



**Academic Program Review  
External Reviewers**

**John Killion and Shawn Payne**

**Phillips Community College of the University of Arkansas  
Division of Applied Technology**

**Horticulture Operations Certificate of Proficiency**

**June 7 & June 10, 2021**

**External Reviewer's Signature**

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The report prepared by the External Reviewers will be used by the Arkansas Department of Higher Education (ADHE) to verify the student demand and employer need for the program, the appropriateness of the curriculum, and the adequacy of program resources. The report should not include a recommendation to ADHE on program continuation or program deletion.

# **Academic Program Review**

External Reviewers Report Template

## **Academic Program Review External Reviewers**

### **John Killion**

John Killion graduated from Arkansas State University with a Bachelor of Science degree in Physics and Math. Upon graduation, he began his career as a research analyst at Union Carbide, a uranium enrichment processing facility located in Paducah, Kentucky. In 1981, Mr. Killion relocated to West Helena, Arkansas, as the Plant Engineer for Helena Industries, a manufacturing facility and packaging plant for agricultural chemicals. He was promoted to Plant Manager and remained in that position until retirement.

John Killion is duly licensed in the state of Arkansas as an Electrician and a HVAC contractor. He also taught agriculture mechanics and courses as well as math and environmental workshops.

### **Shawn Payne**

Shawn Payne is the University of Arkansas Division of Agriculture County Extension Agent Staff Chair. He has worked for the extension service for 28 years assisting county clientele (farmers, chemical companies, ag business, and ag related businesses). with research information. He works with agriculture, family and consumer sciences, community development, and 4H Youth Development Program. He works extensively with farmers, agriculture mechanics and horticulture.

He holds a master's degree in general agriculture from the University of Arkansas at Fayetteville and earned his bachelors' degree from Southern Arkansas University at Magnolia in Agriculture Business.

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The External Reviewers written report must include a summary of each area examined and should provide examples that document the conclusions. The questions below should be used by the reviewers as a guide in preparing the summary for each area. Responses to the questions should not be simply “yes or no”.

### **I. Review of Program Goals, Objectives and Activities**

#### **A. Are the intended educational (learning) goals for the program appropriate and assessed?**

*Horticulture continues to evolve because of the changing technology, processes and materials used in the field. Students must compete in an ever-changing technological society. Therefore, to meet the projected workforce needs, it is essential that they acquire skills needed to obtain horticulture jobs. PCCUA seems committed to teach the skills in demand so the graduates can compete in the job market. Some of the general skill sets required include math, safety, use of tools, hydraulics and water systems, design, technology, and so much more.*

*The Horticulture Operations program Self-Study identifies that upon completion of the program students will be able to perform the following:*

- 1. Identify career opportunities in horticulture.*
- 2. Identify and practice safe use of tools, equipment and supplies used in landscape careers*
- 3. Demonstrate an understanding of the composition, fertility and biology of soil and plant growth*
- 4. Demonstrate skills in landscape design and techniques.*
- 5. Demonstrate a fundamental understanding of landscape maintenance.*
- 6. Demonstrate a fundamental understanding of hydraulics and irrigation, installation and water management practices*
- 7. Apply horticultural skills and knowledge*
- 8. Use computer software program applications relevant to the field*

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9. *Apply an understanding of plant identification, selection, use and maintenance of plant material.*
10. *Demonstrate proficiency at implementing the practices of sustainable landscape maintenance, turf management, and integrated pest management.*
11. *Identify common biotic and abiotic plant pests and disorders and develop strategies to manage them.*

*The Horticulture Program learning goals are appropriate and assessed. The Self Study Team told us that the college has started requiring curriculum maps for all faculty and that this will help improve course and program assessment. Based on a review of a curriculum map, it appears that all courses are assessed and outcomes are posted. The College wide effort to bolster program assessment is ongoing. A review of the program and courses indicates that the program encompasses all the elements needed for a horticulture foundation program.*

### **B. How are the faculty and students accomplishing the program's goals and objectives?**

*The Self Study identified that students accomplish meeting the learning goals by completing observable competencies. Students complete the following activities demonstrating competency with these tasks:*

- *Identify career opportunities in the horticulture industry*
- *Identify and practice safe use of tools, equipment and supplies*
- *Demonstrate an understanding of soil and plant growth*
- *Grow, and maintain plants in horticulture the lab environment*
- *Demonstrate an understanding of plant identification, selection, use and maintenance of plant material*
- *Identify and prescribe sustainable options in horticulture*
- *Identify common biotic and abiotic plant pests and disorders and develop strategies to manage them in an environmentally safe manner.*

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- *Apply horticultural skills and knowledge to operate various business entities found in the horticultural industry*

*As reviewers with expertise in horticulture, we believe that the term “develop” should be replaced with a word like identify or examine. See task below. We feel it is unlikely that these students would develop any strategies but they would study different strategies used.*

*“Identify common biotic and abiotic plant pests and disorders and develop strategies to manage them in an environmentally safe manner.”*

### **C. How is the program meeting market/industry demands and/or preparing students for advanced study?**

*Students graduating with a CP in Horticulture have a wide range of career options because there are varied occupational careers related to workers, management, marketing, and practice. The Self Study and site visit revealed that there are many different career paths that horticulture graduates are encouraged to take. The PCCUA graduates enter many kinds of horticulture related fields such as managing a garden business, working in fruit orchards, greenhouse work, working in flower and plant shops, and working in nurseries. Several students do independent landscaping services and gain employment at garden centers and nurseries. Some work with soil and pesticide jobs.*

*We felt that there probably isn't as great a local demand for these kinds of jobs. However, the courses are very important for those entering the field. It might benefit the College to provide a higher profile of what the program does to introduce students to the Agriculture field of study which is so broad and so is horticulture. We did not see a lot of evidence that the program was promoted in the way that it could be and if that were done, we believe that more students might participate in the program. Larger more urban areas certainly have many jobs for students seeking work. The PCCUA horticulture website lists jobs graduates gain as greenhouse worker, nursery worker, and recreational landscaping worker as well as industrial landscaping worker.*

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*The reviewers want to note that the job possibilities are more extensive and that might be good to share as a recruitment tool.*

### **D. Is there sufficient student demand for the program?**

*Based on a review of the Self Study and a site visit to the College, it appears that the Horticulture Operations program is designed to prepare students for occupations involving gardening, turf management, landscape design, and other kinds of plant operations. The program is well suited to prepare students interested in entering an agriculture program offered at a college or university.*

*The high schools served by PCCUA may have strong agriculture programs and it is likely that horticulture is integrated into that. Many students leaving high school have no opportunity to continue agriculture training. The Horticulture Operations programs which PCCUA offers, provide a much-needed orientation for many of those students and allows them to use the training as a foundation for other applied technology areas such as the Advanced Manufacturing program. Careers in horticulture tie students to the community. Based on information shared, graduates of the program often enter landscaping, turf management, outdoor recreation grounds and maintenance, and gardening occupations and many of them are self-employed.*

### **E. Do course enrollments and program graduation/completion rates justify the required resources?**

*The Self-Study and campus visit, allowed us to verify that the Horticulture Operations program is designed to prepare students for occupations involving gardening, turf management, landscape design, and other kinds of plant operations. The program is well suited to prepare students interested in entering an agriculture program offered at a college or university. However, after examining the courses offered. The reviewers think that when recruiting students,*

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*it may be useful to help them think beyond gardening and turf management for horticulture. There are many jobs dealing with chemicals used on crops, working with pesticides and fungi that a student with a horticulture foundation could seek and graduates would get those jobs.*

Program Students Enrolled	2020-21	2019-20	2018-19	Average # of Students Enrolled
<b>Horticulture Operations CP</b>				
AFLS 1012, Careers in Education	16	15	48	26.3
AFLS 1203, Intro to Plant Science	16	25	40	27
AFLS 2000 Principles of Horticulture Lab	12	21	20	17.7
AFLS 2003, Principles of Horticulture	12	21	20	17.7

Program Graduates	2021	2019-2020	2018-2019	Average # Graduates
Horticulture Operations	9	8	0	5.5

Note: The 2019-20 graduates actually completed in the fall of 2020 and are counted in the 2021 academic year.

## II. Review of Program Curriculum

### A. Is the program curriculum appropriate to meet current and future market/industry needs and/or to prepare students for advanced study?

*Yes, according to the course descriptions the courses do prepare students for work in the field or continued education in the major. The horticulture program is well rounded offering an overview of the career options, plant science, and principles of horticulture which has a lab so students can apply what has been learned in the classroom. The Self Study descriptions of the courses provides evidence that foundations of horticulture can be established in these four courses.*

#### Horticulture Operations

*AFLS 1012, Careers in Education-An introduction to career opportunities within the discipline of agriculture. The student will be provided career information through lecture, video and multimedia presentations. Required. Last offered Fall 2020.*

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*AFLS 1203, Intro to Plant Science-An introduction to the principles and factors of plant growth, structure, and development. Last offered Fall 2020.*

*AFLS 2000 Principles of Horticulture Lab-Horticulture lab with lab experiences, site visits will provide “hands on” experience and practical application of the skills and techniques learned in the classroom. Last offered Fall 2020.*

*AFLS 2003, Principles of Horticulture-Classroom and laboratory application of the principles of plant propagation and production, the handling and use of plants in landscaping and horticultural crop production. Practical application and site tours will be provided through the corequisite AFLS 2000. Last Offered Fall 2020.*

**B. Are institutional policies and procedures appropriate to keep the program curriculum current to meet industry standards.**

*Yes, based on what has been shared in the Self-Study and during the site visit, new programs, courses, modifications and deletions are initiated at the department or division level with faculty suggestions and recommendations. Faculty evaluates and discusses curriculum changes and submits recommendations to the division dean. These proposed changes are routed through a Curriculum Change Form to the Curriculum Committee of the Faculty Senate. Changes are then presented to the Instruction and Curriculum Committee for approval and inclusion in the college catalog and website. The Instruction and Curriculum Committee is a standing committee led by the Vice Chancellor for Instruction, and committee members include division deans, department chairs, Faculty Senate President, Senate representatives, and functional area supervisors. New Course Proposals are added through a standard process.*

*The PCCUA Board Policies and College Procedure Manuals included in the Self Study are very specific regarding the procedure to be followed for new course proposals as outlined in Administrative Procedure 420.02 This procedure is tied to PCCUA Board Policy 420: Curriculum Management Policy.*

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### C. Are program exit requirements appropriate?

*There are no exit requirements other than a student must maintain a C average to complete and all courses must be completed with a “C” grade. This was included in the Self Study and confirmed in the site visit.*

### D. Does the program contain evidence of good breath/focus and currency, including consistency with good practice?

*The Horticulture Operations Program introduces student to careers in horticulture, plant science. Five trends in Horticulture Operations have transformed instruction related to operations. One of the first trends mentioned in the Self Study is precision irrigation which allows farmers to start irrigation at almost any time from almost any place in the world. The introduction of the GPS to farming has made a significant difference in product output. The program introduces student to this technology. Secondly, yield monitoring has forced farmers to distinguish between handpicked crops and machine crops. While this can't be applied to all crops it is important for certain crops with huge acreage. The third trend taught in the program is the use of robotics. Much like the Ag Mechanics programs, robotics will be changing the future of farming which could result in the need for fewer farm workers. We have already seen this in large crop production like cotton, corn, and soy beans. This could be essential in the future with the dwindling number of people willing to do farm work. Fourth, the introduction of Bluetooth digital displays has been useful in allowing farmers to make smarter decisions related to crop rotation, protection, and during harvest season. Bluetooth isn't used much yet but it will be used in the future so it is good that students have some exposure to this technology. Evidence confirmed from the site visit reflected that students are introduced to this but are not actually using the technology. Finally, the College has just purchased several drones. Although the use of unmanned aerial systems is new in horticulture it has really been important in so many ways. In fact, it has really made crop scouting so much quicker and easier. Students will see many changes with the introduction of drones to plant management and s precision planting. One discussed with us was the danger of snakes on cotton, rice, and soybean fields poses no problem when using drones to do the scouting.*

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*There may be some opportunities to provide some training or camps/clinics in the summer. This would provide an opportunity to recruit more students. Additionally, the County Extension Service sponsors field days among agents. The specially designated days focus on one aspect of farming such as cotton, rice, soybeans, pests, and other topics. The instructors may want to incorporate these days into their schedule for students.*

**E. Are students introduced to experiences within the workplace and introduced to professionals in the field?**

*According to the Self-Study, currently, there are no practical or applied experiences and this was confirmed at the site visit. There are plans to do this in the near future because the faculty have designed options for two and four-week field studies.*

**F. Does the program promote and support interdisciplinary initiatives?**

*The Horticulture Operations program has been useful for students who plan to work in the agriculture industry. Students enrolled in this certificate program are not required to take general education courses. This program is closely tied to the Associate of Applied Science (AAS) in General Technology. In addition, those desiring an AAS in Construction can transfer these courses and the experience is useful for that degree.*

*This may be an opportunity to connect horticulture to some general education in botany, entomology, or biology promoting these college majors. There are so many people working in horticulture as soil specialist and plant pathology so a higher degree would be useful for those interested in this discipline.*

**G. Does the program provide respect and understanding for cultural diversity as evidenced in the curriculum, in program activities, in assignment of program responsibly and duties; in honors, awards and scholarship recognition; in recruitment?**

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*The chaos and disorganization in the world we live in makes it important that students entering any field feel drawn to that field and enjoy the work they do. It is important to advertise the program to all students but try to make sure that students entering the program have a desire to work in horticulture.*

*The Self-Study indicated that a portion of the faculty development has focused on culturally responsive teaching. It is important for faculty to understand and connect with groups of students based on student characteristics such as race, gender, socio-economic level, and disability. At the site visit it was shared that the College, in its attempt to diversify, is trying to look at certain majors which attract predominantly one gender or one ethnicity. For example, very few females select welding as a major, yet, data shows us that women make good welders. Many males do not select nursing, although those that do can earn a good living and have many career opportunities open to students who face barriers because of ethnicity, poverty, or even post incarceration. It is important to make students realize that horticulture is a good occupation for many. There is sometimes a stigma in the black community about horticulture work. But many of the most significant research and ground-breaking work was done at historically black colleges. Southern agriculture programs would not be where they are today without the efforts of George Washington Carver and people like him. The University of Arkansas at Pine Bluff is doing phenomenal work related to famine research and the shelf life of vegetation like melons and other crops. This research is very important to tackling world hunger. Visits to campuses showing people of color working in horticulture and sharing the history and impact of horticulture and plant science is important to integrate into the program.*

*The College has also promoted good teaching by providing workshops which improve assessment and teaching strategies. The specific emphasis on green technology and environmentally safe processes does reflect a level of respect and understanding about the world. The bottom line in this program or any program is that instructors need to instill self-respect and recognize who a student is and what that student can do. If all students are treated respectfully, issues about race, gender, and disabilities will disappear. Preparing students to*

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*enter a world where there may be concerns is useful and helps students develop a positive self-concept.*

### III. Review of Academic Support

#### A. Does the program provide appropriate quality and quantity of academic advising and mentoring of students?

*Based on the Self-Study and the site visit, evidence shows that PCCUA does a good job with advising. Both faculty and advisors advise students. The program supports are appropriate for academic advising and mentoring by faculty.*

*PCCUA Academic Advising- Every horticulture student is assigned an advisor who is familiar with the program and knowledgeable about program requirements, degree requirements, and college services. Advisors use an Early Alert system where faculty send referrals to advisors to resolve problems or issues with class attendance, tutoring, advising, or other needs. Most students have an email address and all students are provided a college email address to improve communication between the student and instructors as well as the college staff.*

*Student Support Services (SSS) is important to students. The SSS program supports students in their academics through advising, financial aid counseling, and advocacy.*

#### B. Does the program provide for retention of qualified students from term to term and support student progress toward and achievement of graduation?

*Recruitment at PCCUA involves a diversified strategy to enroll new students. The recruitment team, led by the Director of Enrollment Management, focuses recruitment efforts on public and private schools in Arkansas and Mississippi. The Phillips County public high schools are: Helena-West Helena School District, Marvell-Elaine School District, Lee High School, and the Barton School District. The private Arkansas high schools are: Marvell Academy, Lee Academy (Marianna, Arkansas), and Desoto School. The Arkansas County schools are Stuttgart School District and DeWitt School District. In addition, recruitment is pursued in Clarendon School District, Dumas School District, England Schools, Hazen Schools, Carlisle Schools, and private school Evangelical Methodist School. In addition, the team recruits*

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*from the Knowledge Is Power Program School (KIPP) located in Helena, Arkansas. In Mississippi, the recruitment team recruits' students from Clarksdale Public Schools and Clarksdale's private school. Retention and success of students is a priority at PCCUA.*

*One of the College's retention and success activities is the faculty initiated Early Alert System. The Early Alert System is an effort to contact and provide support to students who are in danger of failing because of nonattendance or a lack of preparation. With the Early Alert System, faculty members alert the student's advisors detailing the problem(s). The student success coordinator and/or the advisors contact the student and try to implement some intervention strategies. When possible, intervention is done within the first few weeks of classes increasing the possibility of the successful completion of the term.*

*The Secondary Area Technical Center students are actively recruited for completion of the Horticulture programs.*

*Student orientation is mandatory for new and returning students each fall semester to provide them with skills and resources to improve student success. Faculty office hour are posted and faculty utilize this time to meet with students one on one.*

*Cohort grouping is an approach to enrollment which has been extremely helpful in retention. This has always worked in Early Childhood Education and Allied Health so we are extending this model to other groups. One particularly effective grouping is designed to provide support for formerly incarcerated students called Transition Training Opportunity Program (TTOP). Of those completing the program, job placement and continued education options are high. Approximately 90% of that group of students opts for job placement rather than continued education.*

#### **IV. Review of Program Faculty**

##### **A. Do program faculty have appropriate academic credentials and/or professional licensure/certification?**

*Both instructors hold appropriate academic credentials to teach the certificate courses.*

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*James Branson has a BS in Agriculture at the University of Arkansas at Monticello. He has worked at PCCUA since 2014. Branson has been actively engaged in numerous youth programs in the summer and works with 4H, the Future Farmworkers of America, and Skills USA. He teaches in the Certificate of Proficiency program for Agricultural and Equipment Technology programs and the Certificate of Proficiency program in Horticulture Operations.*

*Chris Warwick has an AAS from PCCUA and a B.B.A from the University of Arkansas. She has taught for the College since 2018. She works with Skills USA and other student programs. Ms. Warwick has a background in manufacturing and industry and worked at Lennox Industries for many years before deciding to come to the College to teach. She teaches several other equipment programs and does all the forklift training for the College.*

### **B. Are the faculty orientation and faculty evaluation processes appropriate?**

*PCCUA faculty have an onboarding process called A Supervisor's Guide for New Employee Onboarding Guide. The process ensures that each new faculty member is assigned a person to serve as a mentor and that processes can be introduced to the new employee quickly and efficiently but new employees are reminded when work is due.*

*Three areas of faculty performance are evaluated: instructional delivery, instructional design, and course management.*

*Instructional Delivery - Faculty must demonstrate competency in instructional delivery which is measured using student evaluations and comments. A comprehensive student evaluation is administered by an impartial facilitator to two randomly selected classes each fall and spring semester. Faculty must have twenty students for the evaluation.*

*Instructional Design - Instructional design is measured by reviewing faculty teaching portfolios. Documents which faculty include in the teaching portfolio focus on syllabi, students learning outcomes, and assessment. College service, community service, and professional development activities are included in the portfolio also. The division dean, and*

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*a peer review committee evaluate the artifacts submitted for the portfolio review by faculty. A peer review committee composed of one faculty member selected by the instructor from his or her division, one faculty member selected by the division dean from the division, and one faculty member from another division selected by the Faculty Development Committee reviews the portfolio.*

*Course Management - Course management examines the instructors' interaction with students and faculty, submission of grades, reports, student documentation, other reporting functions, and classroom management.*

### **C. Is the faculty workload in keeping with best practices?**

*Full time faculty teach thirty points or its equivalent per semester. Thirty points is equivalent to fifteen credit hours which usually translates into four or five classes depending on the credit hours of the course being taught. This is in keeping with other community college workload practices.*

### **V. Review of Program Resources**

#### **A. Is there an appropriate level of institutional support for program operation?**

*There are numerous supports in place for students in the horticulture program. These supports are important for retention and completion.*

***Student Support Services (SSS)** -SSS serves low-income, first-generation college students, and individuals with disabilities evidencing academic need. It is designed to increase retention, graduation, and transfer rates of eligible students. Services include instruction in study skills, tutoring, transfer assistance, campus visits, advice and assistance in course selection, career exploration, and financial literacy.*

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**Students with Disabilities** - *Students can make an appointment to meet with a Disability Coordinator on the home campus as early as possible during a particular semester, preferably before a semester begins. A Disability Coordinator is located on each campus and these individuals also serve as advisors. Students may obtain an Application for Disability Services Form from the coordinator or online at [www.pccua.edu/studentswithdisabilities](http://www.pccua.edu/studentswithdisabilities).*

**Tutoring** - *Tutoring is available to students on each campus and that service can be accessed by contacting the Learning Center Coordinator. The College encourages the faculty to provide tutoring because it is difficult to find tutors in certain disciplines (science and math). It is also difficult to train and retain tutors.*

**Bookstore** - *The BBA Solutions Bookstore is located on each campus and can provide not only textbooks but also has classroom supplies, college apparel and gift items. Bookstore hours are posted on each campus. Book buy back dates are during the week of finals in December and May and after the last week of Summer School.*

**Complaints** - *PCCUA students are always encouraged to seek informal resolution to issues or problems and information and assistance for filing a formal resolution is provided. The Vice Chancellor for Student Services and Registrar will travel from one campus to another to address formal complaints. College policy is to address all complaints informally at the lowest level, if possible.*

**Career Pathways** - *The Arkansas Career Pathways (ICP) initiative is a comprehensive project designed to improve the earnings and post-secondary education attainment of Arkansas's low-income Temporary Assistance for Needy Families (TANF)-eligible adults. The initiative provides funding for two-year colleges to develop career pathways programs that assist TANF-eligible adults to earn a marketable educational credential for immediate entry into a high demand occupation. One CP specialist is located on each campus.*

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*Student Success (financial and career coaching) PCCUA uses Student Success coaches to provide career and financial coaching strategies. All coaches are trained and present the same curricular activities as the other two campuses. Student Success courses are tied to enrollment in Basic Writing II and Composition I. This allows the College to reach almost all students with Student Success support.*

*Student Support Labs – All campuses have a multi-purpose learning center for students to use. Students can receive tutoring. It is also used for testing and review. Many students go there to study or work on assignments. College faculty and staff can volunteer to work with students in this lab.*

*Academic Appeal – All students have full access to the academic appeal process information and forms. This process begins with the student’s instructor. The Faculty Senate Academic Standards Committee hears appeals and is composed of faculty from all three campuses.*

*Food Pantry-each campus has a fully stocked food pantry which students can use to feed their families. The pantries have specific hours which are posted and any student may stock a bag of groceries. Items in the pantries are suitable to prepare easy meals for students with dependent children.*

*Career Closet- the Helena and DeWitt campuses have career closets with lightly worn clothing students may select appropriate professional clothing for interviews and other college related activities. Any student may use this service.*

- B. Are faculty, library, professional development and other program resources sufficient?**

*Library-Not applicable, CP.*

*Professional Development*

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*PCCUA provides a wide range of resources to support faculty. Faculty are encouraged to pursue development activities in their discipline and the college provides several kinds of professional development opportunities. Because of the pandemic, the last 18 months have been dedicated to improving virtual skills of all faculty. Much of that has been focused on adapting to virtual teaching.*

*The College professional development sessions are required by all faculty. There are several kinds of professional development which have been promoted because of the needs which emerged in the pandemic. First technology in teaching has been at the forefront of training provided by the college. Student engagement has been stressed as a means to address the disconnectedness felt by some student who were forced to take courses remotely. Any student needing a computer may borrow one from the IT Department for the entire semester. Additionally, students and faculty have ongoing orientation to working with technology. Another area of development has focused on culturally responsive teaching. It is important for faculty to understand and connect with groups of students based on student characteristics such as race, gender, socio-economic level, and disability.*

## **VI. Review of Program Effectiveness**

### **A. Indicate areas of program strength.**

*The Strengths of the Horticulture Operations program include the following:*

*The program is useful for home and industry activities*

*Students learn about plant process and management.*

*Students learn about landscaping*

*Students can enjoy the aesthetics of a science program*

*Learning the process of planting and seeding is good for mental health.*

*Many aspects of the program are good foundations for the study of horticulture, botany, biology or other areas of education.*

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- B. Indicate the program areas in need of improvement within the next 12 months; and over the next 2-5 years.**

*PCCUA has done a good job of recruiting students into this major but with some planning could probably do better. The instructor has incorporated numerous “hands on” activities which students enjoy and are directly applicable to the learning.*

*The instructors have developed a direct pathway to technical certificates and associate of applied science degrees. This is very important for student desiring to pursue study in this discipline. Cross disciplinary instruction has been helpful in attracting and keeping students engaged in the program.*

*The instructors have indicated that the pandemic had a profound impact on instruction and student learning. It interrupted ongoing course delivery and forced all instructors to pivot to online instruction where possible. This was accomplished but the spring 2020 school closing forced faculty teach online. This was very hard. During the summer fall of 2020, PCCUA focused on ensuring that faculty were prepared for direct online delivery.*

- C. Indicate areas for program development based on market/industry demands that have not been identified by the institution.**

*Horticulture is such an important major for farmers or those wanting to work on farm, do research, or work for extension agencies or agriculture related industries. The CP program could be a strong pathway into a transfer horticulture program but it does not appear to be packaged that way. It would not take much work to make that happen. There are so many subdisciplines within horticulture that would be of interest to students.*

*Those who stop with a CP in horticulture may find themselves self-employed. Because of that, integrating business and entrepreneurship into the program makes sense.*

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### VII. Review of Instruction by Distance Technology (if program courses offered by distance)

- A. Are the program distance technology courses offered/delivered in accordance with best practices? *NOT APPLICABLE*
- B. Does the institution have appropriate procedures in place to assure the security of personal information? *YES, ALL FILES ARE KEPT IN THE REGISTRAR'S OFFICE. Only directory information about students is shared.*
- C. Are technology support services appropriate for students enrolled in and faculty teaching courses/programs utilizing technology?

*Technology in teaching has been at the forefront of training provided by the college. Student engagement has been stressed as a means to address the disconnectedness felt by some students who were forced to take courses remotely during the pandemic. Any student needing a computer may borrow one from the IT Department for the entire semester. Additionally, students and faculty have ongoing orientation to working with technology.*

- D. Are policies for student/faculty ratio, and faculty course load in accordance with best practices?

*For the last couple of years, these completion rates reflected a few problems the College has faced. One was the loss of a part time instructor which interfered with being able to offer the last course needed for completion. The second serious disruptive issue was caused by the pandemic when the College was forced to shut its doors making students unable to complete until the fall term.*

*Full time faculty teach thirty points or its equivalent per semester. Thirty points is equivalent to fifteen credit hours which usually translates into four or five classes depending on the credit hours of the course being taught.*

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### E. Are policies on intellectual property in accordance with best practices?

*Not applicable because this is a CP. However, the College does have a strong intellectual property policy.*

### VIII. Review of Program Research and Service

#### A. Are the intended research and creative outcomes for each program appropriate, assessed and results utilized? *NOT APPLICABLE TO CP*

#### B. Are the intended outreach/service/entrepreneurial outcomes for each program's initiatives appropriate assessed and results utilized?

### Assessment

*Assessment is the ongoing process of establishing clear, measurable, expected outcomes of student learning; systematically gathering, analyzing, and interpreting evidence to determine how well performance matches those expectations and using the resulting information to understand and improve student learning throughout the College.*

*Assessment promotes quality across the institution by providing evidence to guide effective decision-making regarding institutional changes, programmatic changes, and classroom teaching modifications. Assessment takes place at the course, program, and institutional level.*

*Three key purposes of assessment in the CP programs:*

- 1. **To Inform** - Assessment activities show a clearer picture of what is really happening in a program and inform others of program contributions.*
- 2. **To Improve** - This evaluation is formative. Assessment activities provide a feedback loop to help shape or form better programs and services.*
- 3. **To Prove** - This evaluation is summative. Assessment activities provide evidence to sum up what a program is accomplishing and provide persuasive indicators to students, faculty, staff, and the community.*

### Changes Resulting from Assessment

- Identification and prioritizing of assessment goals*

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- *Adapting the referral form so that it is used in a more comprehensive way*
- *Examination of the current advising system*
- *Establishing an Assessment webpage for publishing assessment outcomes, information, and resources*
- *Publication of division and institutional assessment outcomes*
- *Increased interdivisional communication and cooperation to achieve assessment and other goals*
- *Examination and modification of documents used to identify learning outcomes*
- *Clarification of divisional roles in assessment*
- *Increased knowledge of divisional and student service responsibilities toward student assessment*
- *Greater desire by faculty and administrators to gauge student learning outcomes and use data to make decisions contributing toward better instruction*
- *Cooperative effort of divisions within the College and an appreciation for each division's role in assessment.*

### IX. Local Reviewer Comments

- A. **How is the program meeting market/industry demands and/or preparing students for advanced study?**

*A description of the student tasks reflects how the program is meeting industry demands.*

*Students are able to perform the following tasks:*

- *Identify career opportunities in the horticulture industry*
- *Identify and practice safe use of tools, equipment and supplies*
- *Demonstrate an understanding of soil and plant growth*
- *Grow, and maintain plants in horticulture the lab environment*
- *Demonstrate an understanding of plant identification, selection, use and maintenance of plant material*
- *Identify and prescribe sustainable options in horticulture*

# Academic Program Review

## External Reviewers Report Template

- *Identify common biotic and abiotic plant pests and disorders and develop strategies to manage them in an environmentally safe manner.*
- *Apply horticultural skills and knowledge to operate various business entities found in the horticultural industry*

### **B. What program modifications are needed?**

*The Team makes the following recommendations:*

1. *Align work with the County Extension services.*
2. *Provide entrepreneurship training.*
3. *Because horticulture is a good STEM discipline, develop an upward education path.*
4. *Take advantage of the summer sessions and try to provide some clinics/camps.*
5. *Connect student work to real research. UAPB is doing lots of famine research so take students to see some of that. The Extension Experiment Station does a lot of work with soil samples so it would be useful for students to see this.*
6. *Provide more engagement activities for students because it makes the subject much more interesting and fun.*
7. *Increase the technology training, especially the GPS and drone training.*
8. *It might be helpful to make this a 15-hour certificate. There is a lot which needs to be covered in twelve (12) credit hours which is not very long.*

### **X. Report Summary**

- A. Include reviewer comments on the overall need for program graduates/completers in the local area, region and/or nation over the next 5 years.**

*Horticulture is very important to farming and agriculture. There is so much technology in research in horticulture which will improve the quality of life for so many. Famine research, mosquito and other pest control research help stop disease. All of these changes suggest the need to connect this program to an advanced program of study.*

# Academic Program Review

## External Reviewers Report Template

*So many people getting this certificate will enter self-employment, especially if they remain in the delta. It would be wise to gradually incorporate ag business practices and entrepreneurship training.*

*The PCCUA Horticulture Operations program has appropriate goals and activities. Students are accomplishing these goals by applying practical knowledge of horticulture to real life experiences and attend a horticulture lab where they can apply learned skills. The graduates work in many kinds of horticulture related fields such as managing a garden business, working in fruit orchards, greenhouse work, working in flower and plant shops, and working in nurseries. Several students do independent landscaping services and gain employment at garden centers, and some work with soil and pesticide jobs.*

*The program does meet market needs and there is sufficient demand for the program. However, graduates have limited job opportunities in this region and have better chances for a good paying job in urban areas. Course enrollment is good and the graduation rate meets productivity. There are no exit requirements.*

*A review of the curriculum indicates that the students might benefit from having more technology, business, and entrepreneurship integrated into the curriculum. Existing College policies make additions and course modification like these, easy and new courses can be added without too much red tape.*

*The program does reflect that the faculty exercise best practices in teaching content and strategy. On the other hand, student experiences could be expanded to include observations of research such as famine studies at UAPB which is very close to both Stuttgart and DeWitt and not that far from Helena. The Experiment Station in Stuttgart would be good place to take students for a field trip. This would encourage further horticulture study, promote interdisciplinary and transfer interest, and make the learning experiences more fun.*

# Academic Program Review

## External Reviewers Report Template

*There are many supports in place to help students succeed. And the College has strong advising support. The faculty are well qualified to teach. Both instructors make a great effort to seek and complete professional development activities. The College has a comprehensive evaluation process which strives to inform and improve teaching. The workload is in keeping with best practices and program resources are more than sufficient.*

*Program effectiveness has been measured by the number of student completers who are placed in jobs.*

**B. Include reviewer comments on overall program quality, state program review process, etc.**

*Having the Self Study to review and making a site visit afterwards, made it easier to complete the external reviewer's form. The overall process is comprehensive and covers many aspects of the program that would probably not been reviewed without the guidelines. The general quality of the Self Study was comprehensive and includes lots of tables, syllabi and many artifacts to support what was being said about the program. This made the review thorough and organized.*

**I. Response to the External Reviewers' Recommendations**

In this section, please copy the recommendations that the external reviewers provided in their report. Then, provide the institution/department/program response to the recommendation.

<b>Recommendations from External Reviewers</b> (copied from the external review report)	<b>Response</b>
<i>Align work with the County Extension services.</i>	This makes complete sense and is something which can be completed easily.
<i>Provide entrepreneurship training.</i>	Faculty had not thought about this but the training could be a module or two introduced in the existing courses.
<i>Because horticulture is a good STEM discipline, develop an upward education path.</i>	Faculty will examine this option. It may be more difficult to do.
<i>Take advantage of the summer sessions and try to provide some clinics/camps.</i>	This is a good idea if resources can be found to do this in the summer.

# Academic Program Review

## External Reviewers Report Template

<i>Connect student work to real research. UAPB is doing lots of famine research so take students to see some of that. The Extension Experiment Station does a lot of work with soil samples so it would be useful for students to see this.</i>	This would involve organizing field trips which would be doable. It is obvious that the students would enjoy these kind of field trips.
<i>Provide more engagement activities for students because it makes the subject much more interesting and fun.</i>	The students do have a lot of activities in the laboratory which is located inside and outside on the grounds of the Training Center.
<i>Increase the technology training, especially the GPS and drone training.</i>	The college would like to do this but there are limited resources. It will be done in phases. We have purchased a couple of drones but that is not enough for much.
<i>It might be helpful to make this a 15-hour certificate. There is a lot which needs to be covered in twelve (12) credit hours which is not very long.</i>	Increasing the CP to fifteen credit hours is possible and would not be very difficult.

# Academic Program Review

## External Reviewers Report Template

### I. Actions Taken in Response to the External Reviewers' Recommendations

In this section, please describe the actions that will be taken as a result of the review; if any based on the recommendation from the external reviewers; note when the action will be completed and who is responsible for seeing that it is completed; and finally, list any resources that will be used to complete the action. Please add lines to the table as necessary.

Recommendation	Action	Timing & Responsible Person/Group	Resources
<i>Align work with the County Extension services.</i>	Fall 2021	Extension agents and instructors	Partnership with U of A County Extension Service
<i>Provide entrepreneurship training.</i>	Fall 2022	Plan two entrepreneurship modules which can be integrated into the curriculum.	Planning time and teaching resources.
<i>Because horticulture is a good STEM discipline, develop an upward education path.</i>	Fall 2022	Organize the faculty and explore what kind of programs of study match the current CP.	Planning time and curriculum approval.
<i>Take advantage of the summer sessions and try to provide some clinics/camps.</i>	Summer 2022	Faculty will need to plan the clinic, include many field experiences and "hands-on" activities, find a space, and advertise.	Money to finance the program and faculty to teach in the program.
<i>Connect student work to real research. UAPB is doing lots of famine research, take student to see some of that. The Extension Experiment Station does a lot of work with soil samples so it would be useful for students to see this.</i>	Fall 2023	Connect with UAPB and other sites doing research. Develop a schedule.	Planning time, informal agreements, transportation.
<i>Provide more engagement activities for students because it makes the subject much more interesting.</i>	Fall 2021	Faculty	Planning and implementation time.
<i>Increase the technology training, especially the GPS and drones.</i>	Ongoing	IT and DL Departments	Training time and IT support
<i>It might be helpful to make this a 15-hour certificate. There is a lot which needs to be covered in twelve (12) hours which is not very long.</i>	Uncertain	Instructors, Faculty Senate Curriculum Committee, Instruction and Curriculum Team, faculty, chairs, VC for Instruction	Planning time