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| **2022 Self-Study Report** **Agriculture AA, Agribusiness AAS, Agriculture General and Business Certificate, Equine Management AAS and Certificate** |
| **Instructions**: The following pages will guide your submission of your Academic Program Review Self-Study. Please type your responses directly into the document. The completed self-study instrument and all attachments must be submitted to the Academic Program Review Coordinator and your Academic Dean by **September 22, 2022.** **March 3,** **2022 September 22,** **2022 October 25,** **2022**  **Nov-Dec 2022 Every Fall from 2023-2026** |
| **Program Under Review** |
| **Degree:****Agriculture AA****Equine Management AAS****Agribusiness AAS****Certificates:****Agriculture General, Agriculture Business, and Equine Management** | **If the program has gone through accreditation in the past year, the information from the accreditation packet can be inserted into the corresponding areas on the self-study.** | **Contact Information for lead on** **Self-Study****Name: DeAnna Diwan****Campus: Signal Peak****Phone: 520-494-5328****Email: deanna.diwan@centralaz.edu****Date of APR Completion:9-20-22** | **Date of Review:** Oct 27, 2022 |
| Peer Reviewers:Sandra Brightwell - Director II - HITDawn Conley - Professor of SociologyMeisha Binkley – Professor of Biology |

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| **I. Program Description, Mission, Vision, & Equity Statement**  |
| **1. What is the description of the program as stated in the current CAC catalog:** (Should contain: description, program certifications, accreditations, awards, and skills attained.)**AGRICULTURE AA** The Agriculture Associate of Arts Degree is designed for those interested in career/transfer path degrees in animal science, biotechnology, plant science, agriculture business, agriculture education, and other agriculture-based programs.**EQUINE MANAGEMENT AND TRAINING AAS:** The Equine Management and Training AAS Degree contains two options for the Associate of Applied Science Degree. Students complete a Horse Trainer or an Equine Business Management program of study. The degree prepares students for employment in a variety of areas in the horse industry. Classroom activities and practical laboratory experiences are provided with both options.The Equine Management and Training Certificate provides basic skills and information for equine handling. Courses for the certificate apply toward completion of the Equine Management and Training AAS Degree.**AGRIBUSINESS AAS:**  This Degree provides students with specialized agricultural workplace skills for entry and mid-level agribusiness positions. | **Does the program description provide the following information? a) A synopsis of the program and curricular outcomes.** | **Peer Review Comments:** (a) Synopsis of program and curricular outcomes are clear. However, more clarity describing what makes the Ag AA and Agribusiness degrees different from each other would help students and advising.(b) All programs make clear the accreditations (AA, AAS). If there are any other accreditations (like professional certification or licensure), there is no mention.(c) Only the equine management program mentions skills students will learn. From the description of both options within that program, even without itemizing skills it’s clear what students will learn/gain from the program. For the Ag AA, it’s clear this is a pre-req program for university transfer but no mention of skills students will have when finished. For the Ag AAS, the word “skills” appears, but that is all and the rest of the description doesn’t provide more context or info.For all three degrees, identifying skills or outcomes can:* Help future students better understand the program and outcomes
* Help future or current students decide which degree to pursue
* Provide pertinent information when marketing the degrees
* Inform future employers what to expect from graduates they hire
* Help with transfer evaluations
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|  | Adequate 2 |  |
| **Program certifications, accreditations, and awards.** |
|  |  | Opportunity for Improvement 1 |
| **The skills that graduates from the program will attain.** |
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| **2. Does your program have a mission and/or a vision statement? If it does, please write them below and indicate where they appear.** We aspire to excellence as we recruit, prepare, and support individuals in agricultural careers. | **Does the program have a mission and/or a vision statement? If so, are the program’s mission or vision statements clear and reflective of the program?** | An encompassing, broad mission statement. This statement would benefit from being more specific. Clear, specific mission and vision statements create a better understanding and direction for the program. We also suggest including the word “we” in your statement wherever it appears (webpage, catalog, etc.). |
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| **3. Describe how the program’s description, mission and/or vision aligns with the College’s Mission and Vision:****CAC Vision and Mission Statements:****Vision:**Central Arizona’s premier choice in education and career excellence.**Mission:**Central Arizona College serves as a TRUE Learning community by empowering our students and staff to succeed.**Teaching. Reaching. Understanding. Empowering. Learning.**Central Arizona College engages our diverse communities in quality learning experiences for lifelong success by providing accessible, educational, economic, cultural, and personal growth opportunities. Central Arizona College’s Agriculture mission statement supports the achievement of CAC’s mission statement through lifelong learning opportunities, personal growth and career success. We support community educational programs focused upon providing better jobs and a better life. | **Is the program aligned with the college’s mission, vision, and strategic goals?** | The mission statement, as described, extends CAC’s mission statement. Even with refining the program mission statement to be more clear and specific, it will be easy to align with CAC’s vision and mission.  |
| Exemplary 3 |  |  |
| **4. Equity Statement and Evidence:** What efforts have been made to make the program more equitable? [**(Resources here)**](https://www.insidehighered.com/blogs/higher-ed-gamma/how-stand-equity-higher-education) Our curriculum uses hands-on in-class activities. Assignments are to promote skill building and problem solving. | **Appropriate efforts have been made to make the program more equitable?** | This is great, and aligns with suggestions in the provided resource. The focus on practical, hands-on approach to learning reaches a broad spectrum of students, but still not all students. Are there strategies in place for accommodating students with different learning styles and/or students with different abilities? Is there a component in the curriculum to address “cultural” differences in Agricultural, Agribusiness, and Equine fields?Related to equity, how are students recruited? Are all students accepted, or is there a unique application process? What tools are used to select students? Are students aware of the focus within the program for hands on activities?Is there evidence that the program’s equity efforts have helped with student recruitment, retention, or graduation? |
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| **II. Program Curriculum:**  |
| **1. When reviewing the curriculum for the certificate and/or degree, are there any courses that need to be added, deleted, or modified?** We reviewed our degrees 2 years ago and updated our courses and pathways.  | **Was any information given as to possible revisions to the course description, articulation, additions, revisions, or deletions anticipated?** | **Peer Review Feedback:**Great job staying on top of that and making sure the curriculum is current. A summary here of what was updated, and a link to the MAP with current courses would be helpful. We learned later on in this report that the Agribusiness degree was created two years ago, and presumed that was part of the curriculum review at that time. A mention in this section would have been helpful. |
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| **III. Program Outcomes and Assessment** |
| **1. What are the Program Learning Outcomes (PLOs) for the program degree or certificate as currently indicated in ACRES? If this program contains multiple degrees and/or certificates, the learning outcomes should be provided for each one.** **Agriculture AA**1. (Evaluation Level) Explain and evaluate the importance of plants in our environment in relation to complex agriculture systems. (CSLO 2)2. (Synthesis Level) Construct a computerized agricultural accounting system for economic analysis of agribusinesses. (CSLO 3)3. (Synthesis Level) Summarize the functional anatomy of domestic animals and relate their importance to societal needs. (CSLO 4)4. (Evaluation Level) Contrast the multiple uses of renewable energy including; forestry, range management, wildlife conservation and water. (CSLO 1)5. (Evaluation Level) Compare and contrast the components of plant and animal cells through creation of models. (CSLO 2)6. (Evaluation Level) Assess and describe the problems of feeding the world's population to include; food production, social demographics, infrastructure, government and environment. (CSLO 1)**Equine Management and Training AAS**1. (Knowledge Level) Define and list the most common tack, and describe its uses.2. (Evaluation Level) Explain the diversity of the equine industry, and the problems and opportunities this diversity creates.3. (Evaluation Level) Assess the capacity for the horse to perform as an athlete.4. (Comprehension Level) List and explain the natural motivations and behavior of the horse.5. (Synthesis Level) Collect information and create a business plan in the equine industry.6. (Synthesis Level) Develop proper safety concerning horsemanship and handling of horses.7. (Application Level) Demonstrate creative solutions to problems and demonstrate independent critical and analytical thought.8. (Evaluation Level) Identify and evaluate proper safety techniques concerning horsemanship.9. (Synthesis Level) Produce equine events, including developing a budget, marketing plan, personnel management plan and strategies for adhering to regulations and reporting functions.10. (Application Level) Demonstrate safe handling of animals 100% of the time.11. (Evaluation Level) Demonstrate and justify skills used in properly caring for and preventing equine ailments.12. (Application Level) Demonstrate handling skills for a variety of different equine activities, per given project plan/instructions.**Agribusiness AAS**1. (Comprehension Level) Describe the commodity marketing system including raw materials and undifferentiated food products.(CSLO 3)2. (Comprehension Level) Describe the food marketing system beginning with raw materials and ending with the consumer. (CSLO 3)3. (Knowledge Level) Identify the purpose and need for agricultural financial records. (CSLO 4)4. (Synthesis Level) Develop an enterprise analysis system. (CSLO 2)5. (Comprehension Level) Explain accounting principles and rules. (CSLO 3)6. (Application Level) Demonstrate knowledge of the role of agriculture in economic development. (CSLO 1 & 2)7. (Application Level) Demonstrate the ability to use various applications of computer technology for agricultural management and problem solving. (CSLO 3 & 4)8. (Analysis Level) Calculate appropriate financial ratios from an income statement and a balance sheet. (CSLO 3 & 4)9. (Comprehension Level) Understand the basic functions of operating a business. (CSLO 4)10. (Application Level) Maintain a complete set of accounting records for a sole proprietorship, including the financial statements and completion of the accounting cycle. (CSLO 2 & 3)11. (Synthesis Level) Utilize accounting information to make business decisions. (CSLO 2 & 3)12. (Application Level) Identify and apply leadership critical thinking skills. (CSLO 1 & 3)13. (Application Level) Use writing and reading for inquiry, thinking, learning and communicating. (CSLO 4) |  **Are the Program Learning Outcomes (PLOs) for the program provided and are they relevant to the program’s goals?** | **Peer Review Feedback:**The Equine Management and Agribusiness are straightforward. From those outcomes, there are clear connections between what was said in the program descriptions and mission statement in Section I. From these PLOs, we understand more what the Agribusiness degree is and how it is different from the Ag AA. These descriptions also clarify what outcomes are for graduates of those two programs. We do have one suggestion for the Agribussiness: incorporate or reclassify an existing outcome to include Bloom’s Level 5 (evaluation). The Ag AA PLOs are a hodgepodge, most likely to highlight outcomes a university transfer reviewer looks for. These PLOs do not further clarify the program description in Section I, and actually made us question that we understood what the outcomes for the Ag AA program were. Some seem more like individual course outcomes (#5 about cells) rather than the result of finishing the whole program. #2 sounds like most of the agribusiness PLO list in one item. We suggest a review and revision of the Ag AA PLOs.  |
|  | Adequate 2 |  |
| **2. Are the outcomes from your program determined or influenced by any external organization, agency, or accreditor? If so, please explain. Are there any available accreditations which the program does not have, but may benefit from seeking?**We evaluate courses with our advisory committee annually. None have been identified; faculty is researching opportunities in external accreditation. | **Are any of the program outcomes determined or influenced by any external organization, agency or accreditor identified and explained? If not, mark not applicable. (NA)** | This response honestly caused us much frustration. Initially we were confused about who was on the advisory committee, and how there wasn’t anything else mentioned here, not even AGEC or ATF. As we kept reading this report, we learned more that should have been mentioned here.First issue, who is on this advisory committee? CAC faculty only, the Ag Council mentioned in Section IV part 4, the governing board, or some other combination of advisors? Second, in Section IX we learned the program works with and hosts FFA and CTE activities. That presumably means there are program outcomes, even if only recruitment and/or outreach, influenced by FFA and CTE.Third, we really questioned that there wasn’t some sort of professional certification or license available for horse handlers or trainers. Is there any sort of professional exam or mentored work hours requirement students in any of your programs need to obtain employment? If so, your program is (or should be) influenced by those requirements.  |
|  |  | Opportunity for Improvement 1 |
| **3. Assessment Results: Use this Assessment Reporting Form to share your assessment results. Attach assessment data or rubrics as an appendix. (Click on the link to attach your Assessment Reporting Form)****Attached is the assessment rubric used.**  | **The information in the Assessment Reporting Form should answer the following questions** | We didn’t receive a rubric.  |
| **A. What PLOs and/or MSLOs and CSLOs did you assess this year?** We have not done any assessment this year because we did a complete overhaul two years ago. | **Are the PLO’s or MSLOs that were assessed identified and the department/program strategies for assessing learning outcomes described and information provided on how assessment results are collected, analyzed, and discussed?** | One suggestion for the team overseeing these program evaluations: the form should be changed to ask the program to identify what was assessed since the last APR self-study.A suggestion for the Ag program: with assessments you do, consider incorporating EAC in Blackboard. |
|  |  | Opportunity for Improvement 1 |
| **B. Describe the assessment method used and criteria for successful achievement of student learning outcomes. (e.g., rubrics, licensing exam, internship, portfolio, exam, research paper, performance exam, EAC, etc.)**One of the assessment methods used in ANS122 – Equine Facility Management II (example) is a hands-on assessment where the student is to build a 3D model of their facility they created throughout the semester. The student has drawn this facility to scale, priced the facility, and the last assessment to prove proficiency is to build it. The students must channel their creative side and build their facility out of items like cardboard, Styrofoam, tin foil, toothpicks, etc. This project will mimic the students’ facility that they have created on paper, now it is put to life. The students also took a written example that consisted of 5 critical thinking questions that were answered in essay form**.****In the rest of our courses.**

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| 1. (Comprehension level) Identify and describe the various taxonomic systems for plants and animals.* Plant collections AGS 101
* Test ANS 215
* Labs AGS 240
* Labs AGS 235
* Test ANS 101
* Test ANS 216

 2. (Knowledge level) Describe the anatomy and tissues of the root, stem, leaf and flower.* Labs AGS 101
* Labs AGS 240
* Labs AGS 235

3. (Comprehension level) Discuss the importance of photosynthesis and respiration in plants.* Labs AGS 101
* Labs AGS 240
* Labs AGS 235

4. (Evaluation level) Describe and evaluate the impact of genetics and biotechnology research in plants and animals* AGS 104 Environmental Ag-Debate and Essay Questions
* ANS 104 Domestication-Discussion
* ANS 213 Discussion
* ANS 216 Discussion
* AGS 101 Essay questions
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| 5. (Knowledge level) Identify the five key functions of soil in our ecosystem.* Labs AGS 221

6. (Analysis level) Analyze and relate the influence of the seven soil physical properties to the functions of soil.* Labs AGS 221

7. (Comprehension level) Define and discuss the concept of natural resources as it relates to agricultural production.* AGS 122 Essays and discussions

8. (Evaluation level) Analyze, identify, and discuss the various methods for insect pest management.* AGS 106 Insect collection and discussions

9. (Application level) Set up a computerized agricultural accounting system.* AGB 123 Assignments

10. (Synthesis level) Demonstrate knowledge of microcomputer components, their use and applications in agriculture and associated businesses.* AGB 124 Assignments
* ANS 226 Ration Project

11. (Comprehension level) Identify the fundamental marketing and distribution principles of animal, dairy, and poultry science. * AGB 213 Tests
* AGB 100 Assignments
* AGB 204 Marketing Plan
* ANS 101 Labs

12. (Analysis level) Identify the principles of animal genetics in domestic animal production.* ANS 104-Final Breed Presentation
* ANS 213 Discussions and assignments
* ANS 200 Discussions and assignments
* ANS 216 Discussions and assignments
* 13. (Comprehension level) Describe the functional anatomy and physiology of domestic animals
* ANS 101 Discussions and assignments
* ANS 215 Discussions and assignments
* ANS 200 Discussions and assignments
* ANS 216 Discussions and assignments
* ANS 111 Discussions and assignments
* ANS 211 Discussions and assignments
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 |  **Was the assessment method and criteria identified?** | For ANS 122, presumably the course identified for assessment discussed in part A, yes the method and criteria was identified. A great assessment method for ANS 122. Some suggestions that might further improve the assessment:* Including a peer assessment of the facility, both paper and 3D models.
* Include a student reflection on what building a 3D model did to improve their understanding of safety, movement and/or efficiency of space, or other items useful and reasonable to the project.
* Give the students a budget to work with that would make sense if they were truly building a facility.

For the remaining courses, those methods of assessment look varied and comprehensive. We assume the labs and tests have written components that students fill out and instructors then assess. How are discussions assessed?Also, Question 3a says nothing was done in the last year. When was the assessment discussed in 3b conducted?A remark for the team overseeing these program evaluations: this question is confusing. The preparers reasonably interpreted this question to mean a review of every SLO for every course in their program. If that was the intention, why does the form not ask for SLOs? If instead the intention was for the reviewer to go into more detail about one course chosen for assessment, please make that clearer. |
|  | Adequate 2 |  |
| **c. How many students were proficient in the PLOs OR MSLOs and CSLOs and how many were not? What was determined to be proficient? (i.e., 70% = proficient)** All 10 students in our example were proficient for this learning outcome. Proficiency is determined as 75% or higher. The students' average grade on these two assessments ranged from 80%-100%.  | **Was data provided on assessment results on how many students were proficient?** | More context is needed here. To give more meaning to the grade data, include average or median scores. Also clarify which outcome and two assessments were being discussed here. There were many assessments listed in part b.  |
|  |  | Opportunity for Improvement 1 |
| **D. What changes/improvements were made or will be made in response to the outcomes of the assessment process?**Although all students tested well on this learning outcome, there are a few things that I would like to change to challenge the students. The students do not have to make this 3D facility to scale. The previous assessment of this learning outcome, the students draw their facility to scale on approved graph paper. I think the students would be more challenged and understand the components of an equine facility more, with regard to horse safety, if they were to build this 3D facility to scale. | I**s an explanation provided on how MSLO and CSLO assessment results have facilitated changes/improvements to the outcomes of the assessment process?** | Yes, this explanation is a good and reasonable suggestion of improvement for the ANS 122 assessment However, be specific about how MSLO and CSLO assessment results have actually correlated with changes and improvements. |
|  |  | Opportunity for Improvement 1 |

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| **IV. Program Graduates** |
| **1. Discuss how the program supports current or future needs for the job market in Pinal County, the state of Arizona, and/or the United States.****As detailed in the Pinal County Economy-Economic Contribution Analyses for 2016** contribution of agriculture and agribusiness to Pinal County’s gross regional product (GRP) was an estimated $611.1 million in 2016. Due to a continued drought on the Colorado River Basin millions are being invested in farm conservation efforts. This will usher in a need for a more technologically advanced employee. Current and future employees will need to understand plant and soil science, sub-surface drip and threshold economics. The industry has a greater demand for employees with a technical background to provide the services and products needed. We believe strongly in career awareness and offer our students opportunities to interact with members of the local industry. We have been successful in securing internships to facilitate real life work experience.  | **Was information given on how the program supports current or future needs for the job market in Pinal County, the state and/or the United States?** | **Peer Review Feedback:**The internship experiences are excellent, and make sure graduates have marketable experience when entering the job field. What is the program doing to provide the technical background employers are/will be looking for?More specific suggestions:* Add link to the Pinal County Economy-Economic Contribution Analyses for 2016 resource.
* Provide examples of placement locations and/or organizations.
* Use Occupation Insight to understand the current job market and projected growth.
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|  | Adequate 2 |  |
| **2. For degree programs, identify any specific in-state baccalaureate programs into which this program is particularly suited for transfer.** The Agriculture AA can be adjusted.ASU1. Agribusiness
2. Sustainability BS
3. Sustainability BA

 U of A1. Agribusiness Economics and Management
2. Agricultural Technology Management and Education
3. Animal Sciences
4. Biosystems Engineering
5. Crop Production
6. Environmental and Water Resource Economics
7. Environmental Sciences
8. Family Studies and Human Development
9. Microbiology
10. Natural Resources
11. Nutritional Sciences
12. Plant Sciences
13. Retailing and Consumer Sciences
14. Pre-Veterinary Science

 NAU1. Forestry

  | **Are any of the program outcomes determined or influenced by any external organization, agency or accreditor identified and explained? If not, mark not applicable (NA)** | Please add links to the identified university programs.We noticed the programs here were suggested for the Ag AA. Can either of the other two CAC programs, particularly the Agribusiness AAS, transfer? Also, looking at the degrees listed here, many (if not all) would require at least a full year of lab science and most likely a year of calculus pre-reqs before students can start taking program classes. Does the Ag AA satisfy those requirements? If not, would you consider making the Ag AA and AAS program instead? |
|  | Adequate 2 |  |
| **3. Indicate if there are any articulation agreements in place for degree graduates.**We did have articulation agreements with U of A for Ag Ed BS and Ag Tech Management BS. Those were being reviewed during Covid and new articulations have not been finalized.  | **Are articulation agreements in place for degree graduates?** | Unclear from UA listing. Were you referring to items 1 and 2 from UAs list? If so, please update the list since none of the UA listings are for “Ag Ed”.Also unclear how there is a question if there’s a current transfer agreement or not. Isn’t the previous agreement in place until new articulations are finalized? |
|  |  | Opportunity for Improvement 1 |
| **4. Discuss how the program gets feedback on its program and curriculum from external sources, such as advisory boards, employers, articulation task forces, accreditors, etc.**Our Agricultural Council is comprised of agricultural businessmen and educators representing Pinal County and the University system. The council reviews the current academic programs and advises on the development of new programs and courses. | **Was information given on how the program gets feedback on its program and curriculum from external sources such as advisory boards, employers, articulation task forces, accreditors, etc.?** | Provide examples of the businesses/employers/government participants, farmers, etc. that serve on your council. Does AG council actually represent CAC AG to the universities? If so, this is different than other programs and a brief explanation of how CAC and the Ag council works together would be helpful.Mention ATF support. Seek feedback from internship partners and county employers who have hired graduates. Also seek feedback from alumni.Note: lots of things mentioned here in sections below. |
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| **V. Program Specific Resources:***In this section, please focus on program specific resources. You may, but do not have to, discuss resources available to the college at large such as Blackboard, the Learning Centers, Library, etc. However, if these resources are impacting your program in a positive or negative way which you would like to discuss, please do so.* |
| **1. Discuss the adequacy of the budgetary resources, human resources, technological resources, classrooms, labs and space, academic support for students (i.e.: learning center, library) and student support (i.e.: advising) available to the program over the past 5 years:**The agriculture program is taught by 1 full-time professor and 5 adjunct professors. In the last 5 years we have lost 2 full-time professors that were able to teach Agriculture Science, Agribusiness, and Animal Science. Professor Diwan has taken additional classes from the University of Illinois that have allowed her to teach Agriculture Science classes. We have additional Animal Science courses that have not been offered since the loss of these full-time professors. Due to the high demand for highly qualified agriculture professionals in the region we are unable to find additional properly qualified adjuncts. 2015-2016 Class enrollment AGB: 127AGS: 274ANS:115It is the agriculture department's belief that skills are made from hands on projects. “What the hand does, the mind remembers.” (Maria Montessori) The department has a greenhouse that lost its budget line and is not fully functional. We request that the greenhouse needs a Captial expense of around $10,000 to restore operations and a yearly line item thereafter. Technology is ever changing. Additional funding is needed for subsurface drip labs and drone applications. Outstanding assistance and communication from the SPC Library and staff. Agricultural references are purchased annually, and library staff always responds to department requests. The learning center continues to support our programs and has added a CTE specific program tutor. Students believe that the learning center should be available on Fridays and Saturdays. The introduction of the STEM program has aided students with tutors, technology, and equipment in the classroom to promote agriculture student success. The **TRIO** Program is an educational opportunity outreach program designed to motivate and support students from disadvantaged backgrounds.Institutional support is adequate in registration and counseling. Financial Aid services meets the needs of current students. Advising has improved. Having 1 advisor that specializes in agriculture has improved the student's experience. There is still a problem with major declarations when done by general advisors.  | **Was the adequacy of the budgetary resources, human resources, technological resources, classrooms, labs and space, academic support for students over the past 5 years evaluated?** | **Peer Review Feedback:** It would be helpful to see data from each academic year (2016-2021).Re: FacultyWhat is the desired faculty composition for the Agricultural program and justifications for such faculty? Would additional full-time faculty paid at an attractive salary bring more qualified professionals to teach courses? Also, faculty hiring most likely was affected by the hiring freeze. This is lifted now, and CAC is doing more hiring now.Re: GreenhouseWhen was the Greenhouse budget line item removed? Could it be requested back? Greenhouse repairs estimate is $10k now. What is the estimated annual operation cost?The greenhouse is most likely the location for several lab courses. Where have those classes been meeting and how have class projects been affected by the loss of the greenhouse? Has operational cost of some things increased or decreased because of no greenhouse? Has enrollment (or hiring or more faculty) been affected because of no operational greenhouse?Without the greenhouse is there actually a need for substation drip equipment? Is there a classroom that has a smaller set up for learning purposes?Re: AdvisingIs the issue with General Advisement that students are declared in a program, when in fact they are not in the program?In our last faculty meeting, our “STEM” advisor indicated advising has undergone a huge reorganization in the past academic year, and there is not technically a STEM advisor anymore. Have the Ag programs been affected by this? |
| Exemplary 3 |  |  |
| **2. Does the program have sufficient resources to be effective and relevant? Explain:** The Central Arizona Agriculture Program staff is sufficient to carry out all educational, program, administrative requirements. Staffing includes one full-time faculty and 5 adjuncts.  |  |  | No Response Because of conflicting remarks on this topic | Could the 5 adjuncts constitute or be used to justify adding more full-time faculty?This statement that staffing is sufficient contradicts statements made in the Section V part 1 response. |
| **3. What future goals does the program have? Will extra resources and funding be required to achieve it?** AAS in Agribusiness Degree is a new degree that was launched in the Fall of 2020. Our faculty was able to recruit in-person this summer with favorable results. Agriculture classes have rebounded from online Covid lows. Equine classes are over filled this semester. The agriculture department will continue to actively recruit. | **Were future goals identified along with the extra resources and funding that would be required to achieve them?** | Super that in-person recruiting is increasing enrollment! Also include enrollment data, with dates. Refine the statement “this summer” with actual dates/information/details (e.g., The summer of 20xx we were able to recruit in person).First time this report mentioned the Agribusiness degree is new/created in 2020. No mention in this section of future goals. Is there option, if say another faculty was found, for more equine classes to be offered? There are not many community colleges in AZ that offer that program, and fewer still that have a rodeo team too.  |
|  |  | Opportunity for Improvement 1 |
| **4. Does the program have the resources to meet future goals? Explain:** Our programs are getting by, but we will need to make some upgrades and purchases such as greenhouse improvement, and a tractor for our equine facility. |  | Insufficient Resources |  | Hopefully new budgetary requests will be approved!To strengthen this part and Section V, be consistent. For example, the tractor is mentioned here but not in Section V. That sounds like a capital purchase item, so a cost possibly on par with the needed greenhouse repairs.There is no mention or tie to goals in this part. List a goal(s), and then list the resources needed. |

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| **VI. Program Alignment with Institutional Strategic Goals:** |
| **1. How is the program directly or indirectly helping the College achieve its current strategic goals? Consider each strategic goal and provide a brief comment or description on how the program works to achieve it.**

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| **CAC Strategic Goals:** | **Aligned Program Goals:** |
| **Student Success***Ensure student success through retention, persistence, completion, and transfer* | * The Agricultural Department facilitates the advancement of students through recruitment, initial advising through the graduation checklist. Faculty members serve as advisors, club mentors, honors professors, and competitive team coaches.
* The Agricultural Department utilizes various educational delivery methods including face-to-face, hybrid and on-line courses.
* AGS 296 Internship course created and supports internships leading to job placement in the industry
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| **Access***Ensure all Pinal County residents and others have access to high quality innovative post-secondary opportunities* | * Creation of hybrid courses to allow students access to agriculture programs.
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| **Workforce***Ensure students acquire the skills necessary for job placement and that meet employer needs in Pinal County and Region* | * Students employed in internship courses contribute to local economic vitality.
* Obtained Carl Perkins funding to gain industry specific equipment for the purpose of creating highly qualified graduates.
* Maintain collaboration with industry through Agricultural Advisory Committee. Committee members represent state universities, state agriculture departments, and state agricultural businesses to identify needs in the workforce.
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| **Community***Ensure Pinal County residents have access to lifelong learning and cultural enrichment* | * Offering online only and hybrid classes increase accessibility.
* Classes such as AGS 235 Sonoran Horticulture celebrate Pinal County rich cultural history.
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| **Environment***Ensure a safe, sustainable environment that promotes learning, communication, diversity and satisfaction among students and employees*. | * We are very proud of our work environment. Three professors are on campus during the week for in-person student needs and accessible online. We strive to make students feel comfortable.
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| **Stewardship***Ensure optimization of fiscal resources through a balanced budget to support the needs and expectations of students and the community* | * Budget planning is prioritized on improving student learning environment.
 |
| **Infrastructure***Ensure a physical and technological infrastructure that supports changes in learning and working environment* | **N/A** |

 | **Was a description provided on how the program has directly or indirectly assisted the college in achieving its strategic goals.** | **Peer Review Feedback:**Student Success:Do you have any data to show increased retention, completion, or transfer?Student success and description of faculty involvement in advising seems contradictory (or not mentioned) to what was stated in Section V part 1.Access and Community:Great strategies for access to programs. Any marketing to local schools as well?From responses about enrollment in Section V part 3 and about hands on learning in Section V part 1 and Section III, is online course offerings really the best mode of delivery? Students tend to want to enroll in online courses, but for such a hands on program it is actually useful for them? Same for the hybrid- how does that look? Do the classes meet online one day and in person another day, or have some online meeting and the students do the rest of the seat time asynchronously?Mention AGS 235 in previous section that asked about diversity.Consider aligning Ag program with new drone technology program being developed at CAC.More could be mentioned here, the Ag Council, the FFA and CTE events, or any rodeos CAC hosts.Workforce: Can you name employers?When were the Perkins funds obtained, what specifically were they used for, and what impact has that had on the program so far?Environment: Any student reviews, evaluation comments?Infrastructure: Are your classes in regular classrooms on campus, or offsite in an agriculturally specific location. Does CAC have an agriculture center for animals, plants, etc.? The greenhouse and any equine buildings/barns/etc should be mentioned here. Be specific on how these aid teaching and learning. Does the internet work well in class areas, including any external locations? |
|  | Adequate 2 |  |

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| **VII. Program Effectiveness for Graduates** |
| **1. Describe how you measure the success of degree and certificate program graduates. For example, are graduate surveys conducted? Are surveys given to employers to determine satisfaction with program graduate employees?** Currently no surveys are conducted. Many of our students are from out of state. Most of these students return home to work on their family farm or ranch for a few years before either staying with the family business or moving on to other employment. | **Was information provided on how the program measures the success of the degree and certificate program graduates?** | **Peer Review Feedback:**Great idea to conduct surveys to help with marketing and demonstrating effectiveness of programMicrosoft Forms is a good program to use, it’s easy to make and send out a short survey. Suggest to send the survey 6-12 months post-graduation, one survey for grads another for employers. Create the surveys and share the link here. Another idea: this program seems really tight knit. A Facebook group for CAC alumni to self report on Ag related things could draw in more info. |
|  |  | Opportunity for Improvement 1 |

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| **VIII. Program Improvement Efforts** |
| **1. Describe efforts made to improve the program during the past five years."** (For example, this can include professional development, curriculum revision, the purchase of equipment, using assessment to enhance instruction, etc.)**Professional Development:** Professor Diwan completed her certificate in Crop Science from the University of Illinois. **Curriculum revision:** A complete curriculum revision was done in 2019. Degree and certificate programs were cut and simplified, and unused classes were archived. Pathways were created to provide a roadmap of success for our students.**New Equipment:** A trailer for hauling livestock and rotary tiller to ensure the ground is safe for the students and animals. CARES money provided updated microscopes for lab classes. | **Was a description provided of the ways the program has engaged in program improvement?** | Awesome! Keep up the good work for getting those credits done! Explain how Certificate in Crop Science aids the program; does this align with a certain course or program?  |
|  | Adequate2 |  |

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| **IX. Data and Trends** |
| **Leave this section Blank for now. It will be inputted by IR. You will be asked to comment on the trends and information indicated by the data.** [**(Click here for Data Package)**](https://centralaz.sharepoint.com/%3Ax%3A/s/AcademicProgramReview/EYHmEYt-DO5CqlZ7q8ji1hsB1eIRUL7jqvyZ65_QXwMZag?e=cg2XA2) |
| **1. Program enrollment data for the past 5 years Agriculture (for Equine Training and Management Data, Click on** [**this link**](https://centralaz-my.sharepoint.com/%3Ax%3A/g/personal/mary_kieser_centralaz_edu/EaJgkRIuGctNqI5uR5hAz2kBwaRELx_RLPrnNZkWzhtA7Q?e=cCBPvS)**)**A. Discuss and explain the factors influencing the enrollment trends: The loss of two full time professors in 2018 had a negative effect on student enrollment. Fewer classes were able to be offered. Also, Covid has had a negative impact on our students. A substantial number of our students did not complete their degrees when classes switched to online courses. Most of our students returned home. A substantial number of our students come from rural communities that do not have access to reliable internet and phone services. This semester class sizes are larger than pre-covid. B. How has the program typically recruited students and marketed the program: Our division hosts an FFA Field Day that is attended by 250 students from across the state. The Rodeo teams' continued success is a major source of our out-of-state students. The current rodeo team has 65 student athletes. Professors attend FFA and CTE conferences to meet with high school students and teachers.  | **Has the program enrollment trends for the program increased, remained consistent or decreased?** | **Peer Review Feedback:**Do you use the cohort model for students, or can students start these programs whenever they want? Labeling the graphs by program would be helpful. May be interesting and useful to see the age of students too. Curious, since CAC is located in a rural community, why are most students out of state? How are you recruiting out of state? \*We actually learned this later in the report\* Do you recruit in state, including on the reservations?First mention of Rodeo’s impact on the program or vice versa also first mention of FFA and CTE. Those should probably be mentioned in other sections that asked for organization that certify or are involved within the program at all.Note: Did not see opening for full time faculty for this program in the online job postings. Has that been approved?Did not answer the question; this is asking if (and how many/year) students transfer from CAC to a 4-year institution to continue on with their bachelors. The question did not specify online classes. #4 list seems a lot smaller than a similar list in Section VI part 2.Where did this data come from? Specifically students vs. graduates. <https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines>If these numbers are annual, then they are at or below poverty level. Also doesn’t seem to match up with data in the “summary” table below in item 6. Differentiate what is employment income vs paid internship What is Bayer? Explain; share link. Can CAC encourage association with Disney College program or National Park Service? Both have internship type opportunities in agriculture. Also, does CAC’s Ag program participate with research projects in Maricopa with UA and the USDA? Finally, Pinal County has a unique distinction, especially for this program, for the wild horse and prison training program. Do any of the programs participate in this, and if so where is that mentioned? |
|  |  | Decreasing 1 |
| **Were the factors influencing enrollment trends discussed?** |
|  | Adequate 2 |  |
| **Was information given on how the program typically recruits students and markets the program?** |
|  | Adequate 2 |  |
| **2. Program graduation rate trends for the past 5 years in Agriculture**

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| **Sum of AwardCount** | **Fiscal Year** |  |  |
| **Awards** | **FY2018** | **FY2019** | **FY2020** | **Grand Total** |
| **Certificate** | **5** | **7** | **5** | **17** |
| AGEC-A (Arts) | 5 | 7 | 5 | 17 |
| **Associate of Arts** | **5** | **8** | **5** | **18** |
| Agriculture | 5 | 8 | 5 | 18 |
| **Grand Total** | **10** | **15** | **10** | **35** |

A. Discuss and explain the graduation trends. What efforts has the program made to help students achieve completion?Our program was hit hard with the loss of the two full time professors in 2018. That along with a change of degree programs offered and Covid have had a detrimental effect on our numbers. | **Have the graduation rates increased in the past 5 years?** |
|  |  | Decreasing 1 |
| **3. Students who enroll in a four-year college.**  During Covid fostering relationships with students over online classes is extremely hard. Agriculture is a hands-on occupation. Students were not willing to start at a university to spend the money to take online classes. Our agriculture students prefer and excelling in in-person classes. **4. For degree programs, identify any specific in-state baccalaureate programs into which this program is particularly suited for transfer.** University of Arizona* Ag Education BS
* Ag Tech Management BS
* Agriculture Business and Economics

Arizona State University* Agribusiness
 | **Has the number of program enrollees or graduates who studied at an in-state baccalaureate-level institution during the past 5 years increased, stayed consistent or decreased?** |
|  |  | Unable to determine from what has been provided |
| **5. Average Salary for Students and Graduates in Agriculture**  | **Were graduation trends and efforts to help students to achieve completion addressed?** |
|  |  | No information was given 1 |
| **6. Data Summary:** Provide a summary of this section. Indicate trends observed in the data, identify areas of strengths, and areas for improvement. https://www.bls.gov/

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| May 2021 Data from U.S Bureau of Labor Statistics |
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| Occupation (SOC code) | Annual mean wage(2) |  |
| Farmers, Ranchers, and Other Agricultural Managers(119013) |  78510 |  |
| Farm Labor Contractors(131074) |  55080 |  |
|  |  |  |
|  |  |  |
| Agricultural Technicians(194012) |  41920 |  |
| Miscellaneous Life, Physical, and Social Science Technicians(194090) |  51320 |  |
| Animal Care and Service Workers(392000) |  35130 |  |
| Animal Trainers(392011) |  40830 |  |
| Animal Caretakers(392021) |  32680 |  |
| Agricultural Workers(452000) |  31340 |  |
| Animal Breeders(452021) |  41590 |  |

Most of our students will return to family-owned businesses. The best thing we can do for our students is to help them with part-time employment and internships. This helps them decide what part of agriculture they would like to concentrate on and helps to build business relationships. We have had many successful placements with companies such as Bayer that have changed students' career paths. | **Was a summary of the Program Enrollment and Graduation Trends provided and was there a reflection of areas of strengths and improvement for the program**. |
|  | Adequate 2 |  |

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| **X. Evaluation of Program Strengths, Viability and Areas for Improvement:** |
| **1. After completing the APR Self Study, identify areas of strength and areas for improvement in the program. Is the program still a viable program? Discuss the next steps for the program and Action Plan Ideas.** Right now, we are pleased with the growth of our department. Our classes are over-full, and we expect the department to continue this path. Most of our students come from high school FFA and CTE programs. These programs are doing well in Arizona.  | **Were areas of strength and areas for improvement identified? Is an evaluation provided on whether the program is still viable? Were the next steps for the program and action plans identified?** | **Peer Review Feedback:**Be specific “right now”; spell out the date. Links to programs (FFA and CTE).Recommendation: list with strengths and weaknesses, vs paragraph response. Be consistent in key information throughout the review.How is this growth possible with the loss of 2 faculty positions? Seems to take away the previously oft repeated idea that faculty loss has hard hit the program.Also, bringing in some of the data about retention and graduation rates might be good here. |
|  | Adequate 2 |  |

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| **XI. Overall Evaluation of the APR Self Study** |
|  **Are key findings that arose from the analysis and review process clearly presented?** | **Peer Review Feedback:**Do have some major budget limitations due to staffing and greenhouse, tractor, and irrigation systems that affect student learning outcomes and class activities.The programs do recruit well, and seem to have great partnerships with the community. The programs do offer unique features not many other schools offer, like the rodeo team. However, how the program does this had to be extrapolated from what was said in this report. All together, this does raise the question why are most of the students out of state, particularly when Pinal County itself is mostly rural.The program mission and vision statements both need refining. This seemingly small thing does appear to affect the program overall, as some of the actions taken and reported here were done to improve the program (like faculty receiving more education) weren’t explained with enough context to provide reasonable justification with the program’s goals.Another key takeaway was the program doesn’t have a way, whether because of Covid or otherwise, to collect data from students after they have left CAC.Lastly, the transfer information to UA seems to be conflicting, and the program mentioned transfer agreements were in place previously but the current situation is unknown. Their current method of advising is working well, but must be difficult to do with unknown info. |
|  |  | Opportunity for Improvement 1 |
| **Does the review provide a clear direction and vision for the program moving forward?** | It is definitely clear the program is working on increasing student enrollment, especially after decreases due to Covid.They are also aware of and working on fixing mission and program deficiencies to better deliver on program outcomes, stay relevant in the field, and purchase and maintain needed equipment. As far as the need for staffing, that was unclear. Some areas of the report clearly state more faculty is needed, and others report currently there is sufficient faculty. See Section V, parts 1, 2, and 5.It is clear the program is also apprised of what is happening in the area, and made a new degree program (the agribusiness AAS) to meet those demands. |
|   | Adequate 2 |  |
| **Does the review present specific strategies and recommendations for moving the program forward?**  | Successful strategies identified:* The program works closely with advising
* Recruiting efforts, especially the rodeo and FFA field day activities
* Internship partnerships and student placement within the region
* Professional development
* Curriculum review

Program identified strategies for improvement:* Equipment and/or repair that needs to be purchased or done
* Improvements in student assessment with respect to the horse facility project

Reviewer suggested strategies for improvement:* More focus on career placement when students graduate
* Finding and/or firming up certification requirements and transfer relationships and requirements
* Update the program webpage to make sure
	+ All three degree pathways are listed
	+ All contact information is correct, and in multiple locations
	+ The course offerings are current
	+ Include references to the webpage in future reports like this, as the reviewers found some info there that wasn’t in this report (like there’s a full time coordinator for the program)
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|  |  | Opportunity for Improvement 1 |

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| **Scoring Rubric****If all sections were applicable:** |
|  |  | **Opportunity for Improvement 68 and less (69% and below)***If all sections were applicable:*Not all the core criteria were addressed and there was information and statistics missing in many of the self-study areas. A reflection of how the self-study will lead to an Action Plan for improvement was not provided.  | **Peer Review** **Feedback:**Some questions were answered, some questions were answered contradictory to information reported earlier in the document. The provided data was hard to interpret as a reader, more explanation there would be helpful. And some pertinent data was missing. |
| **If 2 of the sections were not applicable:** |
| Exemplary 102 – 87 (85% and above) Same criteria as above | Good 86 - 71 (70 – 85%) Same criteria as above | Opportunity for Improvement 70 - Below (69% and below) Same criteria as above |  |

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| **Identified Strengths and Recommendation for Program Action Plan:** |
| See Section XI |
| **Academic Review Process Insight Statement**Take moment to reflect how this process has helped guide the direction of your program. |
| **It made us look at where we want our program to be in 5 years. We need to continue to apply for grants to increase our hands on skill-based curriculum.** |

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| **Instructions**: In this form, program directors along with the appropriate Dean should indicate any goals or action plans for program improvement over the next 5 years, which have been identified as a result of the academic program review process. |
| **Goal/Action 1: (**Type your goal here.)* Strategic Goals Associated: Add a skill-based propagation lab to AGS 240. By the end of this lab, students will be able to **explain** and **list** the six environmental conditions needed for seed propagation.
 |
| Cost/Resource Implications:Limited cost/resource | Timeline for Achievement:1 Year | Measure of Success:A test question will be added to assess comprehension with an 80% performance.  |
| **Goal/Action 2:** Strategic Goals Associated: Increase Scholarship use through increasing application.  |
| Cost/Resource Implications:No cost.  | Timeline for Achievement:1 year May 2023-May 2024 | Measure of Success:Number of applications for the Faul Scholarship evaluated in May 2024. |
| **Goal/Action 3:** Strategic Goals Associated: Seek funding for a LaMotte Smart 3 Electronic Soil lab.  |
| Cost/Resource Implications:$ 3,246.14 | Timeline for Achievement:1 year | Measure of Success:Purchase and utilize LaMotte Smart 3 Electonic Soil lab in AGS 221 Soils, AGS 235 Sonoran Horticulture, and AGS 240 Plant Biology.  |
| **Goal/Action 4:** Strategic Goals Associated: |
| Cost/Resource Implications: | Timeline for Achievement: | Measure of Success: |
| **One Year Action Plan Update**To be completed each December and submitted to appropriate Dean and Academic Program Review Coordinator |
| Discuss progress made toward Action Plan goals after one year:Submitted by: Update by Fall 2023 |
| **Two Year Action Plan Update** |
| Discuss progress made toward Action Plan goals after one year:Submitted by: Update by Fall 2024 |
| **Three Year Action Plan Update** |
| Discuss progress made toward Action Plan goals after one year:Submitted by: Update by Fall 2025 |
| **Four Year Action Plan Update** |
| Discuss progress made toward Action Plan goals after one year:Submitted by: Update by Fall 2026 |