

HAWAI'I COMMUNITY COLLEGE  
PROGRAM ANNUAL REVIEW REPORT

**MACHINE WELDING AND INDUSTRIAL MECHANICS**

**Date: February 7<sup>th</sup>, 2017**

**Review Period**  
**July 1, 2015 to June 30, 2016**

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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 and Institutional 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.*

## PROGRAM DESCRIPTION

<b>Describe the Program</b>	
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.

### Comprehensive Review information: **Required for ARPD Web Submission**

Provide the year and URL for the location of this program's last Comprehensive Review on the HawCC Program/Unit Review website: <a href="http://hawaii.hawaii.edu/files/program-unit-review/">http://hawaii.hawaii.edu/files/program-unit-review/</a>	
Year	2013
URL	<a href="http://hawaii.hawaii.edu/files/program-unit-review/docs/2012-2013_mwim_comprehensive_program_review.pdf">Machine, Welding and Industrial Mechanics Technologies - MWIM http://hawaii.hawaii.edu/files/program-unit-review/docs/2012-2013_mwim_comprehensive_program_review.pdf</a>
Provide a short summary regarding the last Comprehensive Review for this program. Discuss any significant changes to the program since the last Comprehensive Review that are not discussed elsewhere in this review.	The last Comprehensive review was done November 2013. The loss of a faculty member has created some strains on the program, such as incomplete and/or missing assessment information and inconsistency with instructor/student relationships and expectations. The inconsistent assessments may have been flawed, but with help from the assessment coordinator, the assessments and or rubrics are being edited so that they most accurately reflect the desired learning outcome, or the performance test that is being assessed. *note: The main external factor is the late release of the ARPD data and the tight deadline of less than two weeks for this program review. The

	<p>timing just happened to be in a very busy month and if the data was out when we were supposed to have it, we wouldn't have had to do the Annual Review Report in February, when we were most busy. The outcome was not enough time to analyze and review in as much depth as we would have liked.</p> <p>There have not been any other significant changes in the last year that are not already discussed elsewhere in this review.</p>
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## QUANTITATIVE INDICATORS

### ARPD Data

**Please attach a copy of the program's ARPD data tables 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 of the data tables 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/>

## ANALYSIS OF THE PROGRAM'S DATA

<p><b>Analyze the program's ARPD data for the review period.</b> Describe, discuss, and provide context for the data, including the program's health scores in the following categories:</p>	
<p>Demand</p>	<p>Our demand indicator shows the program to be unhealthy with only 3 new and replacement positions in the county. It is our goal to track the success of our graduates in their work placement and current employment to show that there are more employment opportunities in the county overall than the ARPD data showed, giving us a more true number and a better Health Call. Because our CIP code is only for welding and not for machining or fabricating it does not reflect the students that go to work in machining and fabricating. Of our 8 graduates, 4 found work in their field. Already this shows us that there are at least 4 jobs available in our county. We will continue to track our students'</p>

	success as they enter the welding and machining and fabricating industries. <i>See attached sheet with number of graduates and locations of employment.</i>
Efficiency	For the 2015-2016 year, the demand health call is “cautionary” for the efficiency indicator. We do not have a 75% fill rate, but a 59.2% fill rate. This number is down from the year before which was very close to the 75% goal at 72.8%. We also have a 13.7 “Majors to FTE BOR Appointed Faculty” ratio which is very close to the 15 score which would make us “healthy.”
Effectiveness	The Health Call for the Effectiveness indicator is “Healthy” and we have an 85.7% persistence score from Fall to Spring and a 91% successful completion with C or higher.
Overall Health	The overall health of the program is “Cautionary,” due to the “Unhealthy” Demand Health Call and the “Cautionary” Efficiency Health Call. It is believed that the Demand Indicator is flawed because we only fall under one category in the CIP code for welding when we teach machining, and fabrication as well as welding, and our students are finding employment with the machining skills that they have attained through the course. The Efficiency Indicator was low because of students that did not continue on in the program. The 2015-16 year proved to be a difficult for a good portion of our students financially and with family support. Students talked about individual and family hardships more than other semesters. We believe that this is not the trend for our program, but the exception. We will continue to work on the Efficiency Indicator and look for ways in which to improve enrollment and support students in continuing on to their second year for graduation.
Distance Education	N/A because we do not teach distance education.
Perkins Core Indicators	For the 2015-16 year, the Perkins Core Indicator 1P1 Technical Skills Attainment, was met with a 100.00 score and a goal of 91.00. This shows that every student in the program received a 2.0 or better in the CTE courses that they were taking. This indicator also shows that the students all stopped participation the year that they reported. For the Perkins Core indicator 2P1 Completion, we did not meet the goal of 50.30. We had a 33.33 score for this indicator. The 2015-16 year proved to be a difficult for a good portion of our students financially and with family support. About 1/3 of the students openly spoke of individual and family hardships, higher than other semesters. These hardships directly affected their

<p>****The (CAR) or State goal and the College actual, get from the Perkins Consolidated Annual Report</p>	<p>attendance and ability to complete the program in a timely manner. Some of these students are still trying to finish their degrees and are just missing one or two classes. It is believed that this low number is not the trend, and does not reflect the actual completion rate in general.</p> <p>For the Perkins Core indicator 3P1 Student Retention or Transfer, the program did not meet the goal of 76.72 goal by 2.94. As was explained for the completion rates, the retention score is low for the very same reasons. There was an unusual amount of economic and personal hardships this year. The program is still supporting one student who has gotten approval to substitute a combination of different math courses for one single course to fulfill the requirement to graduate because of his/her disabilities. It is possible more students will still graduate from the 2015-16 year, just not as quickly due to hardship.</p> <p>We did not meet the Perkins Core indicator 4P1 Student Placement goal of 69.00. We missed the goal by 11.86. The data for this indicator is believed to be flawed because program can only use one CIP code. The program teaches students to weld (CIP 48.05.08), machine (CIP 48.05.01), sheet metal (CIP 48.05.06) and computer numeric controls (CIP 48.05.10), but we are allowed the one CIP code for welding. This data is from 2013-14, and we have decided to track our students work placement since then. We will have accurate data for the next AY 2016-17 Program Annual Review Report. We are currently tracking our students work placement and employment and will continue to do so in order to have accurate numbers for all of the future Program Annual Review Reports.</p> <p>The MWIM program did not meet the Perkins Core Indicator 5P1 Nontraditional Participation. The goal was 19.69 and the actual was 9.68. The MWIM program also did not meet the Perkins Core indicator 5P2 Nontraditional Completion. The goal was 19.36 and the actual was 00.00. The Perkins Core Indicator 5P1 and the 5P2 have always been a challenge and we are currently emphasizing recruitment of non-traditional students in our program by going to job fairs and talking to non-traditional students. The new APT is female and she is active in encouraging prospective non-traditional students to visit our booth/display, to ask questions or to try out the virtual reality welder on the various outings that we do to promote our program. We also encourage our non-traditional students to accompany us when we go to these job fairs and career days. We will continue to look for opportunities to recruit non-traditional students to our program.</p>
<p>Performance Funding Indicators (if applicable)</p>	<p>N/A</p>

<p>Describe any trends, and any internal and/or external factors that are relevant to understanding the program's data.</p>	<p>The main external factor is the late release of the ARPD data and the tight deadline of less than two weeks for this program review. The timing just happened to be in a very busy month and if the data was out when we were supposed to have it, we wouldn't have had to do the Annual Review Report in February, when we were most busy. The outcome was not enough time to analyze and review in as much depth as we would have liked.</p> <p>Regarding the Perkins Core indicators, 5P1 and 5P2, these were "not met" 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.</p> <p>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 completely up to industry standards as is the consensus with the Advisory Council.</p>
<p>Discuss other strengths and challenges of the program that are relevant to understanding the program's data.</p>	<p>One of the challenges of the program has been enrollment and enrollment of nontraditional students. Enrollment of nontraditional has always been a challenge for our program. In order to address these challenges, the program has gone to Job Fairs and Career Days at various high schools such as Hilo High School, the Armory in Hilo, and here at the Hawaii Community College lower campus. There is discussion of trying to attend more high school career days as the high schools host them, and to approach high schools that do not have Career Days or Job Fairs in order to discuss ways in which the high school students can visit the shop here. We also encourage our nontraditional students to go the job fairs to represent our program in order to promote nontraditional enrollment and female involvement in the trades.</p> <p>Newer equipment, whether electronic like the virtual welder, or the latest software like the plasma cutter, help recruit new students. Graduates want to learn and be proficient at the latest and greatest technology so that they can attain higher paying employment. 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.</p> <p>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.</p>

	<p>One challenge is the outdated ventilations system. It is not safe for the welding booths to be at full capacity use. The ventilation system needs to be monitored constantly, and will need to be fixed or replaced within the next couple of years.</p>
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<p><b>Analyze the program’s IRO data for the year under review.</b></p>	
<p>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.)</p>	
<p>Describe, discuss, and provide context for the data.</p>	<p>N/A</p>
<p>Discuss changes made as a result of the IRO data.</p>	<p>N/A</p>

<p><b>Report and discuss all major/meaningful actions and activities that occurred in the program during the review period. For example:</b></p>	
<p>Changes to the program’s curriculum due to course additions, deletions, modifications (CRC, Fast Track, GE-designations), and re-sequencing</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 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. 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.	Lost a faculty member/Instructor but retained the line number. Hired an Educational Assistant (APT). Hired a part-time lecturer for the machining courses.
Other major/meaningful activities, including responses to previous CERC feedback.	The instructor continues to coordinate times with counselors to schedule scholarship and resume workshops every Spring semester for the graduating students. The MWIM Program attended HCC 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. This event occurred at the lower campus at the Hawaii Community College lower campus. 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.

<b>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.)</b>	
Discuss what the program has been doing well. Are there areas 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. <i>See attached photo of Advisroy Council Member at Job Fair at Hilo High School</i> 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 APT is also female, and is proactive in speaking with prospective female students at job fairs. <i>See attached photo</i> The hiring of an APT for the MWIM and DIMC programs was supportive to students in that the APT was available to

	<p>students to discuss graduation requirements or other registration related topics as well as general educational support. The APT 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 APT 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.</p> <p>Our program continues to have a proportionally high percentage of Native Hawaiian enrolment. We will continue to support the enrolment of Native Hawaiians in our program.</p> <p>Producing very effective graduates, and more graduates in the SP. 2016 than in the previous two years. The number of graduates was almost double the year before with a 52% increase. There were 21 unduplicated degrees/certificates awarded.</p>
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**Describe, analyze, and discuss any challenges and/or obstacles the program has faced.**

<p>Identify and discuss the program's challenges/obstacles.</p>	<p>Enrollment of non-traditional students.</p> <p>Our demand indicator shows the program to be unhealthy. This is a challenge as long as the CIP code only accounts for students that work locally and in larger business. 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>We are hoping to be able to hire a full-time permanent APT. We are always staying abreast of the latest technologies. Newer equipment is always needed as technology changes and improves.</p> <p>The cost of all the programs resources and especially the consumables, welding rods and gas, has gone up in price significantly over the years because of inflation but our budget has not increased. It is always a challenge to budget so that we have enough welding rods for the entire semester. We have to limit the amount of time students spend TIG welding because of the cost of Argon gas, but basically all</p>

	the resources that we buy have increased in price over the past 20 years since the our budget was established.
Discuss changes and actions taken to address those challenges, and any results of those actions.	<p>We continue to promote recruitment of non-traditional students in our program by going to job fairs and talking to non-traditional students.</p> <p>Discussion of CIP code is consistently being justified.</p> <p>We will continue to research new technologies that will support the students’ success.</p> <p>The program is communicating this resource/budget hardship.</p>
Discuss what still needs to be done in order to successfully meet and overcome these challenges.	<p>We will continue to look for opportunities to recruit non-traditional students to our program as well as ways to support them once enrolled in the program. This is an ongoing challenge that will most likely need to be addressed throughout the life of the program.</p> <p>If the CIP code were changed, we may not be deemed “unhealthy” for the demand indicator.</p> <p>The hiring of an APT would alleviate a lot of paperwork and duties that the instructor would not have to do, making it possible for more instructional time.</p> <p>The budget for the program needs to be looked at and revised according to the amount of inflation over the past 20-25 years.</p>

**PROGRAM ACTION PLAN**

<b>Discuss the program’s prior year's (AY14-15) action plan and results.</b>	
Describe the program’s action plan from the prior review period and discuss how it was implemented in AY15-16.	The action plan from the AY 2014-15 annual report was to adjust starting hours to an earlier time, implement a math and reading comprehension requirement, and implement an intern program where students get on-the-job training.
Discuss the results of the action plan and the program’s success in achieving its goals.	The action plans from the AY 2014-15 year were not implemented because the instructor who had decided that they were a priority is no longer working at the college and there is not enough data to support that these changes would benefit the students. Research needs to be done for the time

	changes and earlier start times discussed in the previous year's action plan. The current instructor feels that the current math and English requirements are adequate and that there is ample classroom time for the math problems that are done for the projects in the lab. Research also needs to be done if the MWIM program were to implement an intern program on the benefits for students. At the moment, these action plans are on hold while the program looks for a new instructor.
Discuss any challenges the program had in implementing that action plan or achieving its goals.	The actions plans are on hold while the program looks for a new machining instructor.

- Did the program review its website during AY15-16? Please check the box below that applies.

- Reviewed website, no changes needed.
- Reviewed website and submitted change request to webmaster on \_\_\_\_\_ (date)\_\_\_\_\_.
- Reviewed website and will submit change request to webmaster.

*Please note that requests for revisions to program websites must be submitted directly to the College's webmaster at <http://hawaii.hawaii.edu/web-developer>*

<b>Discuss the program's overall action plan for AY16-17, based on analysis of the Program's data and the overall results of course assessments of student learning outcomes conducted during the AY15-16 review period.</b>	<b>Benchmarks and Timelines for implementation and achievement of goals.</b>
<b>Action Goal 1:</b> To edit and re-write the rubrics for the performance assessments so that they are streamlined and easy to understand and the expectations and outcomes are clear and consistent.	<b>Benchmarks/Timelines:</b> Edited rubrics/ Spring 2018

<p>How can this action Goal lead to improvements in student learning and attainment of the program's learning outcomes (PLOs)?</p> <p>If the rubrics are clear, and the expectations are clear, there is no confusion when discussing with the Advisory Council what the needs are for industry and if our students meet those needs. Clear and consistent rubrics will enable the instructor to see flaws in assessments more easily and will enable the instructor to change curriculum more easily. If the curriculum is changed or added to, changes to the rubrics should reflect those changes and be easily made because a standard will be established.</p>	
<p><b>Action Goal 2:</b> The CLOs for the MWIM 65 Advanced Welding course will be re-written</p>	<p><b>Benchmarks/Timelines:</b> Revision of MWIM 65 CLOs /Spring 2017</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 current CLOs for MWIM 65 are repetitive. In re-writing the CLOs, student learning will not change, but it will be clearer of what the expectations are of the course. In that the expectations are clearer, it might save time in the beginning of the course when going over the syllabus. It will definitely make the assessments more clear, the rubrics more clear, and therefore, the students will more clearly see how they are scored on their performance assessments.</p>	
<p><b>Action Goal 3:</b> The program is in the process of purchasing new CNC Milling Machines. It is the goal of the program to have them delivered and assembled and to have revised curriculum that reflects the updated software.</p>	<p><b>Benchmarks/Timelines:</b> (2) new CNC Milling Machines incorporated into curriculum /Spring 2018.</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 having the latest software, and mechanical parts, these machines allow students to learn on equipment that is state of the art and used in the industry. Skills attained using these machines will give our students a better chance at finding employment in precision machine shops.</p>	

**RESOURCE IMPLICATIONS**

**NOTE: General budget asks are included in the 3-year Comprehensive Review.**  
**Budget asks for the following categories only may be included in the Annual review: health and safety needs, emergency needs, and/or necessary needs to become compliant with Federal/State laws/regulations.**

**Please provide a brief statement about any implications of or challenges with the program’s current operating resources.**  
 We are doing great?  
 Or what so we have to buy out of our own money?  
 What are the limited resources? The operating budget has not increased since the original formula was developed and implanted in the late 90s. All of our resource costs have increased with inflation over the years but we still have to manage with the same budget.

For budget asks in the allowed categories (see above):	
Describe the needed item(s) in detail.	All the program’s resources and consumables.
Include estimated cost(s) and timeline(s) for procurement.	All of the program’s resource costs have increased with inflation, some of the consumables are at least double in price.
Explain how the item(s) aligns with one or more of the strategic initiatives of <u>2015-2021 Strategic Directions</u> .	

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

**LEARNING OUTCOMES ASSESSMENT**

For all parts of this section, please provide information based on CLO (course learning outcomes) assessments conducted in AY 2015-16, and information on the aligned (PLOs) program learning outcomes assessed through those course assessments.

If applicable, please also include information about any PLO assessment projects voluntarily conducted by the program’s faculty/staff.

**Evidence of Industry Validation and Participation in Assessment (for CTE programs only)**

Provide documentation that the Program has submitted evidence and achieved certification or accreditation from an organization granting certification in an industry or profession. If the

program/degree/certificate does not have a certifying body, you may submit evidence of the program’s advisory committee’s/board’s recommendations for, approval of, and/or participation in assessment(s). **Please attach copy of industry validation for the year under review and submit with the document--attach our advisory council minutes**

**Courses Assessed**

- List all program courses assessed during AY 2015-16, including those courses for which a follow-up “Closing the Loop” assessment was implemented during the review year.

Assessed Course Alpha, No., & Title	Semester assessed	CLOs assessed (CLO# & text)	CLO-to-PLO alignment (aligned PLO# & text)
MWIM 52 Sheet Metal and Machining	Spring 2016	Assessed CLOs # 1,2,3,4,5 1. Explain the purposes of the OSHA act as applied to a machine shop environment.  2. Demonstrate measure and layout using standard instruments.  3. Calculate common geometric patterns, forms, edges and seams.  4. Set up a lathe use for boring, drilling and cutting.  5. Perform in high level of craftsmanship in machine and welding.	CLO #1 aligned to PLO #2  CLO #2 aligned to PLO #3  CLO #3 aligned to PLO #6  CLO #4 aligned to PLO #6  CLO #5 aligned to PLO #4
MWIM 55 Sheet Metal and Machining	Spring 2016	Assessed CLOs # 1,2,3,4,5 & 6 1. Explain the purposes of the OSHA and MSHA acts as applied to the welding field.  2. Describe proper welding techniques in various welding positions.	CLO #1 aligned to PLO #2  CLO #2 aligned to PLO #4,5

		<p>3. Select proper materials and procedures to build projects.</p> <p>4. Explain inspecting and testing welds.</p> <p>5. Apply welder qualifications and procedures.</p> <p>6. Apply industrial standards and work ethics in the welding field.</p>	<p>CLO #3 aligned to PLO #4,5</p> <p>CLO #4 aligned to PLO #6</p> <p>CLO #5 aligned to PLO #6</p> <p>CLO #6 aligned to PLO #6</p>
MWIM 72 Introduction to CNC Milling	Spring 2016	<p>Assessed CLOs # 1,2,3 &amp; 4</p> <p>1. Demonstrate through both written formats and shop performance the proper calculations and tolerances to industry standards and project specifications for machining various materials.</p> <p>2. Identify in written form the vertical milling machine parts, distinguish each component's functions, and be able to describe the appropriate use of each.</p> <p>3. Demonstrate an apprenticeship-level understanding of industry standards for the proper selection of feeds and speeds for various types of materials and cutters.</p> <p>4. Fabricate to specifications machined components from billets of various materials.</p> <p>5. Demonstrate an apprenticeship-level</p>	<p>CLO #1 aligned to PLO #1,3</p> <p>CLO #2 aligned to PLO #3</p> <p>CLO #3 aligned to PLO #4</p> <p>CLO #4 aligned to PLO #4,5</p> <p>CLO #5 aligned to PLO #6</p>

		understanding of international standards of programming for Computer Numerical Controls (CNC).	
MWIM 75 Special Process Welding and Rigging	Spring 2016	Assessed CLOs # 1,2,3 & 4 1. Select and use the proper safety clothing and equipment.  2. Demonstrate advanced use and operation of shielded metal arc welding equipment according to industry standards.  3. Demonstrate TIG Welding on stainless steel and aluminum according to industry standards.  4. Apply proper Rigging and Operations according to industry standards.	CLO #1 aligned to PLO #2,6  CLO #2 aligned to PLO #1,2  CLO #3 aligned to PLO #1,3,6  CLO #4 aligned to PLO #3,6
<b>“Closing the Loop” Assessments Alpha, No., &amp; Title</b>	<b>Semester assessed</b>	<b>CLOs assessed (CLO# &amp; text)</b>	<b>CLO-to-PLO alignment (aligned PLO# &amp; text)</b>
MWIM 42 Introduction to Machining and Welding	Fall 2015	Assessed CLO #1 1. Explain the purpose of the OSHA act as applied to the welding field.	CLO #1 aligned to PLO #2
MWIM 45 Introduction to Arc Welding	Fall 2015	Assessed CLOs # 1,2,3 1. Explain shop safety rules.  2. Set up welding equipment and workplace.  3. Demonstrate the ability to employ a variety of welding techniques.	CLO #1 aligned to PLO #2 CLO #2 aligned to PLO #1, 2, 3,4, 5, 6 CLO #3 aligned to PLO #1, 2, 3

MWIM 62 Lathe Facing and Knurling	Fall 2015	Assessed CLOs #2,3 & 4 2. Demonstrate proper safe work habits and the ability to insure a safe workplace. 3. Demonstrate safe setup, maintain, and operate the engine lathe. 4. Apply proper work holding device: align, setup, and select the proper cutting speed and feeds.	CLO #2 aligned to PLO #2 CLO #3 aligned to PLO #2 CLO #4 aligned to PLO #5
MWIM 65 Advanced Welding	Fall 2015	Assessed CLOs # 1,2,3 & 4 1. Identify and properly use personal safety equipment. 2. Understand the need for safety equipment in the shop and field. 3. Show proper use and care of sheet metal hand tools. 4. Identify the proper use, care, and safety concerns of shop equipment.	CLO #1 aligned to PLO #2 CLO #2 aligned to PLO #2,6 CLO #3 aligned to PLO #2,4,5 CLO #4 aligned to PLO #2,6

### Assessment Strategies

**For each course assessed in AY 2015-16 listed above, provide a brief description of the assessment strategy, including:**

a description of the type of <u>student work or activity assessed</u> (e.g., research paper, lab report, hula performance, etc.);	<p><b><u>MWIM 42</u></b> -Final written exam on the OSHA act. CLO#1</p> <p><b><u>MWIM 45</u></b> -Performance test on ability to be able to wear proper safety attire, CLO #1 and apply proper safety procedures during task, CLO #2, And set-up welding equipment and demonstrate a variety of welding techniques.CLO#3</p> <p><b><u>MWIM 62</u></b></p>
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- Final written exam on the fundamental use of hand tools. CLO#1
- Performance test on the fundamental use of hand tools. CLO#1

**MWIM 65**

- Performance test on ability to identify and properly use personal safety equipment, understand the need for safety equipment in the shop and field, show proper use and care of sheet metal hand tools, identify the proper use, care, and safety concerns of shop equipment. CLOs 1,2,3&4

**MWIM 52**

- Final written exam on ability to be able to identify lathe components and calculations. CLO#2
- Performance test on ability to be able to produce a metal artifact. CLO#3
- Soft skills assessment for employability, safety and communication skills the goal was that 75% of the students would meet expectations. CLO#5

**MWIM 55**

- Final written exam intermediate welding including OSHA, MSHA, positions and proper metals and techniques and positions. CLOs#1,2,3
- Performance test on ability to produce a short bead and inspect it. CLOs #4,5
- Soft skills assessment for employability, safety and communication skills.CLO#6

**MWIM 72**

- Final written exam on shop knowledge, calculating proper speeds and feeds and proper tool selection and proper tools and cutters on the CNC milling machine. CLOs #1,3
- Final written exam covers vertical milling machined parts and components and their functions and an entry-level understanding of CNC standards. CLO #2
- Performance test on ability to be able to produce a metal artifact. CLO #4

**MWIM 75**

- Performance test on ability to be able demonstrate proper ARC Welding techniques. CLOs#1,2,4
- Performance test on ability to TIG weld a short bead. CLOs #1,3

	<p>-Performance test on ability to find the center of gravity of an I-beam using proper rigging. CLOs #1,4</p>
<p>a description of <u>who</u> conducted the assessment (e.g., the faculty member who taught the course, or a group of program faculty, or the program’s advisory council members, etc.);</p>	<p><b><u>MWIM 42,45,62,65,52,55,72,75</u></b></p> <p>-The instructor will grade the final written exam at the end of the semester.</p> <p>-The instructor will use a rubric to assess the performance test(s) and lab task sheets.</p> <p>-The instructor will use a rubric to assess the soft-skills of the students at the end of the semester.</p>
<p>a description of <u>how</u> student artefacts were selected for assessment (did the assessment include summative student work from all students in the course or section, <u>OR</u> were student works selected based on a representative sample of students in each section of the course?);</p>	<p><b><u>MWIM 42,45,62,65,52,55,72,75</u></b></p> <p>-The final written exams include questions that cover the material covered throughout the semester. These exams are selected because they have material that the students will have to know when they begin working in the industry. The final exam is given to every student on the last day of instruction.</p> <p>-The performance test will require students to demonstrate the knowledge that they have gained throughout the entire semester. These performance tests were chosen because they reflect the type of writing that they will do in the field.</p> <p>-The soft skills assessments were chosen because of the importance of these skills. If the student are lacking in any one of these skills when they graduate, they will be unemployable. Every student is assessed on their soft skills at the end of the semester.</p>
<p>a brief discussion of the <u>assessment rubric/scoring guide</u> that identifies criteria/categories and standards.</p>	<p><b><u>MWIM 42,45,62,65,52,55,72,75</u></b></p> <p>-The final written exam is scored with one point correct from each question. The highest score possible is 100%, lowest being zero %. Students must receive a 70% or higher, in order to pass with a C letter grade.</p> <p>-The performance test is scored with a rubric. There are four skills to be scored. The scoring is 4 points for “skilled” and 2 points for “limited skill.” The total amount possible is 16 points. The student must score 12 points to pass this assessment. If the student scores 12</p>

	<p>points, or an average of “meets expectations,” this is acceptable for industry standards.</p> <p>-The soft-skills assessment is scored with a rubric. There are five skills that are being scored. The students either fall under, “Meets Expectations” or “Does Not Meet Expectations.” The minimum entry level requirement for employment is “Meets Expectations” in every skill. If any student does not meet expectations in any of the five skills, they are considered to not meet expectations for entry level employment. A graduate of the program needs to be able to be prepared, communicate, have a good attitude, pay attention to task, do quality of work and understand the importance of safety in order to be employable.</p>
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**Expected Levels of Achievement**

- For each course assessed in AY 2015-16, indicate the benchmark goal for student success for each CLO assessed.
  - example 1: “85% of students will Meet Standard or Exceed Standard for CLO#1”;
  - example 2: “80% of students will attain Competency or Mastery of CLO#4.”

<b>Assessed Course Alpha, No., &amp; Title</b>	<b>Benchmark Goal for Student Success for Each CLO Assessed</b>
MWIM 42	<p><b><u>MWIM 42</u></b>            -Final written exam on the OSHA act, goal was an average score of 70%. CLO#1</p>
MWIM 45	<p><b><u>MWIM 45</u></b>            -Performance test on ability to be able to wear proper safety attire, CLO #1 and apply proper safety procedures during task, CLO #2, And set-up welding equipment and demonstrate a variety of welding techniques.CLO#3, Goal was 70% of students developing proficiency.</p>
MWIM 62	<p><b><u>MWIM 62</u></b>            -Final written exam on the fundamental use of hand tools the goal was that the average of students’ scores would be 70% or higher. CLO#1            -Performance test on the fundamental use of hand tools, there was no goal for this assessment done in 2013. CLO#1</p>

<p>MWIM 65</p>	<p><b><u>MWIM 65</u></b>          -Performance test on ability to identify and properly use personal safety equipment, understand the need for safety equipment in the shop and field, show proper use and care of sheet metal hand tools, identify the proper use, care, and safety concerns of shop equipment. Goal was 70% meets developing proficiency, which meets industry standards. CLOs 1,2,3&amp;4</p>
<p>MWIM 52</p>	<p><b><u>MWIM 52</u></b>          - Final written exam on ability to be able to identify lathe components and calculations, the goal was that the average of students' scores would be 75% or higher. CLO#2            -Performance test on ability to be able to produce a metal artifact, the goal was that 75% of the students would meet expectations. CLO#3            -Soft skills assessment for employability, safety and communication skills, the goal was that 75% of students would meet expectations.</p>
<p>MWIM 55</p>	<p><b><u>MWIM 55</u></b>          - Final written exam intermediate welding including OSHA, MSHA, positions and proper metals and techniques and positions. The goal was that 75% of students would get 75% or higher score. CLOs#1,2,3            -Performance test on ability to produce a short bead and inspect it; the goal was that 75% of students would meet expectations. CLOs #4,5            -Soft skills assessment for employability, safety and communication skills, the goal was that 75% of the students would meet expectations. CLO#6</p>
<p>MWIM 72</p>	<p><b><u>MWIM 72</u></b>          - Final written exam on shop knowledge, calculating proper speeds and feeds and proper tool selection and proper tools and cutters on the CNC milling machine. The goal for this assessment was that students average combined scores would be 75% or higher. CLOs #1,3          - Final written exam covers vertical milling machined parts and components and their functions and an entry-level understanding of</p>

	<p>CNC milling machine standards. The goal for this assessment was that students average combined scores would be 75% or higher. CLOs #1,4</p> <p>-Performance test on ability to be able to produce a metal artifact using CNC milling machine, the goal is that students will average 75% meets proficiency or higher. CLO #4</p>
MWIM 75	<p><b><u>MWIM 75</u></b></p> <p>-Performance test on ability to be able demonstrate proper ARC Welding techniques. The goal for this assessment was for the average combined score of the students to be 75% or higher. CLOs#1,2,4</p> <p>-Performance test on ability to TIG weld a short bead, the goal was that 75% of the students would meet proficiency. CLOs #1,3</p> <p>-Performance test on ability to find the center of gravity of an I-beam using proper rigging, the goal was that the average combined scores of students would be 80% or higher. CLOs #1,4</p>

**Results of Course Assessments**

<b>For each course assessed in AY 2015-16:</b>	
<p>provide a <u>description of the summative assessment results</u> in terms of students' attainment of the CLOs and aligned PLOs.</p>	<p><b><u>MWIM 42</u></b></p> <p>-Final written exam on the OSHA act, results were an average score of 75%. CLO#1</p> <p><b><u>MWIM 45</u></b></p> <p>-Performance test on ability to be able to wear proper safety attire, CLO #1 and apply proper safety procedures during task, CLO #2, and set-up welding equipment and demonstrate a variety of welding techniques,CLO#3. Results were 100% of students developing proficiency.</p> <p><b><u>MWIM 52</u></b></p> <p>- Final written exam on ability to be able to identify lathe components and calculations, results were that 100% of students met minimum score for industry standards. CLO#2</p> <p>-Performance test on ability to be able to produce a metal artifact, results were 100% of students met or exceeded industry standards. CLO#3</p>

-Soft skills assessment for employability, safety and communication skills, results were that 4 out of 9 students met expectation, or 44%. CLO#5

**MWIM 55**

- Final written exam intermediate welding including OSHA, MSHA, positions and proper metals and techniques and positions. The results were that the 80% of students met expectations. CLOs#1,2,3

-Performance test on ability to produce a short bead and inspect it, 89% of students met expectations. CLOs #4,5

-Soft skills assessment for employability, safety and communication skills, the results were that 80% of the students met expectations. CLO#6

**MWIM 62**

-Final written exam on the fundamental use of hand tools the goal was that the average of students' scores would be 70% or higher. CLO#1

-Performance test on the fundamental use of hand tools, there was no goal for this assessment done in 2013. CLO#1

**MWIM 65**

-Performance test on ability to identify and properly use personal safety equipment, understand the need for safety equipment in the shop and field, show proper use and care of sheet metal hand tools, identify the proper use, care, and safety concerns of shop equipment. Results were 100% of students met developing proficiency, which meets industry standards. CLOs 1,2,3&4

**MWIM 72**

- Final written exam on shop knowledge, calculating proper speeds and feeds and proper tool selection and proper tools and cutters on the CNC milling machine. The results for this assessment were that students average combined scores were 83%. CLOs #1,3

- Final written exam covers vertical milling machined parts and components and their functions and an entry-level understanding of CNC milling machine standards. The results

	<p>for this assessment were that students average combined scores were 90%. CLOs #1,4</p> <p>-Performance test on ability to be able to produce a metal artifact, results were that 100% of students met proficiency. CLO #4</p> <p><b><u>MWIM 75</u></b></p> <p>-Performance test on ability to be able demonstrate proper ARC Welding techniques. The results for this assessment were that the average combined score of the students was 89%. CLOs#1,2,4</p> <p>-Performance test on ability to TIG weld a short bead, the results were that 89% of the students met proficiency. CLOs #1,3</p> <p>-Performance test on ability to find the center of gravity of an I-beam using proper rigging, the results were that the average combined scores of students were 92%. CLOs #1,4</p>
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**Other Comments**

<b>Include any additional information that will help clarify the program's course assessment results.</b>	
Include comparisons to any applicable College or related UH-System program standards, or to any national standards from industry, professional organizations, or accrediting associations.	N/A
Include, if relevant, a summary of student survey results, CCSSE, e-CAFE, graduate-leaver surveys, special studies, or other assessment instruments used that are not discussed elsewhere in this report.	N/A

### Next Steps – Assessment Action Plan

<b>Describe the program's intended next steps to improve student learning, based on the program's overall AY 2015-16 assessment results.</b> Include any specific strategies, tactics, activities, or plans for instructional change, revisions to assessment practices, and/or increased student support.	
Instructional changes may include, for example, revisions to curriculum, teaching methods, course syllabi, course outlines of record (CORs), and other curricular elements.	<ul style="list-style-type: none"> <li>-Realignment of the CLOs to the PLOs</li> <li>-Re-alignment to the new ILOs</li> <li>-Syllabi re-vision with the new hire of an instructor for the machining side.</li> </ul>
Proposals for program modifications may include, for example, re-sequencing courses across semesters, or re-distribution of teaching resources, etc.	N/A

<p>Revisions to assessment strategies or practices may include, for example, revisions to learning outcome statements (CLOs and/or PLOs), department or course assessment rubrics (criteria and/or standards), development of multi-section/course summative assignments or exams, etc.</p>	<p>MWIM is in the process of re-writing some of their CLOs, and editing all the rubrics used for assessments.</p>
<p>Student support and outreach initiatives may include, for example, wrap-around student services, targeted tutoring and/or mentoring, etc.</p>	<p>N/A</p>

**Part VI. Cost Per SSH**

**Please provide the following values used to determine the total fund amount and the cost per SSH for your program:**

General Funds = \$ \_\_\_\_\_  
 Federal Funds = \$ \_\_\_\_\_  
 Other Funds = \$ \_\_\_\_\_  
 Tuition and Fees = \$ \_\_\_\_\_

**Part VII. External Data**

If your program utilizes external licensures, enter:

Number sitting for an exam \_\_\_\_\_  
 Number passed \_\_\_\_\_