

HAWAI'I COMMUNITY COLLEGE PROGRAM COMPREHENSIVE 3-YEAR REVIEW REPORT

Machine Welding and Industrial Mechanics

Date February 24th, 2017

Review Period

July 1, 2013 to June 30, 2016

AY 2013-14, AY2014-15, and AY2015-16

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Program/Unit Review at Hawai'i Community College is a shared governance responsibility related to strategic planning and quality assurance. Annual and 3-year Comprehensive Reviews are important planning tools for the College's budget process. This ongoing systematic assessment process supports achievement of Program/Unit Outcomes. Evaluated through a college-wide procedure, all completed Program/Unit Reviews are available to the College and community at large to enhance communication and public accountability.

Please see <http://hawaii.hawaii.edu/files/program-unit-review/>

Please remember that this review should be written in a professional manner. Mahalo.

PART I: THE PROGRAM

Describe the Program	
Provide the short description as listed in the current catalog.	This program prepares the student for employment in the metalworking and mechanical/maintenance trades. Employment may be in construction, food processing, manufacturing, utilities, astronomical observatories, or related industries. The job requires good physical health, above average eye/hand coordination, mechanical reasoning, and good form perception and spatial relationship. Job responsibilities may include fabricating, repairing, or maintaining metal products on equipment, buildings, and systems
Provide and discuss the program's mission (or goals and objectives if no program mission statement is available).	The student will demonstrate the skills and knowledge required for the machine, welding and industrial mechanics occupations; demonstrate good work ethics, positive work habits and attitudes that will make him/her EMPLOYABLE in this cluster of occupations.

Report and discuss all major/meaningful actions and activities that occurred in the program over the past three years, from July 1, 2013 through June 30, 2016. For example:	
Changes to the program's curriculum due to course additions, deletions, modifications (CRC, Fast Track, GE-designations), and re-sequencing	<p>2013-2014 The MWIM Program's has initiated a new compressed curriculum combining existing modules to form larger units of study. This direction will hopefully improve current student interest and entice new students who are seeking a career or looking to upgrade skills in the work place.</p> <p>2015-2106 The QM120T math requirement was added as an option for students that were pursuing the AAS degree. This math course was designed to teach the type of mathematics done in the machining and welding fields, and in our program so that our students could directly apply these skills in their hands-on assignments in the welding and machining courses.</p> <p>The CLOs for MWIM 72 Introduction to CNC Milling were being discussed by the instructor and the assessment coordinator in Fall 2015 and Spring 2016 when the initial assessment was being written. The instructor found that the MWIM 72 had CLOs that should be edited. The instructor submitted a course modification Fast Track Submission Form and the CLOs for this</p>

	<p>course were modified so that they were more specific and more accurately reflected the student learning outcomes of the course. There was also discussion about the CLO's for other MWIM courses and it was determined that the MWIM 65 CLOs would be modified within the year.</p> <p>The instructor has re-aligned all of the CLOs to the PLOs of every course but has not submitted them for approval. This modification will take place within the next year. The alignment will take place shortly after the new ILOs are released and the PLOs are aligned to the new ILOs so that everything is submitted at one time.</p>
New certificates/degrees	N/A
Personnel and position additions and/or losses.	<p>Addition of a Machining Instructor, 2013-14 school year.</p> <p>Loss of the Machining Lecturer, 2013-14 school year.</p> <p>Loss of the Machining Instructor, 2015-16 school year but retained the line number.</p> <p>Re-hired the part-time lecturer from 2013-14 for machining side 2015-16 school year.</p> <p>Hired an Educational Assistant, or "Casual Hire" 2015-16 school year.</p>
Other major/meaningful activities, including responses to previous CERC feedback.	<p>The instructor continues to coordinate times with counselors to schedule scholarship and resume workshops every Spring semester for the graduating students.</p> <p>The MWIM Program attended HCC day every year, 2013-2014, 2014-2015, and 2015-2106 with the display and use of a virtual reality welder, brochures, and students that were willing to answer questions to prospective students that were visiting the campus. This event occurred at the lower campus at the Hawaii Community College lower campus.</p> <p>In the 2015-2016 school year, the MWIM Program attended Career Day with the display and use of a virtual reality welder, brochures, and students that were willing to answer questions to prospective students that were visiting the campus from Teen Challenge, and a multitude of other high schools. This event occurred at the Hilo Armory.</p>

Describe, analyze, and celebrate the program's successes and accomplishments. (For example, *more students were retained/graduated OR the program successfully integrated new*

strategies/technologies.)

Discuss what the program has been doing well that needs to be maintained and strengthened.

Please provide evidence if applicable (ex: program data reports, relevant URL links, etc.).

The program has close professional relationships with persons working in the industry that are available to come and talk to our students and prospective students about their trade and the expectations they have of our graduates if hired.

Although our program has low enrollment for female students, we promote female enrollment by having the women in our program come to Job Fairs and speak to prospective female students. Our Casual Hire is also female, and is proactive in speaking with prospective female students at job fairs.

The hiring of a Casual Hire for the MWIM and DIMC programs in the 2015-16 AY was supportive to students in that the Casual Hire was available to students to discuss graduation requirements or other registration related topics as well as general educational support. The Casual Hire was also a help in creating a line of communication for the students to the appropriate persons when questions arose that couldn't be immediately answered. The new hire of the Casual Hire for the programs MWIM and DIMC allows instructors more time to focus on teaching and alleviates some of the paperwork, and other duties required of instructors. The program hopes that a permanent APT will be hired in the near future who will assist in lab, instruction, curriculum, budget and inventory as does the Casual Hire. Hiring a permanent APT will assist in making the program more efficient and provide consistency.

The ARPD data shows that our program has continued to have a proportionally high percentage of Native Hawaiian enrolment over the last three years. We will continue to support the enrolment of Native Hawaiians in our program.

The MWIM program has been producing very effective graduates, and the number of graduates has increased each year from Fall 2013 to SP. 2016. There were 21 unduplicated degrees/certificates awarded in Spring 2016 more than a 50% increase from the year before.

Describe, analyze, and discuss any challenges and/or obstacles the program has faced.

Identify and discuss the program's challenges/obstacles.

The Perkins Core indicators, 5P1 and 5P2, have historically been a challenge to meet because of the reluctance of industry to accept females on an equal basis with males. Until these trends end, we will always struggle with attaining nontraditional participation and completion. We did however, have three non-traditional completions in SP. 2016. The data may not reflect this until Fall of 2017, and the three females who received degrees or certificates would still not make this Perkins Indicator "met." It does show that are not actually at 0 for completion. Although the goal of 19.36 may be unrealistic for now, the program from will still continue to look for ways in which to increase non-traditional participation and completion.

Changes in the industry mean our students need to learn new tools, new techniques, technologies and new materials. Our program needs to update our course curriculum and resources. It is the instructor's goal to acquire up to date equipment and technologies so that we maintain a reputation for graduating capable students. The equipment in the shop is not up to industry standards and is outdated as is the consensus with the Advisory Council.

Newer equipment, whether electronic like the virtual welder, or the latest software such as the plasma cutter, help recruit new students. Graduates want to learn on and be proficient at the latest technologies so that they can attain higher paying Employment positions. When the MWIM program attends the high school and middle school job fairs, there is high interest in the virtual reality welder. The program will continue to share this technology with prospective students.

There are also challenges with older equipment that is out dated such as the sheet metal equipment from before 1959 (has Hawaii Territory tags), and the software that is out dated for the plasma cutter. This older equipment is still being used, it just requires a lot more time to get the job done, meaning less projects and less hands-on lab time for students.

The outdated ventilations system in the welding booth area makes it unsafe for the welding booths to be at full capacity The ventilation system is not working at full capacity. The ventilation system needs to be monitored constantly, and will need to be fixed or replaced within the next couple of years. The current ventilation system was installed in 1989.

Although the Perkins Core indicators 5P1 and 5P2 have

<p>Discuss changes and actions taken to address those challenges, and any results of those actions.</p>	<p>historically been difficult to meet, we will continue to look for ways in which to encourage females in participating in our program. One way is by having the women in our program come to Job Fairs and speak to other prospective female students. Our Casual Hire is also female, and is proactive in speaking with prospective female students at job fairs.</p> <p>There are current and ongoing discussions with the Advisory Council and research on new technologies and which ones are important for our graduates and which technologies should be followed and researched for future purchasing.</p> <p>The program is communicating the need for an updated ventilation system and the budget needed to repair or replace the system is being investigated.</p>
<p>Discuss what still needs to be done in order to successfully meet and overcome these challenges.</p>	<p>Socially, for women and nontraditional students to participate in our program, industry changes in their stringent ideas about the roles of women have to change. These changes may never happen completely or may not realistically change in our lifetimes, but it is the goal of the program to produce more and more capable nontraditional graduates so that industry sees that nontraditional graduates are assets to their employers.</p> <p>We will continue to discuss with the Advisory Council and research independently, new technologies available to the program so that we may support the success of our students.</p> <p>Ventilation system needs to be replaced within the next couple of years. This should be a priority in that there are possible safety issues.</p>

ARPD Data

Please attach a copy of the ARPD data tables for the three years under review and submit with the Program Review document.

- a) **If you will be submitting the Program Review document in hard copy, print and staple a copy of the data tables to the submission; the icon to print the data tables is on the upper right side, just above the data tables.**
- OR**
- b) **If you will be submitting the Program Review document in digital form, attach a PDF copy along with the digital submission; the icon to download the data tables as a PDF is in the upper right side, just above the data tables.**

Program data can be found on the ARPD website: <http://www.hawaii.edu/offices/cc/arpd/>

Analyze the program's ARPD data for the 3-year review period.

Describe, discuss, and provide context for the data, including the program's health scores in the **Demand, Efficiency, Effectiveness**, and Overall Health categories.

Demand Indicators of 2013-14, 2014-15, 2015-16 were as follows: healthy, unhealthy and unhealthy. This data is based on declared majors divided by the county of Hawaii's projected New and replacement positions. There is no significant change in the number of declared majors, but the number of jobs available (County Porated) is very low. There is evidence that this data is flawed. The CIP code does not account for sheet metal workers, machinists, or other related jobs and only counts the welding jobs.

Efficiency Indicators of 2013-14, 2014-15, 2015-16 were as follow: healthy, healthy, cautionary. The Cautionary Indicator of 20115-16 is due to an unusual amount of student hardship, economically and personally. The 2015-16 year had a drop in the fill rate of 13.6% and drop in average class size of 2.5 students. This is unusually low, and we are confident this will not become a trend because of the low numbers coinciding with the known outside factors mentioned above.

Effectiveness Indicators of 2013-14, 2014-15, 2015-16 were as follows: cautionary, healthy, healthy. The amount of unduplicated degrees has gone up significantly in the last three years. The persistence from Fall to Fall has gone down slightly, but the persistence from Spring to Fall has increased almost 10%.

The overall health of the program based on the Program Quantitative Indicators for the last three years has been Healthy 2013-14, Cautionary 2014-15 and Cautionary for 2015-16. As explained above, we have determined that the Demand Health Call indicator is flawed. The numerator in the formula, New & Replacement Positions (County Prorated), is flawed. We know for a fact there were more than four job openings for AY 2015-16. The program has been collecting data and tracking our graduates work placement and current employment since Fall 2015 and will continue to do this to show the actual jobs available to our graduates is more than the data used to calculate this health call.

The Efficiency and Effectiveness health calls have only had one Cautionary Indicator each in three years.

As explained above, the Cautionary Health call for the 2015-16 Efficiency Health call is believed to be because it was an unusually difficult year for some of our students financially and personally.

For the Effectiveness Indicator, the students that stayed enrolled and graduated over the last three years, did so with an average 93%

	<p>successful completion rates of C or higher in their majors, and an 80% average persistent enrollment from Fall to Spring Healthy health call for Effectiveness.</p> <p>The program will continue to track graduating students to show that the Demand Health Call is flawed, and we will continue to work on the Efficiency Indicator and look for ways in which to improve enrollment.</p>
<p>Describe, discuss, and provide context for data in the Distance Education, Perkins Core Indicators, and Performance Funding Indicators categories, as appropriate.</p>	<p>In analyzing the Perkins Core Indicators, the program has found that the 1P1 Technical Skills Attainment Indicator was met two out of the last three years, the 2P1 Completion Indicator was not met two out of the three years, the 3P1 Student Retention or Transfer was not met two out of three years, and the 4P1 Student Placement was not met two out of three years. The 2P1 Indicator was met with 100% two out of those three years, the 2015-16 year that it was not met was significant at missing the 50.30% goal by 16.97%, but the instructor feels that this was a particularly hard year for a few students financially and with family hardships. The 3P1 Indicator was not met two out of three years but only by 2 and 3%, and also in the 2015-16 year, possibly reflecting unusual student hardship. The 4P1 Indicator is believed to be flawed because the CIP code that is used does not accurately reflect the number of graduates who are working in their field. The current code being used only accounts for welding jobs, not machining jobs or sheet metal jobs that our students have been hired at.</p> <p>Every year, historically, the program has not met the 5P1 Nontraditional Placement or the 5P2 Nontraditional Completion. Until trends in industry change and women are more readily accepted in industry, these indicators will continue to be a challenge.</p>
<p>Describe any trends, and any internal and/or external factors that are relevant to understanding the program's data.</p>	<p>In 2013-2014 Annual Review Report, it was hoped that the new virtual welding equipment/trainer would raise the Program's Performance Funding Data. The additional practice time on a virtual welder would benefit</p> <p>Our students, the environment, and workforce. The students would learn additional nomenclature and industry terms repeated continuously. The environment would have reduced welding fumes and the workforce would have a more productive and informed worker. It was also believed that the number of degrees and certificates would increase. The virtual welding equipment/trainer has been an asset to the program, but not in the way that was hoped.</p>

	<p>Because the magnetic field can be easily distorted by lights, air conditioners and other electrical devices, it does not always give accurate readings. It does allow the beginning welder to practice eye-hand coordination safely before actually welding, saving materials and creating a more confident first time welder. It is also helpful for assessments when it is working properly, and set-up in an area that has no electrical interferences. In using the virtual welder for assessments, the instructor and student know that the results are completely fair and accurate and not biased in any way. If the machine were having a magnetic field interference, the results would be completely wrong and it would be obvious that they would not represent what the student was actually doing. The virtual reality welder is also helpful at the different high school career days and also at the Hawaii Community College Day by demonstrating to prospective students what we teach. The virtual welder has the sounds, visuals, equipment used, and the feel of an actual welder, showing prospective students that come to the booth what it is actually like to weld. There is usually a small crowd around the MWIM booth as students either wait to try the virtual welder, or watch on the video screen while other fellow students are welding.</p>
<p>Discuss other strengths and challenges of the program that are relevant to understanding the program's data.</p>	<p>The 2015 hiring of a Casual Hire for MWIM and DISL was supportive to students in that the Casual Hire was available to students to discuss graduation requirements or other registration related topics as well as general educational support. The Casual Hire was also a help in creating a line of communication for the students to the appropriate persons when questions arose that couldn't be immediately answered. The hiring of the Casual Hire for the programs DIMC and MWIM allows instructors more time to focus on teaching and alleviates some of the paperwork and other duties required of instructors. The program hopes that a permanent APT will be hired in the near future who will assist in lab, instruction, curriculum, budget and inventory as does the Casual Hire. Hiring a permanent APT will assist in making the program more efficient and provide consistency.</p> <p>Other factors affecting the program are the outdated and old equipment. The sheet metal equipment, eight different pieces of equipment to bend, cut, and sheer sheet metal, is older than 1959. The software for the plasma cutter is outdated and the plasma cutter itself is now not currently the latest technology available for this type of metal work. If the program were up to date in the newer technologies available, the recruitment and retention of students</p>

	<p>would improve. Prospective students want to know that they are using current technologies so that they are better equipped for employment upon graduation. We are always staying abreast of the latest technologies. Newer equipment is always needed as technology changes. Advisory Council has advised us that the students learn the general basics of each of the types of machining and welding that are used in industry.</p> <p>Enrollment of non-traditional students has always been a challenge.</p> <p>Our demand indicator shows the program to be unhealthy. This is a challenge as long as the CP1 code only accounts for students that work locally and in larger businesses. We are confident that we meet this indicator but the challenge lies in either changing the code or to continue to justify that we meet this indicator.</p> <p>The cost of operating the program and has increased significantly over the years due to inflation, but our budget has not increased. It is a challenge to budget so that we have enough resources.</p>
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Analyze the program’s IRO data for the 3-year review period:

If applicable: Discuss how data/analysis provided by the Institutional Research Office has been used for program improvement. (For example, how results from CCSSE or IRO research requests have impacted program development.)

Describe, discuss, and provide context for the data.	N/A
Discuss changes made as a result of the IRO data.	N/A

Contributions to the College: Discuss how the program aligns with and supports the College’s institutional effectiveness and helps the Kauhale achieve our shared goals.

<p><u>College Mission:</u> <i>“Hawai‘i Community College (Hawai‘i CC) promotes student learning by embracing our unique Hawai‘i Island culture and inspiring growth in the spirit of “E ‘Imi Pono.” Aligned with the UH Community Colleges system’s</i></p>	<p>Our graduates work in the community, mostly staying local, and contributing to the needs of the industry, thereby contributing to the local economy. They learn skills that they take with them throughout their lives to better their family’s income, promoting the educational possibilities for their own children. Because our graduates have to stay abreast of technologies, they acquire the skills of a life-long learner, promoting education and research and green technologies.</p>
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<p><i>mission, we are committed to serving all segments of our Hawai'i Island community."</i></p>	
<p><u>Institutional Learning Outcomes (ILOs):</u></p>	<p>ILO 1: Our graduates will be able to communicate effectively in a variety of situations.</p> <p>ILO #1 aligns to the Program Learning Outcomes #1, # 2 and #3 in that our graduates will have a basic entry-level skills knowledge to gain employment (PLO 1), they will have attributes of a good employee, good safety practices, positive work ethics; and work collaboratively or independently under supervision (PLO 2), and they will be able to use basic machine tools, industrial mechanics and metal working equipment and related to machinery (PLO3).</p> <p>In gaining entry level employment, our graduates will have to interview well, and create resumes. In working they will possibly have to communicate in hazardous situations and in conveying safety. They will also have to collaborate when working on large machinery or projects where more than one person is involved with fabrication or repairs and they will need to be responsive to supervision. In order for our graduates to continue in their field, it is necessary that they are life-long learners and stay abreast of latest technologies.</p> <p>ILO 2: Our graduates will be able to gather, evaluate and analyze ideas and information to use in overcoming challenges, solving problems and making decisions.</p> <p>ILO #2 aligns to the Program Learning Outcomes #1,2,3,4, &5 in that our graduates will have mechanical reasoning, form perception and spatial relations understanding, and numerical reasoning skills (PLO 1), they will practice safety and good employee attributes (PLO 2), they will understand proper use and set-up of machine and welding tools (PLO3), they will be able to cut, measure and fabricate (PLO 4), they will have an understanding of geometric construction, pattern development, framing and structural fabrication, and joint design and preparation for welding (PLO 5), and they will have the skills to read technical resources. (PLO6)</p> <p>All of these skills require analyzation skills and the ability to gather information and evaluate, from measuring, and selecting proper materials to being able to create a geometric design for fabrication that is appropriate to its intended use.</p>

	<p>ILO 3: Our graduates will develop the knowledge, skills and values to make contributions to our community in a manner that respects diversity and Hawaiian culture.</p> <p>ILO #3 aligns to the Program Learning Outcome #1 in that our graduates will use their skills to attain employment in the Machining, Welding and Industrial Mechanics or related fields, contributing to their community. They will be able to demonstrate the importance using the knowledge they learn and the resources they have available to them to succeed in their careers.</p>
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The Program’s Learning-Outcomes Assessments

For assessment resources and PDF copies of all submitted assessment reports from the program during the review period, please see the following websites:

Assessment website: <http://hawaii.hawaii.edu/files/assessment/>

Assessment Reports/Resources: <http://hawaii.hawaii.edu/files/assessment/reports/>

- The program faculty/staff have reviewed the program record on Kualii KSCM and hereby affirm that all information, including the PLOs, is correct.
- The program faculty/staff have reviewed the program record on Kualii KSCM and have found that all information is not correct and hereby affirm that the program will be submitting proposals for revision.
 Kualii KSCM: <https://hawaii.kualii.co/cm/#/courses>

If the Kualii KSCM program entry needs revision (for example, to the program description, entry or completion requirements, and/or PLOs) those revisions must be proposed through the Fast Track process or CRC “Proposal to Modify a Program” process, as appropriate.

PLOs

Please list the Program Learning Outcomes (PLOs) as recorded on Kualii KSCM.	<p>MWIM PLO1: Demonstrate mechanical reasoning; form perception and spatial relations; numerical reasoning and communication skills as a part of the basic entry-level skills and knowledge to gain employment in the Machining, Welding, Industrial Mechanics or related fields.</p> <p>MWIM PLO2: Demonstrate the attributes of a good employee; good safety practices; positive work ethics; working collaboratively or independently under supervision; an awareness of</p> <p>MWIM PLO3: Demonstrate eye and hand coordination and dexterity in the proper set-up and use of the basic machine tools and equipment; metalworking equipment; the common welding and cutting processes; industrial mechanics equipment; material handling equipment and related</p>
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	<p>machinery.</p> <p>MWIM PLO4: Demonstrate the applications of and the ability to use the common hand tools' layout tools; measuring tools; precision measuring tools; common cutting and forming tools; tools used with the common fasteners and specialty tools, and the common metalworking and mechanic tools.</p> <p>MWIM PLO5: Demonstrate form perception and spatial relations in the applications of geometric construction; the three common methods of pattern development; industrial practices in framing and structural fabrication; practices in welding joint design and joint preparation and the common machine shop operations and practices.</p> <p>MWIM PLO6: Demonstrate the skills of a life-long learner; the ability to read blueprints; knowledge of metals and the common materials and supplies; the ability to do the work related math; and the ability to communicate and read technical resources.</p>
<p>Discuss the program's challenges, if any, in helping students overall achieve its PLOs.</p>	<p>Some challenges in helping students achieve the programs PLOs are with the cost of resources, materials, and upgrades to equipment. Students need the optimal time possible spend on machines and to practice welding. With older software on the plasma cutter, it takes a lot longer to fabricate metal. Older equipment is slower, and more time consuming as with the outdated sheet metal equipment. The poor ventilation system, besides being a safety concern, currently limits students' time welding to ensure air quality in shop.</p> <p>If the program were able to hire a permanent machining instructor, the course would have consistent goals for future, and consistency in clear learning objectives, as well as course assessments.</p>
<p>Include a summary discussion of the results of any PLO assessments voluntarily undertaken by the program's faculty.</p>	<p>Spring 2016, program has decided to re-align the CLOs to PLOs for every MWIM course. The Casual Hire and the Welding Instructor have sat down and edited any necessary new alignments and they will be changed by Spring 2017.</p>

CLOs

<p>Discuss and summarize the <u>overall</u> results of course learning outcomes (CLO) assessments during the 3-year review period.</p>	<p>The overall results of every assessment, except for one, was that the students are meeting the desired expectation of “meets proficiency.” The only course that did not meet this expectation was the CLO #1 for MWIM 52 in Spring 2015. For this assessment, students were to create an artifact out of sheet metal. For the results of this assessment, the instructor wrote, “not favorable,” but did not record the scores of the assessment. The instructor was teaching this course for the first time, and it is possible that the expectations and/or instructions were not completely clear to students. The same CLO #1 for this course was re-assessed in Spring 2016 by the same instructor as well as CLOs #2,3,4, & 5. The second assessment used two performance tests, a final written exam and a soft-skills assessment to determine employability. The instructor found that 100% of the students met the industry standard of “meets proficiency” for every CLO when assessed the second time. This time the assessment strategy included rubrics and three times of assessment.</p>
<p>Describe how the program’s faculty/staff regularly discussed and used overall assessment results to plan for improvement.</p>	<p>The program’s instructors, with the help of the Institutional Assessment Coordinator, and the Casual Hire, and the APT for the ABRP and AMT programs have been meeting regularly to improve assessments, the CLOs and alignments. The CLO’s for MWIM 72 were rewritten in Spring 2016. The rubrics for all of the courses were made, edited, and re-edited. The assessment strategy is to incorporate hands-on performance assessments with written, and oral assessments of the students so that the assessments are well rounded and reflect the hands-on type learning that is done in the shop, as well as the reading and writing skills necessary for the classroom, and the communication skills and attitude necessary for employment. The instructors collaborate together, and through the Casual Hire and the current APT for ABRP and AMT, and with the DISL, ABRP and AMT vocational programs.</p>
<p>Discuss the implementation of these improvement plans and consequences for overall program improvement.</p>	<p>The rubrics were helpful for the instructor to see plainly the skills being assessed, but also for the students in that the expectations of the tasks because the point systems were clear. The instructor will continue to work with the Institutional Assessment Coordinator to ensure that the rubrics are accurate and clear and will be continually editing and revising and streamlining them so that the assessments are clear and easy to understand for the students, instructor and the Advisory Council. The re-aligned CLOs and PLOs and ILOS will be referenced when editing the rubrics to ensure that the rubrics are accurately scoring the desired students learning</p>

	outcomes.
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PART II: PROGRAM ACTION PLAN

<p>Describe and discuss the program’s action plan to improve student learning for the next 3 years, from July 1, 2016 through June 30, 2019.</p>	<p>Benchmarks and Timelines</p>
<p>Action Goal 1: The program will evaluate the course assessments and will incorporate accurate rubrics that align to CLOs. It is the goal that eventually, these rubrics will have a standard scoring system so that the results of different courses can be cross-referenced or compared. It is also the goal that the rubrics show the level of understanding of students easily so that the Advisory Council is able to discern whether the programs learning outcomes are desirable and/or accurate more easily.</p> <p>The MWIM 65 Advanced Welding CLOs will be re-written so that they are more concise and clear and all of the CLOs for the remaining courses will be evaluated.</p> <p>The program’s PLOs and ILOs will be re-aligned.</p>	<p>Benchmarks/Timelines: The timeline for revising rubrics goal is ongoing as is the evaluations of the CLOs and PLOs.</p> <p>The program will edit, revise and realign assessments and strategies every semester.</p>
<p>How can this action Goal lead to improvements in student learning and attainment of the program’s learning outcomes (PLOs)?</p> <p>In editing and evaluating our assessments, we are making sure that they accurately reflect student learning. When we can clearly see what the student learning outcomes are, we can more clearly see if we need to make improvements to curriculum or teaching strategies.</p>	

<p>Action Goal 2:</p> <p>The program will actively promote non-traditional participation by promoting the program to nontraditional students by nontraditional students and staff. The program actively goes to High School Career Day, and other job fairs with the virtual welding machine to promote enrollment and enrollment of nontraditional and underserved regions and populations. In going to these events 2-4 times a year, we take along nontraditional students to represent our program. We bring the virtual reality welding machine to demonstrate how to weld and encourage prospective students to practice. The program will continue to promote enrollment of nontraditional students and look for other ways to reach out to these students.</p>	<p>Benchmarks/Timelines:</p> <p>The program will continually research ways to acquire funding to promote non-traditional enrollment.</p> <p>The program will seek out counselors who advise in career pathways at the high schools and arrange meetings to brainstorm and discuss ideas yearly.</p>
<p>How can this action Goal lead to improvements in student learning and attainment of the program's learning outcomes (PLOs)?</p> <p>By working towards a higher enrollment of nontraditional students, we are encouraging diversity. Learning outcomes can be assessed more accurately when there is a diverse group of students with different learning styles by showing any challenges in instruction or weaknesses in the assessments. Making sure both our instruction and our assessments and rubrics accurately measure student learning outcomes for all learning styles is the goal.</p>	
<p>Action Goal 3:</p> <p>The program would like to purchase the latest version of the software for our plasma cutter. In staying up to date and obtaining the latest technologies in welding and machining, the program encourages student enrollment. Students want to know that the skills they learn will allow them to apply for quality jobs after graduation.</p>	<p>Benchmarks/Timelines:</p> <p>Purchase the plasma cam software by SP 2018.</p> <p>Research and find funding to purchase software within a year.</p>
<p>How can this action Goal lead to improvements in student learning and attainment of the program's learning outcomes (PLOs)?</p> <p>The most up to date technologies are necessary in order for the program to graduate students with the skills needed for industry and obtain high quality jobs.</p>	

Describe and discuss any specific strategies, tactics, activities, or plans for:	
Program modifications: N/A The program modifications that the previous instructor had planned, have not been researched enough, and are on hold until a permanent instructor has been hired.	
Course-level instructional or curriculum changes: N/A	
Changes to assessment practices, activities, or projects: The assessments will incorporate accurate rubrics that align to CLOs. It is the goal that eventually, these rubrics will have a standard scoring system so that the results of different courses can be cross-referenced or compared. It is also the goal that the rubrics show the level of understanding of students easily so that the Advisory Council is able to discern whether the programs learning outcomes are desirable and accurate more easily. The CLOs for MWIM 65 Advanced Welding will be re-written so that they are more concise and clear. The program's CLOs and PLOs will be re-aligned for every course. The program's PLOs and ILOs will be re-aligned.	
Increases or changes in student support activities and services: No changes at this time, the program will continually stay in contact with support services and attend trainings when available.	

Discuss how the program's action plan will help the Kauhale achieve the four Initiatives in the College's <i>Strategic Directions 2015-2021</i> plan: http://hawaii.hawaii.edu/sites/default/files/docs/strategic-plan/hawcc-strategic-directions-2015-2021.pdf	
Hawai'i Graduation Initiative	Action Goal 1 aligns with <u>HGI ACTION Strategy 2</u> by strengthening and aligning assessment, program/unit review, data collection, and data analyses processes to support improve teaching and learning, accreditation, and governance and planning. Action Goal 2 aligns with <u>HGI ACTION Strategy 1</u> by engaging Hawai'i

	<p>Island K-12 students, parents, and public and private schools early and often to promote and prepare for college readiness.</p> <p>Action Goal 2 aligns with <u>HGI ACTION Strategy 3</u> by engaging systematically with community-based groups to inform program offerings and curricula.</p> <p>Action Goal 2 and 3 aligns with <u>HGI ACTION Strategy 2</u> by reducing gaps in college completion for Native Hawaiians and low-income and under-represented groups.</p>
Hawai'i Innovation Initiative	Action Goal 3 aligns with <u>HGI2 ACTION Strategy 3</u> work closely with employers to increase the qualified and skilled workforce base.
21st Century Facilities (21CF) – Modern Teaching and Learning Environments	N/A
High Performance Mission-Driven System	Action Goal 1 aligns with <u>HPMS ACTION Strategy 1</u> by increasing utilization of available software and database such as Destiny One, STAR, STARFISH, KFS, Curriculum Central, and Laulima.

Explain how the program's action plan contributes to the College's achievement of the performance-based measures below.	
Degrees & Certificates	<p>Action Goal 1 With updated and revised rubrics and assessments, the program will be able to confirm the students learning outcomes and the PLOs so that instructors can see where there is need and students stay on the right track.</p> <p>Action Goal 2 As nontraditional enrollment increases, overall enrollment will increase.</p> <p>Action Goal 3 With updated software, student recruitment and retention will increase because of the need to learn on the latest technologies for job placement and therefore degrees and certificates will increase as well.</p>
Native Hawaiian Degrees & Certificates	Action Goal 1 The MWIM program has consistently had a disproportionately high Native Hawaiian enrollment, therefore, if the recruitment and retention

	<p>increases as stated above, Native Hawaiian graduation rates will also increase.</p> <p>Action Goal 2 As nontraditional enrollment increases, overall enrollment will increase.</p> <p>Action Goal 3 With updated software, student recruitment and retention will increase because of the need to learn on the latest technologies for job placement and therefore degrees and certificates will increase as well.</p>
STEM Degrees & Certificates (include 4-Year Degrees)	N/A
Pell Grant Recipients Degrees & Certificates	N/A
Transfers to UH 4 Year/Transfers to non-UH 4 Year	N/A Our program is a 2 year program designed to teach skills to enter the work force.
IPEDS Success Rate	N/A

Suggestions for Improvement:

If the program's faculty/staff have any suggestions they'd like to share with the College about raising the program's or the College's overall enrollment, improving overall student engagement and success, or any other matter that the faculty/staff think can help the College increase our overall institutional effectiveness, please discuss below.

The MWIM program would like to keep working with OCET and the high school summer programs that will be hosted in the welding/machining lab so that these potential students can see where their strengths and interests lie. This high school student involvement has the potential to increase enrollment. The program hopes that in the future, the college and OCET will support the possibility of hosting other summer welding courses geared towards non-traditional adults in order to promote nontraditional involvement in the trades. Courses might be designed so that they are shorter and more specific and allow for women and other non-traditional involvement without a huge commitment so that these students can get idea of what this trade is about and possibly lead to enrollment in the program in future.

PART III: Resources

Note: “Budget asks” for all categories may be included in the Comprehensive Review.

Based on the program’s overall AY 2014-16 assessment results, other relevant program information and data, and the program’s overall action plan to improve student learning, describe and discuss below the program’s current resources, resource needs, and cost-item “budget asks” for the 3-year period from July 1, 2016 through June 30, 2019.

Resource Inventory

Describe the status of the following faculty/staff program resources:	
Adequate Academic Support Resources (Library, tutoring, learning and testing facilities).	The program has adequate support from the library, tutoring and testing facilities.
Adequate Student Support Services (academic advising, counseling, career guidance).	The counselors have given our students more than adequate support in registering for classes, creating resumes, doing scholarship workshops and answering students’ questions as well as giving out contact information for other types of counseling support. The students of our program rely heavily on our counselors during registration times, and although their questions seem to come all at once, the counselors are quick to respond and come to the upper campus when we requested.
Safe workplace.	<p>The program keeps the shop up to OSHA standards. The Casual Hire is in contact with an OSHA representative in hopes of scheduling trainings when they come to Hawaii.</p> <p>We are need of a ventilation system for the welding booths so that the quality of air is not compromised.</p>
Adequate and up-to-date computers and software (for program needs).	The last three years has been a struggle with the CNC software for the vertical milling machines. Two of the four do not work at all, the other two,

	<p>partially work. The program has just been awarded monies to purchase two new CNC Vertical Milling Machines. If all goes well, the program will be able to incorporate at least one, maybe two new machines with working software, and teach manually on the other two machines, rotating students.</p> <p>The plasma cutter software is outdated and takes an inefficient amount of time, in excess of four hours, to input a design. The Welding Instructor hopes to upgrade.</p>
Adequate computer access to allow faculty to do their jobs.	<p>Computer access has been adequate. Over the past three years the two instructors have all had their own computers in their offices, and a lap-top as well.</p> <p>In 2015, the new Casual hire was able to use an instructor's lap-top.</p>
Adequate training in computer technology (applications, operating systems, hardware, etc.).	<p>The ITSO was extremely helpful in trainings on various programs to the new machining instructor and the new Casual Hire. The program's instructor and Casual Hire both scheduled numerous appointments to learn how to navigate Laulima.</p>
Adequate training in audiovisual technology (projectors, ELMOs, polycom, etc.).	<p>Media Services and Computer Services have set-up an ELMO and a projector for our program. No training was needed.</p>
Adequate training in distance learning course development and management (Laulima, etc.).	<p>The instructor and the Casual Hire both worked with the ITSO to learn how to manage and navigate the learning management system Laulima. Over the last three years, there have been more than 40 appointments made because the new machining instructor and the new Casual Hire were creating curriculum and tests on Laulima.</p>

Resource Category	Resources the program needs to operate effectively:	Resources the program already has:	What is the program's resource gap?
A. Personnel			
1) Positions	Permanent APT	Casual Hire	None, the position is

(Functions)			currently being filled.
2) Professional Development	N/A	N/A	N/A
B. Operating Resources			
1) Supplies	Welding rods and gases, machining drill bits, taps and dyes, sheet metal material	Not enough welding rods and argon or mixed gas, drill bits, and incomplete tap and dye sets, especially metric	The program is about 30-40% short of the ideal amount of welding rods and gases that would be ideal to run the program efficiently and effectively. Estimated 25% short on the amount of sheet metal, aluminum and stainless that would be ideal.
2) Contracts	N/A	N/A	N/A
3) Equipment	Sheet Metal Equipment Laser Cutter	Outdated We do not have one	The outdated equipment is inaccurate and slower to use This cutting edge technology.
4) Space and Facilities	Ventilation System	Outdated ventilation system	We need a new ventilation system
C. Technology			
1) Hardware	N/A	N/A	N/A
2) Apps or Software	Plasma cam software	Outdated plasma cam software	The plasma cam glitches and crashes at times
3) Tech Support	N/A	N/A	N/A
4) Tech-related Professional Development	N/A	N/A	N/A
5) Tech labs / facilities	N/A	N/A	N/A

RESOURCE REQUESTS:

For each “budget-ask” item, provide the following information:

Describe the needed item in detail.	<ol style="list-style-type: none"> 1. Permanent APT position to be filled. 2. Supplies: variety of welding rods, argon and mixed gases, machining drill bits entire set to 2” (or 128 tapered drill
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	<p>bits), metric tap and die set up to 1”, sheet metal, aluminum and steel materials</p> <ol style="list-style-type: none"> 3. Sheet Metal Equipment and tools are as follows: -box and pan, sheer, brake, (2) slip roll, (2) Beverly Sheer blades, manual beading and crimping machine, (2) sets of forming stakes, planishing hammer, English Hammer 4. New or repaired ventilation System 5. Updated plasma cam software 6. Laser cutter – cutting edge technology. Allows for cleaner cuts – less time wasted clean parts that get cut out. Safer operation – less noise and welding glasses not needed during operation.
<p>Provide complete information about known or estimated cost(s).</p>	<ol style="list-style-type: none"> 1. Permanent APT filled position in the Fall of 2016, unknown cost 2. Welding rods approx. \$300-\$500, Gases \$1,000, Machining tapered drill bits up to 2” in 1/64 increments (128 drill bits) \$7,815, Complete metric tap and dye set up to 1” \$1,500, Sheet metal \$300, other aluminum and steel \$500-\$1,000. Total approx. with shipping \$13,000 3. Sheet metal equipment- box and pan \$5,000, sheer \$3,725 brake \$10,000, (2) slip roll \$4,000 each (2) Beverly Sheer blades \$200 each, manual beading and crimping machine \$3,000, dies for the manual crimping and beading machine \$1,000 (2) sets of forming stakes \$4,000 each, (5) large forming stakes \$1,100, planishing hammer \$8,295, English Hammer \$1,420. Total 54,340 without shipping. Total cost is thought to be \$100,000 with shipping and installation. 4. The repairs or replacement of the ventilation system cost is unknown. There is more than one way to remedy the safety concern. Repair what we have and get quotes from contractors, or buy portable ventilation extraction arms for \$5,000 each, but not sure how many and if this would solve the problem. 5. Plasma cam software \$2,500 6. Because the technology is new, the price is high - \$300,000. Hopefully in next 2-3 years it should be about \$200,000 or less.

<p>Provide details about timeline(s) for procurement and activation/implementation.</p>	<ol style="list-style-type: none"> 1. Permanent APT filled position in the Fall of 2016 2. Procurement of extra supplies is unknown at this time. There is fundraising possibilities for some of the lesser costs. Every semester these supplies are low, this is an on-going need. 3. Procurement of sheet metal equipment and supplies is unknown at this time, but instructors and Casual Hire are discussing. Hopefully within the next two years. 4. ASAP. The ventilation system is a safety issue and should be taken care of right as soon as possible. 5. Plasma cam software hopefully will be bought by doing work orders. The program is discussing items that could be fabricated. 6. Technology is still changing and the laser cutter is only available for large industrial use at the moment. Hopefully in the next 2 to 3 years there will be an affordable classroom version.
<p>How does this align with the program's Action Plan above?</p>	<p>Action Goal 1 aligns to <u>Ask Item 1</u>. We will able to have the permanent APT assist in assessments and rubrics, and the writing of the results and gathering data.</p> <p>Action Goal 2 aligns to <u>Ask Items 1,2,3,4,5 and 6</u>. In hiring a permanent APT, there will be an extra person at job fairs and career days to speak with prospective students. The ventilation system is a safety issue that also leads to increased enrollment of nontraditional students when the students know that they are learning in a safe workplace. In attaining the up-to-date sheet metal equipment and updated software for the plasma cam, the program is more desirable to the needs of prospective students, all of which have a positive effect on increased enrollment.</p> <p>Action Goal 3 aligns to <u>Ask Items 5 and 6</u>. Attaining the plasma cam software will help the help recruit students and possibly assist in creating work orders that can boost the "R" account balance.</p>

<p>Identify how the item aligns with one or more of the 2015-2021 Strategic Directions' four Initiatives.</p>	<p>Ask Items 1 aligns with <u>HGI Action Strategy 2</u> by strengthening and aligning assessment, program/unit review, data collection, and data analysis processes to support improved teaching and learning, accreditation, and governance and planning.</p> <p>Ask Items 1,2,3,4,5,6 align to <u>HGI ACTION Strategy 1</u> by engaging Hawai'i Island K-12 students, parents, and public and private schools early and often to promote and prepare for college readiness and to <u>HGI ACTION Strategy 3</u> by engaging systematically with community based groups to inform program offerings and curricula as well as to <u>HGI ACTION Strategy 2</u> by reducing gaps in college completion for Native Hawaiians and low-income and under-represented groups.</p> <p>Ask item 5 and 6 align to <u>HGI ACTION Strategy 2</u> by reducing gaps in college completion for Native Hawaiians and low-income and under-represented Groups and to <u>HGI ACTION Strategy 3</u> by working closely with employers to increase the qualified and skilled workforce base.</p>
<p>Discuss how the item will help the program support improvements in student learning and attainment of the program's and College's learning outcomes.</p>	<p>Ask Items 1,2,3,4,5,6,7 and 8 all support the program's learning outcomes because they are supporting the acquisition of the skills that they will need to graduate and find employment in a high-quality job. These skills are the machining and welding skills that require modern technologies and up to date equipment as well as the communication skills and skills of a life-long learner. All the items, equipment and resources stated above, directly align to those learning objectives in that they are necessary for the learning of the skills needed for these high-quality jobs. The hiring of an APT assists in all aspects of the students' education, from safety, to assisting in assessments and curriculum to counseling and registration.</p>
<p>RESOURCE REQUESTS: For each "budget-ask" item, answer the following questions:</p>	
<p>What are the implications or consequences for the program if this request is not funded?</p>	<ol style="list-style-type: none"> 1. Position is currently being filled. 2. Less practice and learning time for students in the lab. 3. Less materials for students to work with, again, less

	<p>hands-on learning in the lab.</p> <ol style="list-style-type: none"> 4. The ventilation system is currently 30 years old and currently running, but not up to par. The ventilation system is running at the minimal acceptable level of operation. If the system goes down, it will be a big safety concern. 5. Students are unable to use current software that they would find in the industry, resulting in less qualified graduates. 6. Students are unable to use the latest technology in industry, resulting in less qualified graduates.
<p>How can the program build, create, or develop the needed resources within its existing capacity?</p>	<ol style="list-style-type: none"> 1. N/A 2. Program is currently investigating and discussing ways to acquire these resources. 3. Not at this magnitude 4. This is a safety issue that is not in our control. The life-time of this equipment has expired. 5. The program is looking at creating work orders to help alleviate this need. 6. The program researching possibilities.
<p>Can other resources be re-purposed to accommodate this need?</p>	<ol style="list-style-type: none"> 1. N/A, Need has been filled. 2. Possible donations could alleviate some of this need. 3. Program is researching options. 4. No 5. No 6. No
<p>Are there other sources to fund this need, such as grants, community partnerships, etc.?</p>	<p>We will see if our vendors and community partners are able to donate materials/supplies and/or equipment and research the possibilities of grant opportunities. We will also talk with our Advisory Council to find other ways to support the program.</p>
<p>Can this need be deferred? If so, for how long? What are the consequences if deferred?</p>	<ol style="list-style-type: none"> 1. Already in effect 2. Program is making due without these supplies as best we can, without them, there are not as many hands-on projects as the instructors would find ideal. 3. Deferring the updated sheet metal equipment will result in

	<p>graduates with skills that are not completely up to industry standards.</p> <ol style="list-style-type: none">4. The ventilation system can only be deferred for a short time, maybe less than a year. Any longer will result in possible safety issues.5. Yes, this can be deferred for a year, maybe. It is necessary for student learning and is a possible way of generating funds to support the program.6. Yes, until technology has gotten better and prices go down. At the moment there are no consequences, but in the near future we could lose enrollment if our equipment is out of date.
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Hawaii Community College

2014 Annual Report of Instructional Program Data

Machine, Welding & Industrial Mech Tech

The last comprehensive review for this program can be viewed at:

http://hawaii.hawaii.edu/program-unit-review/docs/2008_mwim_comprehensive_instructional_program_review.pdf

Program Description

This program prepares the student for employment in the metalworking and mechanical/maintenance trades. Employment may be in construction, food processing, manufacturing, utilities, astronomical observatories, or related industries. The job requires good physical health, above average eye/hand coordination, mechanical reasoning, and good form perception and spatial relationship. Job responsibilities may include fabricating, repairing, or maintaining metal products on equipment, buildings, and systems.

The MWIM Tech Program accepts all students from all segments of our community that meet the Community College's open-door requirements. It is an open entry/exit program that serves multiple occupational opportunities in the metal fabrication/welding field. Applicable Certificate of Completion, Certificate of Achievement, and Associate of Applied Science degree will be awarded to graduates.

Science Degrees. With the continued restructuring of this program it will be able to also better service the industrial mechanics, installation, maintenance and repair occupations.

The MWIM Program's has initiated a new compressed curriculum combining existing modules to form larger units of study. This direction will hopefully improve current student interest and entice new students who are seeking a career or looking to upgrade skills in the work place.

Part I. Quantitative Indicators

Overall Program Health: **Healthy**

Majors Included: MWIM Program CIP: 48.0508

Demand Indicators		Program Year			Demand Health Call
		11-12	12-13	13-14	
1	New & Replacement Positions (State)	30	35	21	Healthy
2	*New & Replacement Positions (County Prorated)	3	3	2	
3	*Number of Majors	42	27	30.5	
3a	Number of Majors Native Hawaiian	21	13	16	
3b	Fall Full-Time	68%	56%	72%	
3c	Fall Part-Time	32%	44%	28%	
3d	Fall Part-Time who are Full-Time in System	0%	0%	0%	
3e	Spring Full-Time	62%	63%	72%	
3f	Spring Part-Time	38%	37%	28%	
3g	Spring Part-Time who are Full-Time in System	0%	0%	0%	
4	SSH Program Majors in Program Classes	744	334	558	
5	SSH Non-Majors in Program Classes	32	0	0	
6	SSH in All Program Classes	776	334	558	
7	FTE Enrollment in Program Classes	26	11	19	
8	Total Number of Classes Taught	22	8	9	

Efficiency Indicators		Program Year			Efficiency Health Call
		11-12	12-13	13-14	
9	Average Class Size	13.9	8.6	12.3	Healthy
10	*Fill Rate	72.9%	45.3%	71.6%	
11	FTE BOR Appointed Faculty	2	1	1	
12	*Majors to FTE BOR Appointed Faculty	21	27	30.5	
13	Majors to Analytic FTE Faculty	18.3	19.2	19.6	
13a	Analytic FTE Faculty	2.3	1.4	1.6	
14	Overall Program Budget Allocation	\$168,787	\$104,827	\$125,321	
14a	General Funded Budget Allocation	\$142,549	\$60,456	\$98,835	
14b	Special/Federal Budget Allocation	\$0	\$10,179	\$5,499	
14c	Tuition and Fees	\$26,238	\$30,867	\$20,909	
15	Cost per SSH	\$218	\$314	\$225	
16	Number of Low-Enrolled (<10) Classes	3	3	3	

*Data element used in health call calculation

Last Updated: January 25, 2015

Effectiveness Indicators		Program Year			Effectiveness Health Call
		11-12	12-13	13-14	
17	Successful Completion (Equivalent C or Higher)	88%	100%	89%	Cautionary
18	Withdrawals (Grade = W)	3	0	0	
19	*Persistence Fall to Spring	77.2%	74%	78.1%	
19a	Persistence Fall to Fall		35%	53.5%	
20	*Unduplicated Degrees/Certificates Awarded	13	15	6	
20a	Degrees Awarded	10	15	6	
20b	Certificates of Achievement Awarded	4	9	4	
20c	Advanced Professional Certificates Awarded	0	0	0	
20d	Other Certificates Awarded	0	1	1	
21	External Licensing Exams Passed	Not Reported	Not Reported	Not Reported	
22	Transfers to UH 4-yr	0	0	2	
22a	Transfers with credential from program	0	0	0	
22b	Transfers without credential from program	0	0	2	

Distance Education: Completely On-line Classes		Program Year			
		11-12	12-13	13-14	
23	Number of Distance Education Classes Taught	0	0	0	
24	Enrollments Distance Education Classes	N/A	N/A	N/A	
25	Fill Rate	N/A	N/A	N/A	
26	Successful Completion (Equivalent C or Higher)	N/A	N/A	N/A	
27	Withdrawals (Grade = W)	N/A	N/A	N/A	
28	Persistence (Fall to Spring Not Limited to Distance Education)	N/A	N/A	N/A	

Perkins IV Core Indicators 2012-2013		Goal	Actual	Met	
29	1P1 Technical Skills Attainment	90.00	100.00	Met	
30	2P1 Completion	55.00	76.92	Met	
31	3P1 Student Retention or Transfer	74.50	72.73	Not Met	
32	4P1 Student Placement	65.00	66.67	Met	
33	5P1 Nontraditional Participation	17.25	0.00	Not Met	
34	5P2 Nontraditional Completion	15.55	0.00	Not Met	

Performance Funding		Program Year			
		11-12	12-13	13-14	
35	Number of Degrees and Certificates		24	10	
36	Number of Degrees and Certificates Native Hawaiian		10	0	
37	Number of Degrees and Certificates STEM		Not STEM	Not STEM	
38	Number of Pell Recipients		23	17	
39	Number of Transfers to UH 4-yr		0	2	

*Data element used in health call calculation

Last Updated: January 25, 2015

[Glossary](#) | [Health Call Scoring Rubric](#)

Part II. Analysis of the Program

The MWIM Program welcomes all segments of our Hawai'i island community including nontraditional students (gender and age), those with physical disabilities, and the general public, no matter their social economic standing, religion, ethnicity or sexual orientation. The Program has continually enrolled Native Hawaiian students and women who have become productive and engaged citizens in the community.

Native Hawaiian enrollment although lower than last year, continues to be proportionately high.

- ARDP Demand indicator 3a. Further involvement with the DOE, KSBE, and our counseling staff to increase recruitment.

Successfully collapsed multiple modular courses into larger block type courses.

- This program modification presents an effective and better defined transition between the three components of MWIM. Students will receive comprehensive instruction in an orderly and logical manner.

Successful Completion (Equivalent C or Higher).

- ARDP Effectiveness Indicator 17.

ARDP Demand Indicator 2. The weak economy and poor construction industry has contributed to the low position availability. The MWIM Program is the only program of its kind in the State. Therefore, we are investigating the possibility of addressing the positions at the state level including the Astronomy community.

The Program did not accept new students in the Fall 2011 semester. This was the cause of the lower student count. Also, one instructor position was eliminated in Fall 2011.

Four of the six indicators were "not met" because of the stop out in Fall 2011, the struggling economy and construction industry, industry reluctance to accept females on an equal basis with males, until this trend ends we will not see any improvement.

Part III. Action Plan

Implementation of virtual welder trainer. ILO 1 ILO 2

Update/redo sheet metal lab. Replace 60 year old equipment as required. ILO 2 ILO 3

Perkins IV Core Indicators

The MWIM Program has achieved the goals set by the indicators in 2 out of 6 areas (Technical Skills Attainment, Student Retention or Transfer.) Student Placement is proportionately affected by the job market: last year construction was down. Non-traditional student enrollment is historically low because MWIM is perceived as a male oriented trade. Therefore, Non-traditional Completion may be low as Non-trad students recognize actual or perceived obstacles as they progress through the program. Attracting female students has always been a challenge, especially because of the industry's reluctance to accept them on an equal basis with males. Until this trend ends, we will not see any great improvement in this area.

5P1 The Program will actively promote and recruit non-traditional students with the intent of graduating entry level workers in MWIM related fields. Each semester.

5P2 Use qualified service people for those with disabilities where applicable. Each semester.

Part IV. Resource Implications

No content.

Program Student Learning Outcomes

For the 2013-2014 program year, some or all of the following P-SLOs were reviewed by the program:

Assessed this year?	Program Student Learning Outcomes	
1	No	• Recognize good employee attributes; good safety practices; positive work ethics; working collaboratively or independently under supervision; an awareness of hazardous materials and a responsibility for the orderliness and cleanliness of the workplace.
2	No	• Practice eye and hand coordination and dexterity in the proper set-up and use of the basic machine tools and equipment; metalworking equipment; the common welding & cutting processes; industrial mechanics equipment; material handling equipment and related machinery.
3	No	• Understand mechanical reasoning: form perception & spatial relations; numerical reasoning and communication skills as a part of the basic entry-level skills and knowledge to gain employment in the machining, welding, industrial mechanics or related fields.
4	No	• Use/operate, in a safe manner: common hand tools; layout tools; measuring tools; precision measuring tools; common cutting & forming tools, tools used with the common fasteners and specialty tools and the common metalworking and mechanic tools.
5	No	• Understand form perception and spatial relations in the applications of geometric construction; the three common methods of pattern development; industrial practices in framing and structural fabrication; practices in welding joint design & joint preparation and the common machine shop operations & practices.
6	No	• Utilize the skills of a life-long learner; the ability to read blueprints; knowledge of metals and the common materials & supplies; the ability to do the work related math; the ability to communicate and read technical materials; and the ability to use available technical resources.

A) Evidence of Industry Validation

The Program has an advisory team comprised of the program faculty, members of the community employed in the machine and weld industry and, when possible, graduates of the program. The advisory team meets annually.

Darrell Miyashiro – Instructor MWIM

Malcolm Chun - Instructor MWIM

Mark Devenot – Keck Observatory – Supervisor

Cooper Nakayama – Gemini Observatory

4:10pm - Meeting Starts

4:15pm Introduction between Mark who is on PolyCom and Malcolm and Darrell. Mark expresses interest in working with HawCC and identifying areas of need in both college and the Keck Observatory.

4:17 Cooper walks in. Malcolm starts with trying to identify what and how HawCC can better train the HawCC students.

4:18 Mark recommends for HawCC instructors to explain what's available to the students since he's familiar with what the college offers.

4:20 Darrell explains programs and how programs have changed. Darrell expressed concerns about the time frame it takes for students to complete a degree. Darrell is wondering how to restructure the program to be more effective and keeping enrollment high.

4:21 Mark explains what the Observatory needs as far as skills go. Mark explains that Kerk has a lot of different projects coming online and they are in need of welders. (No exact numbers given).

4:23 Cooper explains that there is space for some of HawCC students. Cooper explains that although there are opportunities for HawCC students at the observatories, the observatories cannot take all students or cannot absorb all HawCC Students.

4:25 Darrell explains how although there are not many openings in the observatories, there is room for HawCC program to be training in some specific skills that the observatories will need.

4:28 Malcolm discusses concerns over expenses with equipment in welding (Gas). Cooper also discusses the importance of teaching basics of welding and making sure students have the basic principles mastered.

4:30 Malcolm discusses the classes he teaches and the equipment he uses although he expresses concerns that the equipment is old. Malcolm also explains how he wants to start a class tailored to meet the needs of the observatories.

4:32 Cooper explains that learning too much in one program may hurt the student since they may not be able to handle too much training. Cooper explains that students may have trouble learning all the course content since the content is complex.

4:34 Darrell discusses how teaching all the principles is important since students must learn all the basics first.

B) Expected Level Achievement

The expected performance level: 80% of the students will achieve Good or Excellent as stated in the rubric.

C) Courses Assessed

Mach 26

D) Assessment Strategy/Instrument

No content provided.

E) Results of Program Assessment

100% of the artifacts were excellent or good based on the rubric's criteria.

Following the evaluations the assessment team discussed the effectiveness of the rubric and agreed it is an effective instrument for evaluating this assignment.

F) Other Comments

No content.

G) Next Steps

Though the assessors were in agreement using the provided rubric, in scoring all of the artifacts at the proficient level, the program will continue to be cognizant to any concerns to ensure that objectives are being met.

Hawaii Community College

2015 Annual Report of Instructional Program Data

Machine, Welding & Industrial Mech Tech

The last comprehensive review for this program can be viewed at:

http://hawaii.hawaii.edu/program-unit-review/docs/2008_mwim_comprehensive_instructional_program_review.pdf

Program Description

This program prepares the student for employment in the metalworking and mechanical/maintenance trades. Employment may be in construction, food processing, manufacturing, utilities, astronomical observatories, or related industries. The job requires good physical health, above average eye/hand coordination, mechanical reasoning, and good form perception and spatial relationship. Job responsibilities may include fabricating, repairing, or maintaining metal products on equipment, buildings, and systems.

The MWIM Tech Program accepts all students from all segments of our community that meet the Community College's open-door requirements. It is an open entry/exit program that serves multiple occupational opportunities in the metal fabrication/welding field. Applicable Certificate of Completion, Certificate of Achievement, and Associate of Applied Science degree will be awarded to graduates.

With the continued restructuring of this program it will be able to also better service the industrial mechanics, installation, maintenance and repair occupations.

The MWIM Program initiated a new compressed curriculum beginning in 2011, combining existing modules to form larger units of study. This has not served our students as well as hoped.

Program Mission: The MWIM Program will provide the knowledge, and teach skills required for the entry level machine, welding and industrial mechanics occupations. The program will also instill good work ethics, a positive attitude, and accountability that will make him/her EMPLOYABLE in a variety of related industries as well as basic preparation to enter any employment field.

Part I. Quantitative Indicators

Overall Program Health: **Cautionary**

Majors Included: MWIM Program CIP: 48.0508

Demand Indicators		Program Year			Demand Health Call
		12-13	13-14	14-15	
1	New & Replacement Positions (State)	35	21	19	Unhealthy
2	*New & Replacement Positions (County Prorated)	3	2	2	
3	*Number of Majors	27	31	33	
3a	Number of Majors Native Hawaiian	13	16	14	
3b	Fall Full-Time	56%	72%	86%	
3c	Fall Part-Time	44%	28%	14%	
3d	Fall Part-Time who are Full-Time in System	0%	0%	0%	
3e	Spring Full-Time	63%	72%	84%	
3f	Spring Part-Time	37%	28%	16%	
3g	Spring Part-Time who are Full-Time in System	0%	0%	0%	
4	SSH Program Majors in Program Classes	334	558	718	
5	SSH Non-Majors in Program Classes	0	0	15	
6	SSH in All Program Classes	334	558	733	
7	FTE Enrollment in Program Classes	11	19	24	
8	Total Number of Classes Taught	8	9	10	

Efficiency Indicators		Program Year			Efficiency Health Call
		12-13	13-14	14-15	
9	Average Class Size	8.6	12.3	13.4	Healthy
10	*Fill Rate	45.3%	71.6%	72.8%	
11	FTE BOR Appointed Faculty	1	1	2	
12	*Majors to FTE BOR Appointed Faculty	27	30.5	16.5	
13	Majors to Analytic FTE Faculty	19.2	19.6	16.5	
13a	Analytic FTE Faculty	1.4	1.6	2	
14	Overall Program Budget Allocation	\$104,827	\$125,321	Not Reported	
14a	General Funded Budget Allocation	\$60,456	\$98,835	Not Reported	
14b	Special/Federal Budget Allocation	\$10,179	\$5,499	Not Reported	
14c	Tuition and Fees	\$30,867	\$20,909	Not Reported	
15	Cost per SSH	\$314	\$225	Not Reported	
16	Number of Low-Enrolled (<10) Classes	3	3	0	

*Data element used in health call calculation

Last Updated: October 7, 2015

Effectiveness Indicators		Program Year			Effectiveness Health Call
		12-13	13-14	14-15	
17	Successful Completion (Equivalent C or Higher)	100%	89%	96%	Healthy
18	Withdrawals (Grade = W)	0	0	3	
19	*Persistence Fall to Spring	74%	78.1%	76.4%	
19a	Persistence Fall to Fall	35%	53.5%	50%	
20	*Unduplicated Degrees/Certificates Awarded	15	6	11	
20a	Degrees Awarded	15	6	1	
20b	Certificates of Achievement Awarded	9	4	1	
20c	Advanced Professional Certificates Awarded	0	0	0	
20d	Other Certificates Awarded	1	1	9	
21	External Licensing Exams Passed	Not Reported	Not Reported	Not Reported	
22	Transfers to UH 4-yr	0	2	0	
22a	Transfers with credential from program	0	0	0	
22b	Transfers without credential from program	0	2	0	

Distance Education: Completely On-line Classes		Program Year		
		12-13	13-14	14-15
23	Number of Distance Education Classes Taught	0	0	0
24	Enrollments Distance Education Classes	N/A	N/A	N/A
25	Fill Rate	N/A	N/A	N/A
26	Successful Completion (Equivalent C or Higher)	N/A	N/A	N/A
27	Withdrawals (Grade = W)	N/A	N/A	N/A
28	Persistence (Fall to Spring Not Limited to Distance Education)	N/A	N/A	N/A

Perkins IV Core Indicators 2013-2014		Goal	Actual	Met
29	1P1 Technical Skills Attainment	91.00	71.43	Not Met
30	2P1 Completion	47.00	28.57	Not Met
31	3P1 Student Retention or Transfer	75.21	83.33	Met
32	4P1 Student Placement	68.92	53.85	Not Met
33	5P1 Nontraditional Participation	17.50	6.90	Not Met
34	5P2 Nontraditional Completion	16.00	0.00	Not Met

Performance Funding		Program Year		
		12-13	13-14	14-15
35	Number of Degrees and Certificates	24	10	2
36	Number of Degrees and Certificates Native Hawaiian	10	0	1
37	Number of Degrees and Certificates STEM	Not STEM	Not STEM	Not STEM
38	Number of Pell Recipients	23	17	19
39	Number of Transfers to UH 4-yr	0	2	0

*Data element used in health call calculation

Last Updated: October 7, 2015

[Glossary](#) | [Health Call Scoring Rubric](#)

Part II. Analysis of the Program

The MWIM program is unfairly misrepresented by using a single program CIP code. For example, the MWIM program teaches students how to weld (CIP 48.05.08), machine (CIP 48.05.01), sheet metal (CIP 48.05.06), and computer numeric control (CIP 48.05.10).

It is understood that the program is only allowed to use just one CIP.

CIP 48.05.01 Machine Tool Technology

CIP 48.05.06 Sheet Metal Technology

CIP 48.05.08 Welding Technology

CIP 48.05.10 Computer Numeric Control (CNC)

The demand indicators for the MWIM program demand health call is unhealthy. This is due to the way the demand and effectiveness is calculated differently in 2015 as compared to 2014. The measure needs to go back to the way it was in the 2014 cycle; this will correct the unhealthy indicator.

Regarding the Perkins Core indicators, five of the six indicators were "not met" because the struggling economy and construction industry, and industry reluctance to accept females on an equal basis with males. Until these trends end, we will not see any improvement.

Part III. Action Plan

Currently, the MWIM schedule is from 12-9 p.m. M/W and 5-9 p.m. T/R. I plan to adjust the starting hours to an earlier starting time of 7:30 or 8:00 a.m. This will align with starting times of other programs and allow students to attend elective classes in the afternoon. There is also no reason to maintain the old class hours as they were tailored to accommodate workers from the plantation days.

Implement a minimum math and reading comprehension requirement. The machine shop technology portion of the MWIM program requires that students can perform mathematical calculations such as geometry, trigonometry, and conversion of fractions to decimals, adding and subtraction of fraction.

I would implement an intern program where students can gain valuable on-the-job training from industry such as the machine shops at the observatories. I would set a minimum qualification of 3.3 GPA, drug screening, and minimum of two letters of recommendation from instructors of student choice. This would support the college's strategic plan of the innovative initiative for higher technical skills.

Part IV. Resource Implications

The MWIM program is in need of a proper corrosive/acid storage cabinet to properly store welding fluxes. This would enhance the programs chemical hygiene plan for safe use and storage of such chemicals. The guideline for safe storage is 29 CFR (Code of Federal Regulations) Standard 1910.1450. The estimated cost for a 45 gallon capacity corrosive/acid cabinet is \$1,800 and is available through local vendors such as Airgas Hawaii, Fastenal, and Matheson.

Program Student Learning Outcomes

For the 2014-2015 program year, some or all of the following P-SLOs were reviewed by the program:

Assessed this year?	Program Student Learning Outcomes	
1	No	• Recognize good employee attributes; good safety practices; positive work ethics; working collaboratively or independently under supervision; an awareness of hazardous materials and a responsibility for the orderliness and cleanliness of the workplace.
2	No	• Practice eye and hand coordination and dexterity in the proper set-up and use of the basic machine tools and equipment; metalworking equipment; the common welding & cutting processes; industrial mechanics equipment; material handling equipment and related machinery.
3	No	• Understand mechanical reasoning; form perception & spatial relations; numerical reasoning and communication skills as a part of the basic entry-level skills and knowledge to gain employment in the machining, welding, industrial mechanics or related fields.
4	No	• Use/operate, in a safe manner: common hand tools; layout tools; measuring tools; precision measuring tools; common cutting & forming tools, tools used with the common fasteners and specialty tools and the common metalworking and mechanic tools.
5	No	• Understand form perception and spatial relations in the applications of geometric construction; the three common methods of pattern development; industrial practices in framing and structural fabrication; practices in welding joint design & joint preparation and the common machine shop operations & practices.
6	No	• Utilize the skills of a life-long learner; the ability to read blueprints; knowledge of metals and the common materials & supplies; the ability to do the work related math; the ability to communicate and read technical materials; and the ability to use available technical resources.

A) Evidence of Industry Validation

The Program has an advisory team comprised of the program faculty, members of the community employed in the machine and weld industry and, when possible, graduates of the program. The advisory team meets annually. Minutes of the Feb 2015 meeting are below.

Darrell Miyashiro – Instructor MWIM

Malcolm Chun - Instructor MWIM

Mark Devenot – Keck Observatory – Supervisor

Cooper Nakayama – Gemini Observatory

4:10pm - Meeting Starts

4:15pm Introduction between Mark who is on PolyCom and Malcolm and Darrell. Mark expresses interest in working with HawCC and identifying areas of need in both college and the Keck Observatory.

4:17 Cooper walks in. Malcolm starts with trying to identify what and how HawCC can better train the HawCC students.

4:18 Mark recommends for HawCC instructors to explain what's available to the students since he's familiar with what the college offers.

4:20 Darrell explains programs and how programs have changed. Darrell expressed concerns about the time frame it takes for students to complete a degree. Darrell is wondering how to restructure the program to be more effective and keeping enrollment high.

4:21 Mark explains what the Observatory needs as far as skills go. Mark explains that Keck has a lot of different projects coming online and they

are in need of welders. (No exact numbers given).

4:23 Cooper explains that there is space for some of HawCC students. Cooper explains that although there are opportunities for HawCC students at the observatories, the observatories cannot take all students or cannot absorb all HawCC Students.

4:25 Darrell explains how although there are not many openings in the observatories, there is room for HawCC program to be training in some specific skills that the observatories will need.

4:28 Malcolm discusses concerns over expenses with equipment in welding (Gas). Cooper also discusses the importance of teaching basics of welding and making sure students have the basic principles mastered.

4:30 Malcolm discusses the classes he teaches and the equipment he uses although he expresses concerns that the equipment is old. Malcolm also explains how he wants to start a class tailored to meet the needs of the observatories.

4:32 Cooper explains that learning too much in one program may hurt the student since they may not be able to handle too much training. Cooper explains that students may have trouble learning all the course content since the content is complex.

4:34 Darrell discusses how teaching all the principles is important since students must learn all the basics first.

B) Expected Level Achievement

COURSE #	Expected Level of Achievement
MWIM 42	70% passing grade
MWIM62	70% passing grade
MWIM52	70% passing grade
MWIM72	70% passing grade
MWIM45	70% developing proficiency
MWIM55	70% developing proficiency
MWIM645	70% developing proficiency
MWIM75	70% developing proficiency

C) Courses Assessed

Assessed Course Alpha, No., & Title	Semester assessed	PLO-aligned CLOs that were assessed Example: CLO1 aligned to PLO3
MWIM42 Intro to Machine and Welding	Fall 14	CLO1 aligned to PLO2
MWIM62 Lathe Facing and Knurling	Fall 14	CLO1 aligned to PLO4
MWIM52 Sheet Metal and Intro to Lathes	Spring 15	CLO3 aligned to PLO5
MWIM72 Vertical Milling Machine and Intro to CNC	Spring 15	CLO3 aligned to PLO3

MWIM45 Introduction to Arc Welding	Fall 14	CLO3 aligned to PLO1
MWIM55 Intermediate Welding and Quality Procedures	Fall 14	CLO3 aligned to PLO5
MWIM65 Advance Welding	Spring 15	CLO3 aligned to PLO5
MWIM75 Special Process Welding and Rigging	Spring 15	CLO3 aligned to PLO5
“Closing the Loop” Assessments Alpha, No., & Title	Semester assessed	PLO-aligned CLOs that were assessed
None		

D) Assessment Strategy/Instrument

COURSE #	Assessment Strategy	Rubric/Scoring Instruments
MWIM 42	Give a test on all the aspects of occupational safety and health administration. . . .	Text book subject matter test
MWIM62	Give written test to determine students understanding and knowledge of machinist tools	Text book subject matter test
MWIM52	Student to demonstrate basic pattern layout	Text book subject matter test
MWIM72	Student to demonstrate machining patterns	Text book subject matter test
MWIM 45	Students to demonstrate arc welding using the virtual arc welder	Utilized a performance rubric to establish proficiency ratings.
MWIM65	welding exercise	Utilized a performance rubric to establish proficiency ratings.
MWIM55	Demonstrated and described proper welding techniques in various welding positions on the Virtual Welder.	Utilized a performance rubric to establish proficiency ratings.
MWIM75	Demonstrated MIG welding on the Virtual Welder.	Utilized a performance rubric to establish proficiency ratings.

E) Results of Program Assessment

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	Results
MWIM 42	Test was to measure students' comprehension of safety in the shop and understanding of OSHA. Class achieved 90 percent average score.
MWIM62	Test of student's measure students understand of external Acme thread result was 83 percent passing.
MWIM52	Sheet metal project to measure to measure student's understand of sheet metal was 89 percent.
MWIM72	Test to measure student's understanding of components of Vertical Milling Machine was 91 percent.
MWIM 45	We set a minimum goal of 70% of the students at Developing Proficiency and we assessed at 95.5% Proficient. We have found that students grasp the concepts and understand the materials being covered in this curriculum.
MWIM65	We set a minimum goal of 70% of the students at Developing Proficiency and we assessed at 94.8% Developing Proficiency. We have found that students grasp the concepts and understand the materials being covered in this curriculum.
MWIM55	All students were assessed above the set goal. The students had an average rating of 91% proficient, which is much higher than the set goal.
MWIM75	All students were assessed above the set goal. The students had an average rating of 82.5% developing proficiency which is higher than the set goal.

F) Other Comments

None at this time.

G) Next Steps

The next step to enhance instructions would be to provide more variety in hands on projects. Also, there is a greater need in increase the text book theory on applications such as using and reading precision measuring instruments. Students seem to learn this in the beginning, but show difficulty in using and reading precision measuring instruments.

COURSE #	Assessment Strategy/CLO	Rubric/Scoring Instruments/PLO
MWIM 42	Give a test on all the aspects of occupational safety and health administration. CLO 1 Explain purpose of OSHA Act.	Text book subject matter test PLO2 Demonstrate good safety practices
MWIM62	Give written test to determine students understanding and knowledge of machinist tools. CLO1 Describe fundamental knowledge of machine tools.	Text book subject matter test PLO4 Demonstrate use of shop tools and instruments.
MWIM52	Student to demonstrate basic pattern layout. CLO3 Calculate geometric patterns.	Text book subject matter test. PLO5 Demonstrate pattern development.

MWIM72	<p>Student to demonstrate machining patterns.</p> <p>CLO3 Calculate cutting speeds and feeds for various metals.</p>	<p>Text book subject matter test.</p> <p>PLO3 Demonstrate the use of proper speeds and feeds during cutting operations.</p>
MWIM 45	<p>Students to demonstrate arc welding using the virtual arc welder.</p> <p>CLO3 Select proper welding techniques</p>	<p>Utilized a performance rubric to establish proficiency ratings.</p> <p>PLO3 Demonstrate proper welding techniques.</p>
MWIM65	<p>welding exercise</p> <p>CLO5 Order of welding operation.</p>	<p>Utilized a performance rubric to establish proficiency ratings.</p> <p>PLO5 Demonstrate proper sequence in welding.</p>
MWIM55	<p>Demonstrated and described proper welding techniques in various welding positions on the Virtual Welder.</p> <p>CLO5 Select proper welding procedures.</p>	<p>Utilized a performance rubric to establish proficiency ratings.</p> <p>PLO3 Demonstrate hand and eye coordination.</p>
MWIM75	<p>Demonstrated MIG welding on the Virtual Welder.</p> <p>CLO2 Use of MIG equipment.</p>	<p>Utilized a performance rubric to establish proficiency ratings.</p> <p>PLO1 Demonstrate MIG welding skills.</p>

Hawaii Community College

2013 Annual Report of Instructional Program Data

Machine, Welding & Industrial Mech Tech

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Program Description

This program prepares the student for employment in the metalworking and mechanical/maintenance trades. Employment may be in construction, food processing, manufacturing, utilities, astronomical observatories, or related industries. The job requires good physical health, above average eye/hand coordination, mechanical reasoning, and good form perception and spatial relationship. Job responsibilities may include fabricating, repairing, or maintaining metal products on equipment, buildings, and systems.

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Science Degrees. With the continued restructuring of this program it will be able to also better service the industrial mechanics, installation, maintenance and repair occupations.

The MWIM Program's has initiated a new compressed curriculum combining existing modules to form larger units of study. This direction will hopefully improve current student interest and entice new students who are seeking a career or looking to upgrade skills in the work place.

Program Mission

The MWIM Program will provide the knowledge, and teach skills required for the entry level machine, welding and industrial mechanics occupations. The program will also instill good work ethics, a positive attitude, and accountability that will make him/her EMPLOYABLE in a variety of related industries as well as basic preparation to enter any employment field.

Part I. Quantitative Indicators

Overall Program Health: **Cautionary**

Majors Included: MWIM Program CIP: 48.0508

Demand Indicators		Program Year			Demand Health Call
		10-11	11-12	12-13	
1	New & Replacement Positions (State)	34	30	35	Unhealthy
2	*New & Replacement Positions (County Prorated)	4	3	3	
3	*Number of Majors	47	42	27	
3a	Number of Majors Native Hawaiian	24	21	13	
3b	Fall Full-Time	67%	68%	56%	
3c	Fall Part-Time	33%	32%	44%	
3d	Fall Part-Time who are Full-Time in System	0%	0%	0%	
3e	Spring Full-Time	73%	62%	63%	
3f	Spring Part-Time	28%	38%	37%	
3g	Spring Part-Time who are Full-Time in System	0%	0%	0%	
4	SSH Program Majors in Program Classes	650	744	334	
5	SSH Non-Majors in Program Classes	105	32	0	
6	SSH in All Program Classes	755	776	334	
7	FTE Enrollment in Program Classes	25	26	11	
8	Total Number of Classes Taught	19	22	8	

Efficiency Indicators		Program Year			Efficiency Health Call
		10-11	11-12	12-13	
9	Average Class Size	16.3	13.9	8.6	Cautionary
10	*Fill Rate	97.4%	72.9%	45.3%	
11	FTE BOR Appointed Faculty	2	2	1	
12	*Majors to FTE BOR Appointed Faculty	23.5	21	27	
13	Majors to Analytic FTE Faculty	25.4	18.3	19.2	
13a	Analytic FTE Faculty	1.9	2.3	1.4	
14	Overall Program Budget Allocation	\$192,771	\$168,787	\$104,827	
14a	General Funded Budget Allocation	\$191,508	\$142,549	\$60,456	
14b	Special/Federal Budget Allocation	\$1,263	\$0	\$10,179	
14c	Tuition and Fees	\$0	\$26,238	\$30,867	
15	Cost per SSH	\$255	\$218	\$314	
16	Number of Low-Enrolled (<10) Classes	0	3	3	

*Data element used in health call calculation

Last Updated: January 27, 2014

Effectiveness Indicators		Program Year			Effectiveness Health Call
		10-11	11-12	12-13	
17	Successful Completion (Equivalent C or Higher)	87%	88%	100%	Cautionary
18	Withdrawals (Grade = W)	7	3	0	
19	*Persistence Fall to Spring	73%	77.2%	74%	
19a	Persistence Fall to Fall			35%	
20	*Unduplicated Degrees/Certificates Awarded	12	13	15	
20a	Degrees Awarded	10	10	15	
20b	Certificates of Achievement Awarded	3	4	9	
20c	Advanced Professional Certificates Awarded	0	0	0	
20d	Other Certificates Awarded	1	0	1	
21	External Licensing Exams Passed		Not Reported	Not Reported	
22	Transfers to UH 4-yr	0	0	0	
22a	Transfers with credential from program	0	0	0	
22b	Transfers without credential from program	0	0	0	

Distance Education: Completely On-line Classes		Program Year			
		10-11	11-12	12-13	
23	Number of Distance Education Classes Taught	0	0	0	
24	Enrollments Distance Education Classes	N/A	N/A	N/A	
25	Fill Rate	N/A	N/A	N/A	
26	Successful Completion (Equivalent C or Higher)	N/A	N/A	N/A	
27	Withdrawals (Grade = W)	N/A	N/A	N/A	
28	Persistence (Fall to Spring Not Limited to Distance Education)	N/A	N/A	N/A	

Perkins IV Core Indicators 2011-2012		Goal	Actual	Met	
29	1P1 Technical Skills Attainment	90.00	91.67	Met	
30	2P1 Completion	50.00	41.67	Not Met	
31	3P1 Student Retention or Transfer	74.25	81.25	Met	
32	4P1 Student Placement	60.00	33.33	Not Met	
33	5P1 Nontraditional Participation	17.00	2.27	Not Met	
34	5P2 Nontraditional Completion	15.25	0.00	Not Met	

Performance Funding		Program Year			
		10-11	11-12	12-13	
35	Number of Degrees and Certificates			24	
36	Number of Degrees and Certificates Native Hawaiian			10	
37	Number of Degrees and Certificates STEM			Not STEM	
38	Number of Pell Recipients			23	
39	Number of Transfers to UH 4-yr			0	

*Data element used in health call calculation

Last Updated: January 27, 2014

[Glossary](#) | [Health Call Scoring Rubric](#)

Part II. Analysis of the Program

Overall Health – Cautionary

Demand – Unhealthy

The Demand Health Call is based on declared majors divided by the county of Hawaii's projected New and Replacement positions. The number of declared majors has fallen since last year but is still considered high for the amount of class openings. Potential applicants may perceive that the construction field has not shown a strong rebound yet (due to the economy) thus shying away from the MWIM field. The number of jobs available (County Prorated) is very low (3), again due to the poor economic situation. Until the construction industry and the economic situation improve, there is very little that the program can do.

Efficiency – Cautionary

The program has been consistent in filling all of the 16 slots that were available during the 2012/2013 year, averaging 8.6. A few students dropped due to the curriculum and rigor of the program not meeting their expectations. However the majority of those that do not persist to succeeding semesters are usually in response to unexpected personal or financial issues.

Effectiveness – Cautionary

Successful Completion increased by one percent from the previous year and at 100% validates that the program is successful in retaining students through the two year program. Withdrawals have dropped significantly in two years.

Significant Program Actions for 2012 - 2013

1. Continue to evaluate/assess, modify, new block courses.
2. Assess and link SLO's, PLO's, ILO's with MWIM's Advisory input.

Perkins IV Core Indicators

The MWIM Program has achieved the goals set by the indicators in 2 out of 6 areas (Technical Skills Attainment, Student Retention or Transfer.) Student Placement is proportionately affected by the job market: last year construction was down. Non-traditional student enrollment is historically low because MWIM is perceived as a male oriented trade. Therefore, Non-traditional Completion may be low as Non-trad students recognize actual or perceived obstacles as they progress through the program. Attracting female students has always been a challenge, especially because of the industry's reluctance to accept them on an equal basis with males. Until this trend ends, we will not see any great improvement in this area.

Part III. Action Plan

Program Action 1

Implementation of virtual welder trainer.

The new virtual welder will introduce a new technology into the program. This will enhance the students hands-on practice and reinforce the nomenclature and terms used in the work place. Hopefully, this new technology will increase student enrollment and with the much needed actual welding time, retain and increase degrees attainment by the under served population and the native Hawaiian population. We will assess the students at the end of the course with industry input.

Program Action 2

Update/redo sheet metal lab. Replace 60 year old equipment as required.

MWIM will align with AMP 22.4 (Expand course offerings as equipment/trainers become available) and 22.5 (Continuously evaluate/modify MWIM curriculum). We will align with ILO 2 and 3 by offering comprehensive instruction, using the latest methods and equipment, thus allowing native Hawaiians (majority of students) to utilize such skills, in any form and through employment, in their culture. (Strategic Plan B.1)

Program Action 3

Expand Machining curriculum by adding new CNC technologies and generally updating methods consistent with the industry.

To promote the local workforce in the area of Machining Technology to better serve the non-traditional and Hawaiian population. The astronomy programs throughout the state are in need of maintenance technicians to support their telescope repair and maintenance, which requires the latest machining techniques and especially CNC training.

Part IV. Resource Implications

Cost Item 1

Virtual Welder	Equipment	\$85,000
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Introduce students to welding with a safe, non-threatening trainer. Gain objective assessment immediately. Newest green technology to reduce toxic fumes in welding booths. Reduce the cost of consumables.

Cost Item 2

Update Sheet Metal Lab	Equipment	\$100,000
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To meet industry standards basic knowledge and strengthen student graduation rates.

Cost Item 3

Update machining lab with equipment and trainers.	Equipment	\$250,000
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The Advisory Council has suggested the program update these equipment to accommodate the astronomy community as well as global needs.

Program Student Learning Outcomes

For the 2012-2013 program year, some or all of the following P-SLOs were reviewed by the program:

Assessed this year?	Program Student Learning Outcomes	
1	Yes	<ul style="list-style-type: none"> Recognize good employee attributes; good safety practices; positive work ethics; working collaboratively or independently under supervision; an awareness of hazardous materials and a responsibility for the orderliness and cleanliness of the workplace.
2	Yes	<ul style="list-style-type: none"> Practice eye and hand coordination and dexterity in the proper set-up and use of the basic machine tools and equipment; metalworking equipment; the common welding & cutting processes; industrial mechanics equipment; material handling equipment and related machinery.
3	Yes	<ul style="list-style-type: none"> Understand mechanical reasoning: form perception & spatial relations; numerical reasoning and communication skills as a part of the basic entry-level skills and knowledge to gain employment in the machining, welding, industrial mechanics or related fields.
4	No	<ul style="list-style-type: none"> Use/operate, in a safe manner: common hand tools; layout tools; measuring tools; precision measuring tools; common cutting & forming tools, tools used with the common fasteners and specialty tools and the common metalworking and mechanic tools.
5	Yes	<ul style="list-style-type: none"> Understand form perception and spatial relations in the applications of geometric construction; the three common methods of pattern development; industrial practices in framing and structural fabrication; practices in welding joint design & joint preparation and the common machine shop operations & practices.
6	No	<ul style="list-style-type: none"> Utilize the skills of a life-long learner; the ability to read blueprints; knowledge of metals and the common materials & supplies; the ability to do the work related math; the ability to communicate and read technical materials; and the ability to use available technical resources.

A) Evidence of Industry Validation

The Program has an advisory team comprised of the program faculty, members of the community employed in the machine and weld industry and, when possible, graduates of the program. The advisory team meets annually.

B) Expected Level Achievement

The expected performance level: 80% of the students will achieve Good or Excellent as stated in the rubric.

C) Courses Assessed

Mach 26

D) Assessment Strategy/Instrument

Students have an assignment in which they will machine an acme threaded shaft with a knurled handle. From the student artifacts produced during the assignment, four were randomly chosen for use in the assessment.

E) Results of Program Assessment

100% of the artifacts were excellent or good based on the rubric's criteria.

F) Other Comments

Following the evaluations the assessment team discussed the effectiveness of the rubric and agreed it is an effective instrument for evaluating this assignment.

G) Next Steps

Though the assessors were in agreement ,using the provided rubric, in scoring all of the artifacts at the proficient level, the program will continue to be cognizant to any concerns to ensure that objectives are being met.