	78.57 %	88.00 %	76.00 %
	Non Distance Education Methods Total		81.25 %	68.75 %	84.69 %	78.57 %	88.00 %	76.00 %
		Horticulture-010900	81.25 %	68.75 %	84.69 %	78.57 %	88.00 %	76.00 %
Modesto Total			85.71 %	60.71 %	90.00 %	76.67 %	69.23 %	46.15 %
	Non Distance Education Methods Total		85.71 %	60.71 %	90.00 %	76.67 %	69.23 %	46.15 %
		Horticulture-010900	85.71 %	60.71 %	90.00 %	76.67 %	69.23 %	46.15 %
Santa Barbara Total			90.99 %	77.68 %	88.89 %	81.48 %	88.78 %	73.66 %
	Non Distance Education Methods Total		90.99 %	77.68 %	88.89 %	81.48 %	88.78 %	73.66 %
		Horticulture-010900	90.99 %	77.68 %	88.89 %	81.48 %	88.78 %	73.66 %

PSLO Data



Fullerton College

SLO Performance Report

by SLO

The purpose of this report is to present the number and percent of assessment scores at each mastery level for each program or institution learning outcome for a given term(s) or assessment cycle(s) for a given department, program, or course group. You can also choose to show this information by course.

Department: Horticulture Dept.

SLOs: PSLO Class Greenhouse & Nursery Production Certificate

Courses: Greenhouse & Nursery Production Certificate

Date: 11/17/2017

Terms: Spring 2017, Fall 2016, Spring 2016, Fall 2015, Spring 2015, Fall 2014

PSLO: Apply horticultural concepts to real-world problems and solutions.

	Greatly exceeds expectations.		Exceeds expectations		Meets expectations		Does not meet expectations but developing		Does not meet expectations	
Fall 2014	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Spring 2015	0	0.00%	0	0.00%	17	70.83%	0	0.00%	7	29.17%
Fall 2015	0	0.00%	1	4.17%	15	62.50%	0	0.00%	8	33.33%
Spring 2016	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2016	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Spring 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Overall	0	0.00%	1	2.08%	32	66.67%	0	0.00%	15	31.25%



Fullerton College

SLO Performance Report

by SLO

The purpose of this report is to present the number and percent of assessment scores at each mastery level for each program or institution learning outcome for a given term(s) or assessment cycle(s) for a given department, program, or course group. You can also choose to show this information by course.

Department: Horticulture Dept.

SLOs: PSLO Class Landscape Design/Management Certificate

Course(s): Landscape Design/Management Certificate

Date: 11/17/2017

Terms: Spring 2017, Fall 2016, Spring 2016, Fall 2015, Spring 2015, Fall 2014

PSLO: Apply horticultural concepts to real-world problems and solutions.

	Greatly exceeds expectations.		Exceeds expectations		Meets expectations		Does not meet expectations but developing		Does not meet expectations	
Fall 2014	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Spring 2015	0	0.00%	0	0.00%	77	91.67%	0	0.00%	7	8.33%
Fall 2015	0	0.00%	1	4.17%	15	62.50%	0	0.00%	8	33.33%
Spring 2016	0	0.00%	0	0.00%	48	100.00%	0	0.00%	0	0.00%
Fall 2016	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Spring 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Overall	0	0.00%	1	0.64%	140	89.74%	0	0.00%	15	9.62%



SLO Performance Report

by SLO

The purpose of this report is to present the number and percent of assessment scores at each mastery level for each program or institution learning outcome for a given term(s) or assessment cycle(s) for a given department, program, or course group. You can also choose to show this information by course.

Department: Horticulture Dept.

SLOs: POLO Class Landscape Management Associate in Science Degree

Courses: Landscape Management Associate in Science Degree

Date: 11/17/2017

Terms: Spring 2017, Fall 2016, Spring 2016, Fall 2015, Spring 2015, Fall 2014

PSLO: Apply horticultural concepts to real-world problems and solutions.

	Greatly exceeds expectations.		Exceeds expectations		Meets expectations		Does not meet expectations but developing		Does not meet expectations	
Fall 2014	0	0.00%	0	0.00%	19	100.00%	0	0.00%	0	0.00%
Spring 2015	0	0.00%	0	0.00%	134	99.26%	0	0.00%	1	0.74%
Fall 2015	0	0.00%	0	0.00%	55	94.83%	0	0.00%	3	5.17%
Spring 2016	0	0.00%	0	0.00%	107	100.00%	0	0.00%	0	0.00%
Fall 2016	0	0.00%	0	0.00%	49	84.48%	0	0.00%	9	15.52%
Spring 2017	0	0.00%	0	0.00%	26	68.42%	0	0.00%	12	31.58%
Overall	0	0.00%	0	0.00%	390	93.98%	0	0.00%	25	6.02%

PSLO: Identify plants, abiotic components, and horticulturally-significant insects.

	Greatly exceeds expectations.		Exceeds expectations		Meets expectations		Does not meet expectations but developing		Does not meet expectations	
Fall 2014	0	0.00%	0	0.00%	13	86.67%	0	0.00%	2	13.33%
Spring 2015	0	0.00%	0	0.00%	15	60.00%	0	0.00%	10	40.00%
Fall 2015	0	0.00%	1	1.67%	50	83.33%	0	0.00%	9	15.00%
Spring 2016	0	0.00%	0	0.00%	25	89.29%	0	0.00%	3	10.71%
Fall 2016	0	0.00%	0	0.00%	70	72.92%	0	0.00%	26	27.08%
Spring 2017	0	0.00%	0	0.00%	25	78.12%	0	0.00%	7	21.88%
Overall	0	0.00%	1	0.39%	198	77.34%	0	0.00%	57	22.27%

PSLO: Demonstrate an understanding of the biology of plants, abiotic components, and horticulturally-significant insects.

	Greatly exceeds expectations.		Exceeds expectations		Meets expectations		Does not meet expectations but developing		Does not meet expectations	
Fall 2014	0	0.00%	0	0.00%	15	100.00%	0	0.00%	0	0.00%
Spring 2015	0	0.00%	0	0.00%	39	90.70%	0	0.00%	4	9.30%
Fall 2015	0	0.00%	0	0.00%	38	95.00%	0	0.00%	2	5.00%
Spring 2016	0	0.00%	0	0.00%	68	80.00%	0	0.00%	17	20.00%
Fall 2016	0	0.00%	0	0.00%	70	100.00%	0	0.00%	0	0.00%
Spring 2017	0	0.00%	0	0.00%	40	85.11%	0	0.00%	7	14.89%
Overall	0	0.00%	0	0.00%	270	90.00%	0	0.00%	30	10.00%