

ANNUAL REVIEW

AY 08-09

AGRICULTURE & NATURAL RESOURCES PROGRAM

MAUI COMMUNITY COLLEGE

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Program Coordinator

AGRICULTURE & NATURAL RESOURCES PROGRAM

MAUI COMMUNITY COLLEGE

INTRODUCTION: MISSION & VISION STATEMENTS

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.

We envision a world-class college that meets current and emerging Maui County education and training needs through innovative, high quality programs offered in stimulating learning environments.

The College mission, goals, and actions will be guided by the Native Hawaiian reverence for the ahupua`a, a practice of sustaining and sharing diverse but finite resources for the benefit of all.

In keeping with the mission of MCC, 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. Therefore the vision statement for the Agriculture and Natural Resource Program mirrors that of the college:

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

In an effort to meet our mission and the needs of employers and students, we have developed Program Learning Outcomes (PLO's). These are based on Ruth Stiehl's model of having three to five overarching PLO's. These PLO's are consistent with the agriculture program at Hawaii Community College. The Agriculture and Natural Resources program also covers the General Education for the campus (CCOWIQ's). The following are the PLO's for a graduate with an A.A.S. in the Agriculture and Natural Resources program:

Use basic business principles to manage projects or design a horticultural business enterprise.

Recommend cultural practices, solve problems, plan projects, and cultivate horticultural crops in a sustainable manner based on sound biological and technological principles.

Explain the relationships between agro-ecosystems, economics, human culture, and natural environments.

Design gardens that demonstrate aesthetic principles. (Landscape & Horticulture only)

These PLO's were validated by our Advisory Committee in Spring 2009. The courses have been analyzed to ensure the PLO's are met (see attached grid). An assessment plan has been developed. (see attached) Assessment will use embedded assignments and rubrics. The coordinator will be working with Jan Moore in AY 09-10 to stay on track and make refinements.

PART I QUANTITATIVE INDICATORS

DEMAND

1 & 2. New and Replacement Positions

	06-07	07-08	08-09
New & Replacement Positions (State)	2,459	1	376
New & Replacement Positions (County Prorated)	438	0	22

As seen from one year to the next there are wild swings in this data that is used the determinate of program health. In 07-08 apparently there was a change in how the data was determined based on an SOC code chosen by someone without consultation of the PCC. There is a marked improvement in this year's data. This is due to an effort by the Program Coordinator to identify and ask for inclusion of additional SOC codes in Spring 09 that are appropriate for MCC agriculture graduates. The ones that were finally submitted are shown below:

Majors – CIP to SOC

(revised 5/15/09)

Major	Major Description	Classification Instructional Program (CIP)	Accompanying SOC	CTE Deans Designated SOC	Revisions
AG	Agriculture & Natural Resources	010301	119011	119011	See comments*

*For the AG program we recommend including 119012 (farmers and ranchers), 451011 (supervisors), 452011 (inspectors), 194011 (ag tech), 452092 (farm worker) with PCC decision.

However there is still the continued impression that "farmers and ranchers" are the sole form of employment for Agriculture & Natural Resource Program graduates. Despite some of the added codes, the SOC codes that were included and the EMSI data still do not reflect the landscape industry. The

landscape or “green industry” is by far the largest single agriculture sector in the state. Independent landscape entrepreneurs are clearly left out of this SOC data and probably are not reflected in any national or state data base. Also a segment of natural resource management jobs that are available to Agriculture and Natural Resource graduates do not seem to fall into an SOC category and are not included in this data set. Therefore it is strongly asserted that the number of new and replacement positions are under-reported. This indicates that there is demand for workforce development in these fields that Agriculture and Natural Resources serves. Despite this lack of appropriate data, the number of majors divided by number of county jobs listed still gives a ratio of 1.41. This is only slightly below the 1.5 ratio required for **healthy** designation. Therefore I would argue the landscape sector alone, if it could be captured, would boost the number easily into a **healthy** category.

The downturn in the economy has had an effect on this sector of the economy. Slow growth in the seed industry and local small food producers is anticipated. Landscape and resource management will probably be slower to recover due to lack of new housing starts, belt tightening by consumers and reduced government spending. Therefore it may be expected that for a year or two, employment data in these various fields will reflect the decrease in economic activity and may even decrease a bit in next year’s data. However since these are all sustainable or “green” industries, these sectors are likely to improve after the worst affects of the recession abate.

3. Number of majors

	Fall 2005	Fall 2006	Fall 2007	AY 08-09
Number of Majors	34	31	37	31

The number of majors declined 16% from Fall 2007 till 2008. In Fall 2008 unemployment was still strong. Recruitment and retention are vital to increase the number of majors. Therefore a Perkins grant was obtained to hire a student assistant in Fall 2009 to assist in attracting more majors into this program.

4. Student Semester Hours for program majors in all program classes

	Fall 2005	Fall 2006	Fall 2007	AY 08-09
AG & Natural Resources				
SSH Program Majors in Program Classes	134	113	80	164

In examining course enrollment from 2002 to 2008, enrollments mirror the economy. As the economy heated up in 2005, enrollment numbers dropped through 2008. The downturn began in Fall 2008. I noticed students were still employed, but they were not working overtime or were able to have more flexible schedules allowing them to take classes. Therefore the numbers based on two semesters held relatively steady from AY 07-08 to AY 08-09.

5. Student Semester Hours for non-program majors in all program classes

	Fall 2005	Fall 2006	Fall 2007	AY 08-09
AG & Natural Resources				
SSH Non-Majors in Program Classes	93	98	113	281

The number of non-majors taking agriculture classes has steadily increased. (represents an approximate increase of 48% increase from AY 07-08 to AY 08-09 if you assume Spring 08 would be the same as Fall 07) This is in partly due to having AG 200 both count as a Natural Science lab course (Environmental Awareness) for liberal arts majors and a writing intensive class. In addition, other majors such as Sustainable Technologies will take agriculture classes as part of their studies. It is clear that the Agriculture program is a CTE program that serves a broader section of campus than just agriculture majors. This should be taken into consideration when evaluating program health.

6. Student Semester Hours for all program classes

	Fall 2005	Fall 2006	Fall 2007	AY 08-09
AG & Natural Resources				
SSH in All Program Classes	227	221	193	445

The number of semester hours for AY 2008-2009 has increased 30% from Fall 07 – or an average of 15% per semester. This reflects non-major participation. It also is a reflection of the interest in sustainable living and food security.

7. FTE Program Enrollment

	Fall 2005	Fall 2006	Fall 2007	AY 08-09
AG & Natural Resources				

FTE Enrollment in Program Classes	15.13	14.07	12.87	15
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This data allows comparison to the previous table as it is the SSH in all program classes divided by 30 for AY 08-09 or 15 for the Fall census numbers in previous years. The 2% increase in FTE. This increase in student served should be considered in program health.

8. Number of Classes Taught

AG & Natural Resources	AY 08-09
Total Number of Classes Taught	14

It is worth mentioning that these courses are taught on separate islands. On the Maui Campus 8 classes were taught by the one Agriculture Program faculty (11 credits fall & 13 credits in Spring). The long contact hours of agriculture classes reduces the number of credits taught per faculty and which also can limit the number of students (less classes =less students) to some degree compared to programs with more faculty. The single faculty on Molokai has other duties as well as a limited pool of students. Because of distance, costs of travel, and hands-on nature of Agriculture courses it is difficult to “pool” the efforts of the Agriculture faculty on these two islands when it comes to instruction of students.

9. Program Health

The program health for demand is deemed **cautionary**. However, other demand data that are not included in the SOC codes such as landscaping and individual entrepreneurs as well as the close to healthy job ratio (1.4 vs. 1.5 for healthy) would indicate that the program could reasonably be rated **healthy**. The non-majors demand data also supports a healthy designation. The services that the Agriculture and Natural resources provides to non-majors for natural science credits should be considered when evaluating program health.

EFFICIENCY

10. Average Class Size

	Fall 2006	Fall 2007	AY 08-09
AG & Natural Resources			
Average Class Size	9.63	10.88	11.4

Average class size is slightly above the minimum 10 students per class. The average class size has increased slightly the past three years which is a sign of health since the economy was still strong through Fall 2008, meaning many majors were fully employed and unable to take a full load.

11. Class Fill Rate

	Fall 2006	Fall 2007	AY 08-09
AG & Natural Resources			
Fill Rate	56.62	54.04	63%

The class fill rate has increased slightly over the past year.

12. FTE of BOR appointed program faculty

FTE BOR Appointed Faculty	2.0
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The program has one FTE faculty on the Kahului campus and one faculty assigned to Molokai.

13. Student/Faculty Ratio

	Fall 2005	Fall 2006	Fall 2007	AY 08-09
Agriculture & Natural Resources				
Majors to FTE BOR Appointed Faculty	0	0	18.50	15.3

This measurement just puts the program in healthy range. More majors would be desirable. However, it is important to remember that for this particular CTE program, non-majors enroll in classes, so looking strictly at a majors/faculty ratio is not a complete picture of the number of students served per faculty member.

14. Number of Majors per FTE faculty

	Fall 2005	Fall 2006	Fall 2007	AY 08-09
Majors to Analytic FTE Faculty	34.00	22.14	29.13	24.2
Analytic FTE Faculty				1.3

This number reflects the program coordinator using 3 credits of release time during the year. No lecturers were hired on the Kahului campus AY 08-09 for the agriculture program.

15. Program Budget Allocation (Personnel, supplies and services, equipment)

Agriculture & Natural Resources	AY08-09
Overall Program Budget Allocation	C/P
General Funded Budget Allocation	C/P
Special/Federal Budget Allocation	C/P

It is important to note the sustainability of the Agriculture & Natural Resources program. Like many CTE programs, this program requires substantial supplies and equipment to produce a meaningful educational experience for students. The Agriculture & Natural Resources program grow products as part of Learning Outcomes for students in several classes. The revenue generated by these sales provides all the supply money for this program: pots, fertilizer, small hand tools, irrigation equipment, seeds, etc. as well as classroom supplies such as books, CD's, and even the computers used by the faculty and staff. This allows the G funds that would need to be allocated to this program be distributed to other classes in the STEM department that are not capable of generating revenue.

In Spring 09, for the first time, the program received Federal Perkins money to purchase some specialty pruning and power tools for the program.

16. Cost per Student Semester Hour

Cost per SSH	C/P
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17. Number of classes that enroll less than ten students

	Fall 05	Fall 06	Fall 07	AY 08-09
Number of Low-Enrolled (<10) Classes	2	3	6	5

The number of low enrolled classes decreased (5 in two semesters). One class included in this year's data, AG 232 Tractor Operation offered in Fall 08, has a maximum enrollment of 5 so this needs to be considered in this number. Two other courses offered in Kahului in Fall 09 had 9 students each. Molokai accounts for the other two courses, one of which may have been a tractor class.

18. Determination of program's health based on Efficiency

The program is **healthy** based on Efficiency.

EFFECTIVENESS

19. Persistence of majors fall to spring

	2005	2006	2007	AY 08-09
Agriculture & Natural Resources				
Persistence (Fall to Spring)	67.65	61.29	45.95	56%

Persistence rose 10% last year. This is still in the cautionary range – missing the 60% mark by only 4% (probably translates to one student not returning in the Spring). It should be noted that there are students who take Agriculture classes just to obtain specific knowledge from a class. We encourage them to sign as Agriculture majors since this is their area of interest yet at the same time they do not intend to obtain a degree. An example is the AG 174 Insects and Their control that was offered in Fall 08 – this is the type of course some people, usually in the industry come to take to improve their practical knowledge. There may not be a course offered during the next semester that they are interested in. As a small program, a few students who don't return have a large impact on numbers.

Perkins money has been obtained for a student help who will assist the Agriculture and Administration

of Justice programs to track and follow-up with students who do “drop out” to determine reasons for lack of persistence.

Our successful completion rate of 83% is another measure of our effectiveness which can be considered. The Agriculture courses are science courses and our completion rate of 83% compares favorably with the 73% completion rate in liberal arts of which other science courses are part of.

20. Number of degrees and certificates earned (annual)

Unduplicated Degrees/Certificates Awarded			8
Number of Degrees Awarded			8
Certificates of Achievement Awarded			3
Academic Subject Certificates Awarded			0
Other Certificates Awarded			16

The number of majors relative to number of degrees awarded falls within the healthy benchmark since the number of degrees divided by majors is 26% (over 20%). However, the second benchmark (# graduates/ replacement county openings) is in a cautionary state of 0.36. As mentioned above, there are students who have no intention of acquiring a degree but come to improve their knowledge in the field. This is not quantified so is not measured as part of effectiveness, but for some CTE programs this is an important component of the program’s service and effectiveness to the community.

21. Number of students transferred (enrolled) to a four-year institution

	2005	2006	2007	AY08-09
Transfers to UH 4-yr	2	1	0	1
Transfers with degree from program				0
Transfers without degree from program				1

The AG 200 has been articulated to UHH and UHM. The other AG courses are over 100, however articulating course to course has been problematic because the equivalent course at UHH or UHM is usually numbered 300 or 400. Many of the MCC courses are accepted as 100-200 electives particularly at UHH. Nevertheless, a graduate of MCC would expect to take 3 years to get a B.S. from UHH or UHM so transferring is not very attractive. Indeed, traditionally the transfer rate has always been low since so many students in this major are non-traditional and tend to be “place-bound” anyway. An online Bachelors available to these types of students could increase, although probably slightly, the transfer rate.

22-28. Perkins core indicators

Perkins IV Measures 2007-2008		Goal	Actual	Met
28	1P1 Technical Skills Attainment	90.00	83.33	Did Not
29	2P1 Completion	44.00	16.67	Did Not
30	3P1 Student Retention or Transfer	55.00	66.67	Met
31	4P1 Student Placement	50.00	50	Met
32	5P1 Nontraditional Participation	25.00	44.83	Met
33	5P2 Nontraditional Completion	25.00	77.78	Met

The Agriculture & Natural Resources Program met 4 out of 6 Perkins Core indicators. The 1P1 indicator at 83% was very close to the 90% goal. Only the 2P1 goal needs real improvement. The program far exceeds the goals in non-traditional participation and completion. Meeting 4 of 6 Perkins Goals is either better or very much in line with other CTE programs at MCC.

29. Determination of program's health based on effectiveness

The program is **cautionary** based on effectiveness. Based on the scoring rubric the program received a 4 which is on the higher end of cautionary. A slight improvement (4%) in the persistence benchmark would have put the program into the healthy category for effectiveness.

PART II. ANALYSIS OF THE PROGRAM

Strengths & Weaknesses

The Agriculture & Natural Resources Program is efficient based on the data. Replacement jobs not accounted for in the data and the fact that many of our students are or become entrepreneurs support the contention that there is high demand for a skilled workforce in horticulture and natural resource management. The program is very effective with non-traditional students as reflected by the Perkins data. The program is also fairly effective based on persistence. The data does not capture the benefit the program provides to students who enroll in specific classes for knowledge.

The strengths of the Agriculture & Natural Resources Program include outstanding academic rigor. Despite having only 2 faculty members on two separate islands, the program manages to provide a wide range of courses in separate areas of expertise that serve our decentralized industry. At the same time the faculty, staff and students manage to generate funds that support a quality education.

A strength of the program is outreach to the community. this program brings the community onto the campus with plant sales and other events. The program cooperated with MEDB in Spring 2008 to host a tour and education program for middle school students. As part of the Smithsonian Key Ingredients

traveling exhibit, the Agriculture and Natural Resources program partnered with UH CTAHR Maui Cooperative Extension Service to grow a taro variety display in the MCC AG fields. A taro field day and poi tasting brought the community on campus as well as students from other programs into the Agriculture fields. MCC got front page coverage in the Maui News as well. The program was also able to donate native plants and huli to youth and school groups.

An additional strength of the program is the willingness of faculty and staff to work with other departments, divisions and colleges. The program works well with UH CTAHR on Maui – we assist them with greenhouse space or test areas when needed and they help us obtain plant material and other teaching materials. The program coordinator has shared curriculum with faculty of UH Hilo and Leeward CC this past year. The chemistry faculty and students are growing algae for biofuels testing in the greenhouse. A biotech student used the greenhouse for a test on the gall wasp. We supply plans, tents, and tables for various events on campus. We assist such groups as Na Pua No'eau with using the facilities and providing materials. In addition, we have to maintain credibility with industry groups with widely different ideals and agendas such as Hawaii Organic Farmers Association and Monsanto.

A weakness is public awareness of the opportunities in agriculture/horticulture/natural resources. Agriculture and Natural Resources is not a glamorous field. Starting salaries are not high related to the amount of work required, particularly in farming food crops. People only come to this area if they really love plants, the environment, working outdoors and are academically inclined toward science. Recruitment has always been a challenge and this is shown in the demand indicators and therefore reflected in efficiency indicators. When examining retention numbers it must be remembered that these reflect high numbers of working adults that have limited time resources for school and an academically challenging STEM program. Fortunately, there is increasing interest in local food production as well as environmental protection. This trend should assist the program in recruitment.

Our program produces entrepreneurs whose efforts stimulate the economy. Our students and graduates work in biotechnology. Our students work in resource management helping to preserve our natural heritage and watersheds which are the keystones in Hawaii's economy. The Agriculture & Natural Resources Program is integral to the ending of the MCC mission statement: *The College mission, goals, and actions will be guided by the Native Hawaiian reverence for the ahupua`a, a practice of sustaining and sharing diverse but finite resources for the benefit of all.* . With the political and public support for conservation, sustainable agriculture production, locally grown food, eco-sensible landscapes and STEM based careers, the Agriculture and Natural Resources program is an important niche in the overall educational mission of MCC.

Significant Actions

-As a result of the ATP mentioned in the 2008 program review, the degree proposal for an A.S. in Cultural and Natural Resource Management (CNRM), another degree under the Agriculture and Natural Resources Program, was finalized. This is an interdisciplinary degree that required a high level of cooperative effort between the Agriculture, Hawaiian Studies, Administration of Justice and Marine Science faculty. Various industry representatives provided input and are enthusiastic about the potential of this degree to provide a trained local workforce. This degree does not require additional

resources – the courses are already being taught by faculty in the various departments. It is also supported by a grant of \$108,000 per year (USDA CREES – Malama ‘Ahupua’a grant) and a grant coordinator is in place. Assisting the faculty in recruiting and tracking students and working with industry partners are major responsibilities of this coordinator. The Agriculture and Natural Resources program coordinator prepared and defended the CNRM degree proposal. The CNRM degree proposal successfully went through the divisions, curriculum committee and Academic Senate and received outstanding support at all levels. The proposal was vetted by the Committee of Vice Chancellors and once again received support. The Vice Chancellors applauded the interdisciplinary and unique aspects of the CNRM degree.

For the Agriculture and Natural Resources program, this degree represents the culmination of years of work in an effort to provide another degree option better tailored for students interested in entering resource management fields. It is also geared to coincide with the effort by the DOE K-16 effort in the Natural Resources Career Pathway. The degree was designed to create a local trained workforce, since many people in this field currently are from the mainland. The CNRM degree was also created as an effort to improve the “health” of the Agriculture and Natural Resources program. This degree would attract students to the program that would not be interested in “agriculture”. Already we have seen intense interest in this program from current MCC students as well as high school teachers and counselors. The estimate of 30 additional majors added from the CNRM degree would certainly put the Agriculture and Natural Resources program into a healthy category in the demand sector. It would be expected that more of these students would graduate or transfer to a four year institution. This in turn would help the program metrics in the effectiveness category. Over the years, the low numbers of majors has been the biggest weakness of the program. The CNRM degree, within the Agriculture and Natural Resources program, is likely the most successful and efficient way increase numbers of students in the program. This degree would also benefit the Hawaiian studies and Administration of Justice programs. Unfortunately, at this time, despite the high levels of support for this degree inside and outside the college, the MCC administration is not supporting taking the CNRM A.S. degree forward to the Board of Regents.

-Perkins money was obtained to hire a student assistant in Fall 2009 to track and assist in marketing and recruitment of Agriculture and Administration of Justice majors. To leverage resources, the student assistant will work with the Malama ‘Ahupua’a grants Coordinator to work on these efforts since there is overlap between these two majors and the proposed CNRM degree.

-During spring 2009, in conjunction with the University Center Director, the program coordinator was able to work with the College of Agriculture at Oregon State University and the online articulation director to articulate the MCC classes in order to create an online B.S. degree for MCC Agriculture program graduates. The memorandum of understanding between MCC and OSU should be signed in –

-Fall 2009, making it more efficient for MCC students to be dual enrolled at each institution to work toward an online B.S. degree.

- The Advisory Committee validated the Program Student Learning Objectives.
- Perkins money was obtained to purchase hand and power tools that will enhance the hands-on learning experiences for students, particularly women.
- In cooperation with UH CTAHR, MCC Agriculture & Natural Resources Program successfully staged a Taro Variety Display and field day in the MCC fields in conjunction with the Smithsonian Key Ingredients traveling exhibition.
- The one credit course to service the clients of USDA farm service did not have enough enrollment to run in Spring 2009. A summer Vitech course "Farm Record Keeping" was put into the schedule but also was under-enrolled and cancelled. In Spring 2009, the Agriculture Business Management class will utilize the funds and attempt to service the USDA clients.

30. Overall Health of the Program

The Agriculture and Natural Resources program, with an overall metric of 4, is rated as **cautionary**. This is an improvement from unhealthy the year before. Since a 5 metric is needed for a healthy rating, the program is getting closer to its goal. Once again the demand category, with a 1.4, could easily be rated healthy with more jobs actually accounted for or by attracting more majors into the program. The proposed CNRM degree would likely greatly improve this metric, moving the program into healthy. Since the program also serves a larger student population than just declared Agriculture majors, it can also be argued that the program has a greater demand than indicated by the numbers. With these factors in mind, the program could be considered healthy.

Part III. Action Plan

- Continue to advocate for the CNRM A.S. degree to become a reality to provide students with this education, career and degree option at MCC.
- As Program Director for the Malama 'Ahupua'a grant beginning September 1, 2009, the Agriculture and Natural Resources program coordinator will direct the program to effectively meet the goals of the grant and serve the program.
- Facilitate a Memorandum of Understanding with the campus at Oregon State University.
- Now that Curriculum Central is running, the Agriculture and Natural Resources program will be reviewing all the course outlines in Spring 2010. The SLO's and PLO's will be examined for alignment and assessment tools will be considered.
- Follow assessment plans and make adjustments as needed. SLO's, PLO's CCOWIQ's and assessment tools are all dynamic and the feedback will help improve these goals and tools.
- In conjunction with course outline updates, the Sustainable Tropical Crop Production A.A.S. degree will be examined and appropriate modifications, additions or deletions will be considered to put organic

production methods as a more obvious focus.

- Work with the Malama 'Ahupua'a grant coordinator and student assistants to increase marketing, recruitment and student tracking for the Agriculture and Natural Resources Program. Work with student assistant on an improved website for the program.

- In cooperation with the High Schools, coordinate and conduct an Agriculture and Natural Resources Awareness Day in February 2010.

Part IV. Resource Implications (physical, human, financial)

- Our Physical plant is in fairly good shape but needs constant maintenance. Plant sale and vegetable sale monies will continue to support our program by purchasing all of our various supplies – soil, pots, chemicals, fertilizer, irrigation parts, seed etc. as well as instructional supplies such as videos, books and technology. Fund generation will be very important with the downturn in the State's budget.

- With tightening budgets, there is a concern that student help money may not be available. Since we have living materials, grounds and facilities we have to take care of, as well as growing labs, we do rely on having student help to get many things done.

- On an instructional level, our current faculty member and ATP, along with an occasional lecturer, is able to meet class demand. Grant money will be allocated to assist STEM department in hiring lecturers if a lecturer is needed. Lecturers who already teach courses used in CNRM may need support from the departments as is currently done. (BIOL 105, GIS 150)

Maui Community College

Program Assessment Analysis

Program Agriculture & Natural Resources

Program Learning Outcomes

Use basic business principles to manage projects or design a horticultural business enterprise.

Recommend cultural practices, solve problems, plan projects, and cultivate horticultural crops in a sustainable manner based on sound biological and technological principles.

Explain the relationships between agro-ecosystems, economics, human culture, and natural environments.

Design gardens that demonstrate aesthetic principles. (Landscape & Horticulture only)

Course Student Learning Outcomes

90% Program courses have Student Learning Outcomes and are aligned with the Program Learning Outcomes.

(see attached grid)

(other courses are equipment courses and do not evaluate PLO's at this time)

1. Program Learning Outcome or Course Student Learning Outcome being assessed:

(See attached table).

2. Description of assessment tool (written assignment, common exam, embedded assessment within regular test or assignment, survey, observation, demonstrations, performances, or other samples of students work). Attach assessment rubric to this document.

(See attached table).

Formal assessment and analysis to begin AY 09-10.

3. Analysis of assessment results.

N/A

4. What changes were or will be implemented as a result of this assessment? How will you implement the changes?

N/A

5. What were the results of these changes? Given the results, what changes will be implemented? How will the changes be implemented?

N/A

Maui Community College

Program Assessment Plan

Associates of Applied Science in Sustainable Tropical Crop Management

Program Learning Outcomes

1. Use basic business principles to manage projects of design a horticultural business enterprise.
2. Recommend cultural practices, solve problems, plan projects, and cultivate horticultural crops in a sustainable manner based on sound biological and technological principles.
3. Explain the relationships between agroecosystems, economics, human culture, and natural environments.

PLO	FL2009	SP2010	FL2010	SP2011	F2011	SP2012	F2013	SP2013
1		AG230				AG230		
2	AG 200 And/or AG 235	AG251	AG200		AG200 And/or AG235	AG251	AG200	
3			AG174	AG281			AG174	AG281

Maui Community College

Program Assessment Plan

Associates of Applied Science in Horticulture & Landscape Maintenance

Program Learning Outcomes

1. Use basic business principles to manage projects of design a horticultural business enterprise.
2. Recommend cultural practices, solve problems, plan projects, and cultivate horticultural crops in a sustainable manner based on sound biological and technological principles.
3. Explain the relationships between agroecosystems, economics, human culture, and natural environments.
4. Design gardens that demonstrate aesthetic principles.

PLO	FL2009	SP2010	FL2010	SP2011	F2011	SP2012	F2013	SP2013
1		AG230				AG230		
2	AG 200 And/or AG 235	AG251	AG200		AG200 And/or AG235	AG251	AG200	
3			AG174	AG281			AG174	AG281
4				AG250				AG250

Appendix A																
	Assessment of Intended Student Learning Outcomes for Agriculture and Natural Resources Program Student Learner Outcomes															
	CODE															
	3 = A focus of course															
	2 = Evaluate Using Outcome															
	1 = Not evaluated															
	0 = Not included															
	Courses in Program	AG 122	AG 174	AG 200	AG 201	AG 230	AG 235	AG 250	AG 251	AG 260	AG 269	AG 281	AG 264	AG 266	AG 193V	AG 290
Knowledge	Use basic business principles to manage projects or design a horticultural business enterprise.	1	1	2	1	3	1	1	2	1	0	1	1	1	0	
	Courses in Program	AG 122	AG 174	AG 200	AG 201	AG 230	AG 235	AG 250	AG 251	AG 260	AG 269	AG 281	AG 264	AG 266	AG 193V	AG 290
SKILL	Recommend cultural practices, solve problems, plan projects, and cultivate horticultural crops in a sustainable manner based on sound biological and technological principles.	2	2	3	2	0	2	2	3	2	0	2	1	2	0	

	Courses in Program	AG 122	AG 174	AG 200	AG 201	AG 230	AG 235	AG 250	AG 251	AG 260	AG 269	AG 281	AG 264	AG 266	AG 193V	AG 290
<i>VALUE</i>	Explain the relationships between agroecosystems, economics, human culture, and natural environments.	2	2	2	2	1	2	1	1	1	1	3	1	1		
	(Landscape & hort only)															
	Design Gardents that demonstrate aesthetic principles.	0	0	0	0	0	1	3	0	1	1	1	0	0	0	

Annual Report of Program Data for Agriculture & Natural Resources
Maui Community College Program Major(s): AG

Overall Program Health				Cautionary	
Demand Indicators		Academic Year		Demand Health Cautionary	
			08-09		
1	New & Replacement Positions (State)		376		
2	New & Replacement Positions (County Prorated)		22		
3	Number of Majors		31		
4	SSH Program Majors in Program Classes		164		
5	SSH Non-Majors in Program Classes		281		
6	SSH in All Program Classes		445		
7	FTE Enrollment in Program Classes		15		
8	Total Number of Classes Taught		14		
Efficiency Indicators		Academic Year		Efficiency Health Healthy	
			08-09		
9	Average Class Size		11.4		
10	Fill Rate		63%		
11	FTE BOR Appointed Faculty		2.0		
12	Majors to FTE BOR Appointed Faculty		15.3		
13	Majors to Analytic FTE Faculty		24.2		
13a	Analytic FTE Faculty		1.3		
14	Overall Program Budget Allocation		C/P		
14a	General Funded Budget Allocation		C/P		
14b	Special/Federal Budget Allocation		C/P		
15	Cost per SSH		C/P		
16	Number of Low-Enrolled (<10) Classes		5		
Effectiveness Indicators		Academic Year			Effectiveness Health Cautionary
			08-09		
17	Successful Completion (Equivalent C or Higher)		83%		
18	Withdrawals (Grade = W)		3		
19	Persistence (Fall to Spring)		56%		
20	Unduplicated Degrees/Certificates Awarded		8		
20a	Number of Degrees Awarded		8		
20b	Certificates of Achievement Awarded		3		
20c	Academic Subject Certificates Awarded		0		
20d	Other Certificates Awarded		16		
21	Transfers to UH 4-yr		1		
21a	Transfers with degree from program		0		
21b	Transfers without degree from program		1		

C/P denotes that the measure is provided by the college, if necessary.

Data current as of: 9/22/2009 - 3:45 PM

Distance Education Completely On-line Classes		Academic Year		
				08-09
22	Number of Distance Education Classes Taught			0
23	Enrollment Distance Education Classes			0
24	Fill Rate			0%
25	Successful Completion (Equivalent C or Higher)			0%
26	Withdrawals (Grade = W)			0
27	Persistence (Fall to Spring Not Limited to Distance Education)			0%
Perkins IV Core Indicators				
Perkins IV Measures 2007-2008		Goal	Actual	Met
28	1P1 Technical Skills Attainment	90.00	83.33	Did Not
29	2P1 Completion	44.00	16.67	Did Not
30	3P1 Student Retention or Transfer	55.00	66.67	Met
31	4P1 Student Placement	50.00	50	Met
32	5P1 Nontraditional Participation	25.00	44.83	Met
33	5P2 Nontraditional Completion	25.00	77.78	Met