

ANNUAL
REPORT OF PROGRAM DATA

2022

UNIVERSITY of HAWAI'I

HAWAI'I
COMMUNITY COLLEGE



July 1, 2021 through June 30, 2022

Tropical Ecosystem and Agroforestry Management

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1. Program or Unit Description

Students learn to actively manage Hawai'i's native forest ecosystems, grow native plants, establish agroforestry operations, use Global Positioning Systems (GPS), and Geographic Information Systems (GIS). Internships give students on-the-job training with potential employers. The target student populations are high school graduates and non-traditional students looking for a second career.

2. Analysis of the Program/Unit

[UHCC Annual Report of Program Data \(VARPD\)](#)

During the 2021/22 academic year, the Tropical Ecosystem and Agroforestry Management (TEAM) Program regular courses were not offered due to COVID 19 restrictions and University of Hawaii System wide budget cuts. Therefore, these ARP data do not reflect a normal academic year. See the Annual Report of Program data in the following webpage link: <https://uhcc.hawaii.edu/varpd/>

The demand indicators provided an overall "healthy" condition with a high number of positions offered at the State and County levels. The number of declared majors has dropped as the Program was put on hold, with those students advised to take non-TEAM required courses during the interim. Four courses were taught as directed studies so that a 2nd year students would be able to graduate on schedule.

The demand for natural resource and forestry management positions has been steadily rising as society becomes aware of the relationships between forest ecosystems and climate. There has been several initiatives in recent years to promote forest conservation, reforestation and agroforestry at national and international levels which are also reaching the State of Hawaii as well. This is reflected in the 2020-21 State demand for 165 forestry and conservation technician positions

The indicators for efficiency was reported as "Needs Attention" as the TEAM Program was on hold during this time period and no classes were offered. There are only 5 declared majors with one student who graduated during this reporting period. The Program had a "Healthy" rating for Effectiveness indicators due to previous year's successful persistence, completion and transfer to 4 year institutions.

Before the pandemic, the TEAM program had been growing in terms of declared majors and interest from graduating High School students. The TEAM club was strong with weekly meetings

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and activities. Job offers were coming in constantly from the Natural Resources Community and there were not enough graduates to meet the demand. After 20 years, the TEAM Program has produced over 120 graduates many of whom are now well known and respected professionals in their fields. This is helped to expand agency and industry relationships for our internship program and employment upon graduation.

The hiatus of offering TEAM courses from Fall 2020 through Spring 2022, allowed for the program to undergo curriculum and scheduling redesign that will help to increase program and course enrollment. Most of the TEAM major restricted courses have been modified through the CRC to allow Natural Science majors to also take the course. Also, two TEAM Program courses (AG 175 Agroforestry and AG 245 Silviculture) were designated as Sustainability focused which will encourage more students to enroll.

During this time, a Forest Ecosystem Management directed studies course was able to establish strong relationships with private industry by surveying and designing a 3 acre Agroforestry demonstration site at Pepeekeo for the Hu Honua bio-fuel power plant. This developed into a joint implementation project with the AG Program where both TEAM and AG students prepared the site and planted over 100 fruit trees and dozens of rows with crops to be distributed to food banks and the campus cafeteria.

In addition, TEAM faculty collaborated with the Architecture, Engineering and CAD (AEC) Program to create a Geospatial Remote Sensing (GRS) Certificate which will include 2 existing but newly modified TEAM courses to provide students with up-to-date surveying technology and attract new majors. Funding from NSF to develop this certificate and purchase UAS equipment was awarded in October 2021 and 1st courses will be offered in Fall 2023 semester.

TEAM faculty have worked closely to articulate courses with both CAFRM and the Geography and Environmental Science department at UH Hilo, with new proposals submitted for consideration in the Fall of 2022.

During the Fall 2022 semester when the first TEAM course was officially offered, there were 12 students enrolled with 7 new TEAM majors joining the two existing students and three others joining from Natural Sciences.

Although, the TEAM Program is not technically a CTE program, it did meet all of the Perkins indicators that were applicable. These include 1P1 Post-Secondary Placement, 2P1 Earned Recognized Credential and 3P1 Nontraditional Program Concentration. The TEAM Program works closely with CTE programs such as AG and AEC and recently worked on proposals for funding for a shared AG / Forestry Facility on 17 acres at the CTAHR Waiakea Research which would include an educational sawmill and expanded agroforestry operations.

One of two primary instructors for the TEAM Program is on sabbatical from Aug 2022 until Aug. 2023 and it is anticipated that lecturers will have to be hired to fill courses they usually teach. Support from USDA funding has allowed for 2 student workers and one APT to assist with greenhouse and field logistics.

3. Program Student Learning Outcomes or Unit/Service Outcomes

a) List of TEAM Program Learning Outcomes with alignment to Institutional Outcomes (ILO's)

- a) **Apply basic ecosystem concepts to natural resource management – ILO 6**
- b) **Use an understanding of general scientific concepts in design of forestry systems. – ILOs 2, 6**
- c) **Use knowledge of applicable laws and regulations to make decisions about managing ecosystems - ILOs 4, 6**
- d) **Apply effective interpersonal and communication skills - ILOs 1, 5**
- e) **Recognize, collect, and interpret field data - ILO 6**
- f) **Apply effective management practices to commercial or conservation efforts - ILOs 3, 6**

ILOs

1. Communicate effectively in a variety of situations.

2. Utilize critical thinking to solve problems and make informed decisions.

3. Apply knowledge and skills to make contributions to community that are respectful of the indigenous people and culture of Hawai'i island, as well as other cultures of the world

4. Utilize quality comprehensive services and resources in the on-going pursuit of educational and career excellence.

5. Produce and perpetuate safe, healthy learning and professional environments that are respectful of social and individual diversity.

6. Contribute to sustainable environmental practices for personal and community well-being

- b) List the PLOs or UOs that have been assessed in the year of this Review. No assessment of TEAM Program courses were made as only directed studies courses were offered during this time period. GEOG 170 and 170L was scheduled to be assessed in Spring 2022 semester but will be rescheduled for Spring 2023.
- c) TEAM Program courses that will be assessed next year will include AG 175 / 175L (taught in Fall 2022), AG 245 / 254L and GEOG 170/L (both will be taught in Spring 2023).
- d) Assessment Results:– N/A
- e) Changes that have been made as a result of the assessment results: N/A

4. Action Plan

Based on findings in Parts 1-3, develop an action plan for your program or unit from now until your next Review, or as appropriate, update the action plan provided in your last Comprehensive Review.

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The TEAM Program's action plan will be to offer the 1st semester course, AG 175 and 175L in the fall of 2022 and then to offer 1st and 2nd year courses in 2023 spring and fall semesters. This will allow the two existing majors to blend with the 7 new majors to achieve higher enrollment and allow them to graduate on schedule. Recruitment will also be extended to Natural Science Majors and Liberal Arts major who are interested in Sustainability Focused or Biological Science designated courses.

In the Fall of 2023, the 1st pair of Geospatial Remote Sensing (GRS) courses will be offered as experimental status while their modifications are being approved by the CRC. The same pattern will occur for the Spring 2024 semester with the 2nd pair of GRS courses offered with the new cohort of TEAM majors being able to graduate if they had already completed non-program specific courses during the hiatus. The newer students will likely need another semester.

By Fall of 2024, it is anticipated that the GRS certificate of competence will be official and TEAM Program students could add that on to their AS degree by only taking 2 extra courses. Articulation agreements with UH Hilo and Manoa will be expanded as much as possible. Planned collaboration with the Waiakea CTAHR Research Station will expand opportunities for our graduates interested in careers in agroforestry and forest products processing.

The Program will also continue to work with private industry to help fulfil the pipeline of students into that sector. Faculty have participated for many years with the Work Hamakua task force which works to support a wide diversity of Ag related industries from the region. The Agroforestry project with Hu Honua connects students with local agri-businesses and commercial forestry. Another partner is the Hawai'i Forest Industry Association with whom the TEAM Program plans to work with to establish an educational saw mill at the CTAHR Waiakea station.

Efforts to extend TEAM courses to the Pāalamanui campus have been renewed as previously done when the West Hawai'i campus was located in Kealakekua. Locations to conduct lab exercises and lecturers have also been sought out. As part of the new GRS certificate, it is planned to use the Pāalamanui Dry Forest as one of its focus survey sites which will hopefully attract West Hawai'i students to take program classes and instructors to help teach the classes.

The Program will also expand recruitment through its Instagram account that has many followers and by improving the HawCC Program website to include new program projects examples of successful graduates. It is hoped that by 2023 there will be full enrollment of 16 students in TEAM classes. An added bonus would be for the Pāalamanui campus to also have a TEAM cohort as well.

Specify how the action plan aligns with the College's Mission and Strategic Plan. Include a discussion of how implementing this action plan will contribute to the College achieving the goals of the Strategic Plan.

<https://hawaii.hawaii.edu/sites/default/files/assets/docs/strategic-plan/hawcc-strategic-directions-2015-2021.pdf>

This plan fits in well with the College Mission as it is modifying both its courses and program to update curriculum to meet current labor demands. The need for unmanned aerial system operators

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has become very important in the last few years and incorporating this new certificate into the TEAM program will be a valuable assets to our graduates. Also by coordinating with other UH Colleges and departments such as CTAHR and UH Hilo CAFNR, we are providing our students with more educational opportunities. And by working closely with the private sector we are training graduates that will be able connect with significant internships and employment. Finally, the program supports our environmental and cultural missions by training our students to understand how to manage our natural resources in a way that is ecologically responsible and culturally respectful.

*The action plan may be amended based on new initiatives, updated data, or unforeseen external factors between now and the next Comprehensive Review.

5. Resource Implications

*** Special Resource Requests not included in operating “B” budget ***

Detail any special, one-time or personnel resource requests in the categories listed in the table below that are not included in your regular program or unit operating “B” budget.

*Note: CTE programs seeking future funding via UHCC System Perkins proposals must reference their ARPD Section 4. Action Plan and this ARPD Section 5. Resource Implications to be eligible for funding.

I am NOT requesting additional resources for my program/unit.

I AM requesting additional resource(s) for my program/unit.

Total number of items being requested: 3 (4 items max.)

*For each item requested, make sure you have gathered the following required information and all relevant documentation before you upload this Review; you will submit all information and attachments for your **Resource Request** as part of your Review document submission via the

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<https://hawaii.kualibuild.com/app/builder/#/app/60ef56c477b0f470999bb6e5/run>

- ✓ **Item Description – GPS receivers**
- ✓ **Justification – Needed for Field Mapping course**
- ✓ **Priority Criteria** (must meet at least one of the following):
 1. **Address aging infrastructure.**

- ✓ **Item Description – Security Cameras**
- ✓ **Justification – Needed to prevent theft and vandalism**

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- ✓ **Priority Criteria** (must meet at least one of the following):
 - 2. Address and/or mitigate issues of liability, including ensuring the health, safety and security of our **Kauhale.**
- ✓ **Item Description – Electrical outlet**
- ✓ **Justification – Needed to operate electrical tools in the greenhouse and agroforestry area**
- ✓ **Priority Criteria** (must meet at least one of the following):
 - 5. Leverage resources, investments with returns, or scaling opportunities

CATEGORY	Category-Specific Information Needed			
Equipment	Estimated Date Needed -Feb 28, 2023	Quantity / Number of Units 10 ; Cost per Unit \$400 ea.	Total Cost (with S&H, tax) \$ \$4,150	On Inventory List (Y/N); Decal #, Reason replacing
Facilities Modification	Estimated Date Needed - ASAP	Total Cost \$1,000	Yearly Recurring Costs- \$100	Utilities Required Internet connection
Facilities Modification	Estimated Date Needed – May 5 2023	Total Cost \$500	Yearly Recurring Costs- \$100	Electricity

6. Optional: Edits to Occupation List for Instructional Programs

Review the Standard Occupational Classification (SOC) codes listed for your Instructional Program and verify that the occupations listed align with the program learning outcomes. Program graduates should be prepared to enter the occupations listed upon program completion. Indicate in this section if the program is requesting removal or additions to the occupation list.

I am NOT requesting changes to the SOC codes/occupations listed for my program.

I am requesting changes to the SOC codes/occupations listed for my program.

[O*Net CIP-SOC Code Look-up](#)

in the **Crosswalks box, choose “Education,” then enter CIP number to see related SOC codes*

List below each SOC code for which change is being requested and include details of requested code deletions and/or additions. Include justification for all requested changes.

*All requested changes to the SOC codes/occupations listed for programs must be discussed with and approved by the Department/Division Chair.

