

Maui Community College 2006 Annual Assessment Report

AGRICULTURAL & NATURAL RESOURCES PROGRAM

A.A.S Horticulture and Landscape Maintenance

A.A.S. Sustainable Tropical Crop Management

Maui Community College Mission Statement

Maui Community College is a learning-centered institution that provides affordable, high quality credit and non-credit educational opportunities to a diverse community of lifelong learners.

Agriculture Program Mission & Vision Statement

We envision a program that will provide high quality instruction in agriculture, horticulture and natural resource management with an emphasis on sustainability.

PART I. Executive Summary of Program Status

We were successful in achieving several of our own goals in the last program review. We held another very well received Agriculture and Natural Awareness Days. The first day over 200 high school students attended demonstrations, lectures and exhibits from industry. Another day MCC with high school students put on an educational day of activities for 50 preschoolers.

We worked with the grant coordinator and Lau'ulu staff and a grant has been secured to support the development of a Hawaiian Studies/ Natural & cultural resources degree. SLIM has hired a director and we look forward to working with SLIM to develop curriculum in sustainable horticulture.

The faculty have developed a much greater understanding of SLO's and can now use them in a framework that may help articulation and program revisions and development. The tissue culture lab has stalled, however a possibility to develop a joint lab with an area high school looks promising. Strict adherence to course sequence has facilitated graduation of several AAS students and others in getting certificates.

Our ability to be self-supporting in providing funds for supplies and to do outreach programs have enabled us to maintain high quality activities in our classrooms.

A new colored brochure has been completed by our Media center which we hope will aid us in recruitment. We plan to do more community outreach so that more Maui County folks become aware of our program.

PART II. Program Description

History:

Under the guidance of Professor Emeritus Ernest Rezents, the Agriculture Careers program was approved by the Board of Regents in 1975 and reviewed and given

recommendation to continue by the BOR in 1978. Fields and a greenhouse were added by students and the college. Classes shared space in the Science building. In 1994, the program saw a major upgrade in facilities when the new agriculture classroom building and greenhouse were dedicated. At one time 2 full-time Maui faculty and an APT were assigned to the agriculture program. Since 1995 there has been one full-time faculty and one APT at the Maui campus. From the 70's into about 1990 there was an emphasis on production agriculture as well as landscape horticulture. As interest and opportunities in production agriculture have decreased there has been a shift to greater emphasis on horticulture and landscape horticulture as well as natural resource management. As more interest in sustainable agriculture and seed production has grown, the program may again become more involved in both sustainable production agriculture as well as sustainable landscape horticulture. More opportunities in resource management are likely to increase the emphasis in courses and perhaps a degree in this area in the future.

The Molokai facility was taken over in 1981 when the opportunity arose to acquire these facilities from Molokai Agriculture Institute (MAI) when the federal grant funds for this program were no longer available. The farm is shared with the UH CTAHR extension service. At one time one full-time faculty and two APT's ran the farm. Currently only one full-time faculty is employed on Molokai to teach and run the program. The emphasis in the Molokai program has continued to be production agriculture due to the economy and availability of land – both private, Molokai Ranch and Hawaiian Homesteads. With the increase in new residents in high-end homes, the opportunities for students in landscape careers will also increase. The Molokai program has also turned to short term training sessions as well as the more traditional semester long 3-4 credit courses.

Program goals/Occupations

The Agricultural & Natural Resources program provides instruction for those wishing training, retraining, or skills upgrading in the fields of agriculture, horticulture and natural resource management and for those wishing to transfer to a four year college or university.

The A.A.S. degrees prepare students for mid-level entry positions and entrepreneurship. Some of the occupations these degrees prepare students for such positions as: Assistant Golf Course Superintendent, Sod Farm Manager, Assistant Horticulturalist, Agriculture Field Technician, Landscaper, Landscape Manager, Landscape Maintenance Supervisor, Landscape Business Operator, Landscape Designer, Nursery Manager, Nursery Operator, Farm Manager, Farmer, Natural Resource Field Technician, Agriculture Inspector.

Program SLOs

See attached appendices.

Admission requirements

Maui Community College has open enrollment. The Agriculture & Natural Resources program has no other special admission requirements. This allows a wide range of students to come for instruction since students often have various goals that include simple upgrading of skills in one particular area.

Credentials Offered:

Credentials are offered in five areas: a Certificate of Completion as a Turfgrass Specialist; Certificates of Achievement in Nursery Management and in Floriculture Management; a Certificate of Achievement and an Associate in Applied Science degree in Horticulture & Landscape Maintenance; and a Certificate of Completion, Certificate of Achievement, and Associate in Applied Science in Sustainable Tropical Crop Management.

Faculty and staff

Full Time Faculty:

Ann Emmsley– Maui Campus, Associate Professor
BS Environmental Resource Management, The Pennsylvania
State University, MPPPM The University of Georgia

James Boswell – Molokai Campus, Assistant Professor
BS Brigham Young University at Provo

Staff:

William Jacintho – Maui Campus, APT
A.S. Horticulture, Maui Community College

Lecturers:

Jonathon Willing – Maui Campus, AG 260 Turfgrass management
Assistant Superintendent Kamehameha Golf Course
B.S. Horticulture UH Manoa, Certificate in Golf Course
Management – The Pennsylvania State University

Resources:

Diverse learning activities are provided at facilities both on Maui and Moloka'i. The Maui facility includes a lab classroom and lab preparation room, a 10,700 square foot greenhouse, 2 acres of turfgrass including a golf green, fairway and rough, and a 1.5 acre vegetable field. The students and staff raise almost all the money for supplies and equipment used by the agriculture program. Sales of products – poinsettias and plants every December and sales of other crops –vegetable or flowers depending on courses taught – provide funding into a revolving account which allows the purchase for next year's supplies to grow these crops as well as enough profit to buy classroom supplies and project supplies. The Maui facility also has two UH Foundation accounts provided by donations – these allow for faculty and staff development, funds for meeting supplies and support outreach educational programs such as the High School and pre-school Agriculture and Natural Resources Awareness Day. One fund was established by the

“Ulupalakua Thing” to support student Awards and activities. However this source of funding has dried up as this event is now longer being held.

The Moloka'i facility includes a 5,000 square foot greenhouse, orchards, and vegetable fields on 28 acres of land. With a HUD grant the Molokai facility is undergoing a renovation so that it will meet health and safety standards and have a better learning environment. The Molokai farm also makes its own money via a revolving fund and is currently trying to “pay back” water bills imposed on the program by the college.

Articulation agreements

AG 200 Introduction to Horticulture is articulated with corresponding courses at UH Manoa, UH Hilo, Hawaii Community College, Kauai Community College and Windward Community College.

An articulation agreement in 1999 between MCC Ag and UH Hilo CAFRM was never officially signed, however, has been the basis for informal articulation between Hilo and MCC. This has benefited a number of students.

Articulation is an on-going process, with the advent of SLO's and the work of Dr. Bill Sakai and Carol Pang was looking quite positive in 2005-2006 that many courses at UH Hilo would be officially articulated with MCC, HCC and Windard.

Community connections

William Jacintho, the APT on Maui has been cultivating many community connections. He is a member of the Mayor's Advisory Committee on Agriculture, the County Arborist Committee, and serves on a grant committee with NRCS. He is also the first cattle producer in Hawaii to be certified organic.

Ann Emmsley is an active member of the Maui Association of Landscape Professionals. She also is serving on a granting committee for Tri-isle RC&D.

Many industry connections are made while developing and holding the Agriculture and Natural Resources Awareness Day.

Advisory Committee

Cheryl McGrath, Dekalb-Pfizer Genetics Corp
Norman Nagata, UH Extension Service
Reny Platz, Maui Tropical Plantation
Bobby Brooks, Maui Tropical Plantation
Lionel Brash, Maui Lani Golf Course
Russell Dooge, Waikapu Golf Course
Dan Honma, Makena Golf Course
Douglas Myer, Waiehu Golf Course
Steve Olsen, Wailea Golf Course
James Tavares, The Grassmaster

Internships

Many internships are available from students. For example, Maui Land & Pineapple have had internships the last 3 years. However, most agriculture students are already working in the field, so internships have not been very attractive to these students.

DOE Connections

Ann Emmsley serves on the Natural Resources Career Pathway Advisory Board for the DOE.

The MCC department works closely with the high school agriculture teachers in the development of the Agriculture and Natural Resources Awareness day.

Distance delivered/off campus programs

Molokai is off campus. Distance-ed in agriculture at MCC has not been offered recently.

Part III. Quantitative Indicators for Program Review

1. Predicted Annual Job openings in Maui County: 38+
2. Predicted Annual Job openings in the State: 222+
3. Number of Applicants: *Not Applicable*

4. Number of Majors:

| Program | F01 | F02 | F03 | F04 | F05 |
|------------------------------|-----|-----|-----|-----|-----|
| Agriculture & Natl Resources | 35 | 31 | 26 | 18 | 34 |

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6. Student Semester hours for program majors in all program classes: *Data not available at this time.*
7. Student Semester hours for all program classes: *F05: 254*
8. FTE program enrollment: *F05: 17*
9. Number of classes taught: (Maui) *Fall 05: 3 Spring 06: 3*
10. Average Class size: *17*
11. Class Fill Rate: *Date not available at this time*
12. FTE of BOR appointed faculty: *Data not available at this time.*
13. Semester credits taught by lecturers: *3*
14. Percent of classes taught by lecturers: *16%*
15. FTE workload: *F05: 1.5*
16. Major per FTE faculty: *34/2*
17. Number of Degree/Certificates awarded in previous year by major: *Data not available at this time. However 4 AAS degrees were awarded spring 06.*
18. Cost of Program per student major: *Data not available at this time.*
19. Cost per SSH: *Data not available at this time.*

20. Determination of program's health: *Last year's status:*

- a. Overall Program Status: *Healthy*
- b. Overall Program Demand: *Cautionary*
- c. Overall Program Efficiency: *Cautionary*

Outcomes

- 1. Attainment of Student Educational Goals: *100%*
- 2. Persistence of majors Fall to Spring: *Data not available at this time.*
- 3. Graduation Rate: *data not available at this time for Sp06*
- 4. Transfer Rates: *Data not available at this time.*
- 5. Success at other UH campuses: *Data not available at this time.*
- 6. Licensure information: *Not applicable.*
- 7. Perkins Core Indicators: *Data not available for 2005-2006 Last year's data:*
(Maui & Molokai) baseline in ()
 - 1P1: Academic Achievement: 80.00% (81.56%)
 - 1P2: Vocational Skills: 100% (91.53%)
 - 2P1: Diploma/Equivalent/Degree/Credential: 27.27% (35.70%)
 - 3P1: Placement Employment: 100% (70.52%)
 - 3P2: Retention Employment: 100% (90.13%)
 - 4P1: Nontraditional Participation: 37.50% (15.94%)
 - 4P2 : Nontraditional Completion : 33.33% (14.34%)
- 8. Determination of a Program's Health Based on Outcomes :
 - a. Overall Program Outcome: *Healthy*

Part IV. Assessment Results for Program SLO's.

Appropriate assessment tools have not yet been developed for the Ag Program SLO's, therefore no data is available at this time. As a first step, a grid for the current Program SLO's was recently developed. See Appendix A.

Part V. Curriculum Revision

Curriculum was reviewed in the SLO process extensively in 2004-2005. (see program review of that year) Meetings were held with UH Hilo faculty and the faculty of HCC and Windward to look at common SLO's and articulation. This work needs to proceed, however some difficulty in articulation with 100-200 level courses with the AG courses at the 4-year institutions is difficult since all the comparable courses there are numbered 300-400.

Attended a Ruth Steihl workshop – gave ideas for revamping program map and SLO's. However would like to do this in conjunction with the other CC and 4-year programs rather than in isolation so this is a slow process.

No other curriculum revision was carried out in 2005-2006.

PART VI. Survey Results

1. Student satisfaction
2. Occupational placement in jobs (for CTE programs)
3. Employer satisfaction (for CTE programs)
4. Graduate/Leaver (for CTE programs)

No survey has been conducted so no data is available at this time.

Part VII. Analysis of Data

Alignment with Mission

The Maui Community College Agriculture program strives to keep our courses rigorous and relevant. We are working to incorporate sustainability issues and solutions into all of our classes. We taught our Sustainable Tropical Crop production class in Spring 06 and ran a very successful diversified market garden, rather than a few intensive crops, which we grew and marketed in creative ways. We look to our participation in SLIM and a new director to help us continue to improve our curriculum in the area of sustainability. The methods for eco-effective landscaping needs to be further explored, taught and demonstrated.

Strengths

The data supports the continued demand for trained people in agriculture including landscape and horticulture in the State and Maui County. Projections of 4000 new housing units on Maui by 2007 can only mean an increase in demand for landscape services and nursery support. High-end real estate also tends to have higher demands for these kinds of services; therefore one could predict an increase in demand for people trained in the areas of landscape horticulture on Maui. Production agriculture could have great potential but factors such as high land and labor prices leave the future of production agriculture much harder to predict. An area that also employs agriculture students that is not included in the labor statistics is in the natural resources management fields. We are currently working with Hawaiian studies faculty to look at developing a natural resources degree with a strong cultural component.

Perkins Data indicate high levels of skill attainment, employment placement and retention as well as non-traditional student participation. Students are satisfied with the attainment of their educational goals.

Fortunately, the MCC agriculture program has been able to generate income. The past ten years or more we have funded almost 100% of our supplies via our own revolving or foundation funds. Our plant and vegetable sales generate enough income to pay for not only the supplies needed to run our labs, but also things like books and videos and computers.

The Ag curriculum is diverse. A variety of courses are offered that encompasses very

different types of knowledge and expertise. The program offers evening classes to facilitate in-service training. Most courses (exceptions are those requiring daylight for field work) are offered at night at least every two years, so that people working full-time can access training and/or a degree.

Weaknesses

Low Enrollments is the major weakness of the agriculture program. With job demand at an all time high the incentive to obtain a degree and/or skills upgrading is not great. Particularly in our fields jobs for AAS level students may prefer this credential or training but these are not absolute requirements to getting hired. Agriculture is not a popular or “glamorous” field at this time. Recruitment of new students in this field is difficult. Number of majors is not the only indicator of persons taking agriculture as non-majors and life-long learners also take classes.

The low graduation rate is a reflection of many students who are attending to upgrade their knowledge in specific areas and do not intend to pursue a degree. It also is due to the very low rate of full-time students. Most students work full-time and take one or two courses per semester, so it takes many years for them to acquire a degree.

Only one full-time instructor teaches many of the courses. With such a wide array of fields and disciplines covered by the courses in the Agriculture program it is difficult for one person to stay “up-to-date” with all of these areas. The lack of support for lecturers is part of this issue as well.

Evidence of Quality

The agriculture classes are above 100 level. Transfer students have been able to use their credits for transfer at UHH. Students that do transfer there have been successful. The agriculture department gets many requests for students for employment and offers of partnerships to do projects. Unfortunately since we are so small we can only occasionally fill those requests. The employment rate and employment retention rates noted on Perkins data, support the quality of our program and students.

Evidence of student learning

Valid assessment tools need to be developed.

Resource sufficiency

A laboratory based program like agriculture is expensive and consumes quite a bit of supplies and requires expensive equipment. As mentioned, the agriculture program has been fairly self-sufficient in earning supply money. The department has tried very hard to use its funds judiciously. The department has also made an effort to acquire equipment that, as a small program, was unlikely to get from the campus budget such as a laptop computer, digital camera, and LCD projector so that teaching methods could be updated,

with funds the department generated rather than relying on G-funds. This of course helps support other programs by not utilizing any of the supply or equipment funds from the science or vo-tech departments. Another example, our current goal is to upgrade staff and student computers so we are trying to sell more plants in our sales.

Fortunately we have some of our large equipment like a tractor from the past. Turf equipment has been problematic. It is very expensive (\$30,000 +) but without it we cannot properly maintain our turf area. The turf area has duly suffered. There are other areas such as the greenhouse and grounds that could use more attention. The need for student help money is ongoing and a challenge.

Another goal is tissue culture – this requires a lab. We do have a USDA grant (\$19,000+) to pursue this area. Time of the only instructor/program coordinator/ SLIM committee member has been the stumbling block. If there are specific educational projects, there does seem to be some grant money available for agriculture programs.

Recommendations for improving outcomes

Continue updating course contents and to keep them relevant to the students and potential jobs. Need to increase recruitment and connections with high schools and industry.

More time in the classroom improving teaching and teaching methods. Support for curriculum improvement. Time of a small staff is the major issue here. Developing valid assessment and carrying out assessment in a “feedback loop” is made difficult by the various demands on time and distractions of purpose. The new coordinator for assessment will undoubtedly be a great help in developing valid assessment tools in the years to come.

Action Plan

1. Agriculture and National Resources Awareness Day in cooperation will now be held every other spring to assist with high schools for recruitment and promotion of careers and education.
2. Investigate the creation of a tissue-culture lab, in conjunction with a USDA grant. The lab could be used by Biotech instructors. Investigate partnering with Baldwin High School to create a lab MCC and the high school could use. Better utilization of resources.
3. Continue working with Lau’ulu, the MCC Hawaiian faculty and staff hui, towards development of natural resource interdisciplinary degrees at the College. Will work with Ho’okahua and USDA CREES grant to explore this type of degree.

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4. Maintain rigid 2-year cycle for course offerings. This helps students plan and seems to help course enrollment figures.

5. Work with Assessment coordinator to develop some assessment tools..

6. Revise SLO's (and course content) as needed to allow for real assessment and to meet articulation agreements that may be forged.

Budget Implications

Release time, lecturer funds and student help funds would seem to be the most immediate funding needs in order to accomplish the action plans above. Equipment needs are always there but are less pressing at this time.

R-funds and foundation funds will continue to be tapped and developed for "day-to-day" expenses. This is one of our ways we try to contribute to the college.