

Machine, Welding and Industrial Mechanics
MWIM



July 1, 2020 through June 30, 2021

ANNUAL
REPORT OF PROGRAM DATA
2021



UNIVERSITY of HAWAII®
HAWAII
COMMUNITY COLLEGE

1. Program or Unit 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.

Over the past years, we have been reaching out to K-12 students and building our relationships with high school programs to increase enrollment of students interested in the metalworking and mechanical/maintenance industries.

2. Analysis of the Program/Unit

Discuss the program's or unit's strengths and areas to improve in terms of Demand, Efficiency, and Effectiveness based on an analysis of the program's ARPD Quantitative Indicators or comparable unit-developed measures or program-developed metrics. Include a discussion of relevant historical-trend data on key measures (i.e., last three years). Provide an explanation of any significant changes to the program's Quantitative Indicators or unit's key performance measures in the year of this Review.

Instructional programs must include a discussion of ARPD health indicators with benchmarks to provide a quick view on the overall condition of the program. CTE programs must include an analysis of Perkins Core indicators for which the program did not meet the performance level in the year of this Review.

Demand Indicator: Needs Attention Insufficient Data County Level

#	Demand Indicators	2018 - 19	2019 - 20	2020 - 21	Demand Health
1.	New & Replacement Positions (State)	102	74	72	Needs Attention Insufficient Data County Level
2.*	New & Replacement Positions (County Prorated)	1	1	1	
3.	Number of Majors	30	30	28	
3a.	Number of Majors Native Hawaiian	15	16	20	
3b.	Fall Full-Time	77%	87%	86%	
3c.	Fall Part-Time	23%	13%	14%	
3d.	Fall Part-Time who are Full-Time in System	0%	0%	0%	
3e.	Spring Full-Time	72%	89%	78%	
3f.	Spring Part-Time	28%	11%	22%	
3g.	Spring Part-Time who are Full-Time in System	0%	0%	0%	
4.	SSH Program Majors in Program Classes	614	720	592	
5.	SSH Non-Majors in Program Classes	8	44	0	
6.	SSH in All Program Classes	622	764	592	
7.	FTE Enrollment in Program Classes	21	25	20	
8.	Total Number of Classes Taught	9	9	9	

NOTE: New & Replacement jobs updated ([View Methodology](#)).

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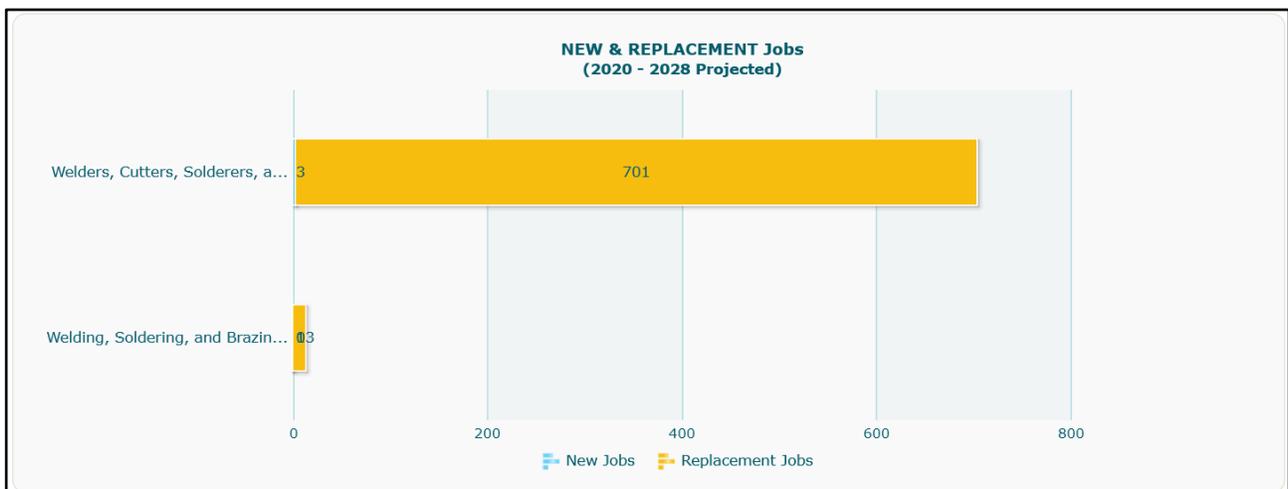
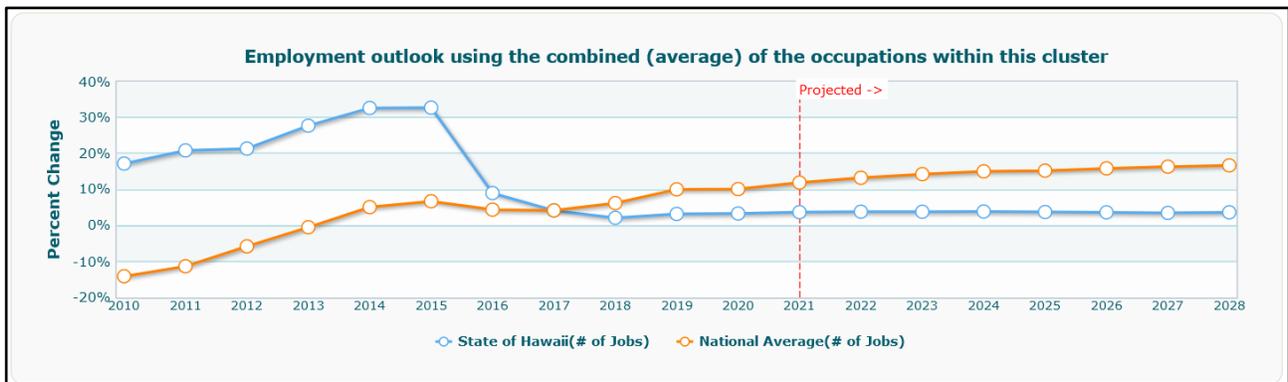
Demand

The outlook for this industry looks great, even though the demand for new and replacement positions are forecasted to decrease over the next eight years. However, there are still 701 jobs that are forecasted to be available to replace. The data from the county has been insufficient and inaccurate. The program notes that the ARPD data table provided in earlier periods shows more accurate data, especially that which was compiled in 2019-2020; this is not the same as reflected in this 2021 data table. Although the numbers reported on our 2021 ARPD table (above) shows only 1 replacement position in the County, the demand is actually greater than this. As you can see below, the SOCs listed are limited to welding occupations. If you added the machinist and industrial mechanic's occupations to the cluster, the demand would increase. Furthermore, many of our students work in construction under other employment disciplines but are using their welding skills from our programs.

2019-2020 URL Data

2019: <https://uhcc.hawaii.edu/varpd/index.php?y=2019&c=HAW&t=CTE&p=1865>

2020: <https://uhcc.hawaii.edu/varpd/index.php?y=2020&c=HAW&t=CTE&p=2101>



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#	Efficiency Indicators	2018 - 19	2019 - 20	2020 - 21	Efficiency Health
9.	Average Class Size	12	15	11	Healthy
10.*	Fill Rate	65.9%	82.3%	60.9%	
11.	FTE BOR Appointed Faculty	2	2	1	
12.*	Majors to FTE BOR Appointed Faculty	15	15	28	
13.	Majors to Analytic FTE Faculty	15	15	14	
13a.	Analytic FTE Faculty	2	2	2	
14.	Overall Program Expenditures	\$152,921	\$162,311	\$154,989	
14a.	General Funded Budget Allocation	\$137,987	\$145,361	\$154,989	
14b.	Special/Federal Budget Allocation	0	0	0	
14c.	Tuition and Fees	\$14,934	\$16,950	0	
15.	Cost per SSH	\$246	\$212	\$262	
16.	Number of Low-Enrolled (<10) Classes	0	0	0	

Efficiency Indicators: Healthy

The efficiency indicators reflect the program as being healthy. Nevertheless, the data should be reflecting a fill rate of 85%, since the student cap was 13 and the average class size was 11. However, the cap in 2019-20 was also 13, and the fill rate should reflect over 100%. The lower student cap was deemed necessary during COVID 19 for social distancing and safety precautions with only one faculty.

Effectiveness Indicator: Progressing

#	Effectiveness Indicators	2018 - 19	2019 - 20	2020 - 21	Effectiveness Health
17.	Successful Completion (Equivalent C or Higher)	100%	98%	97%	Progressing
18.	Withdrawals (Grade = W)	0	0	0	
19.*	Persistence Fall to Spring	81%	87%	82%	
19a.	Persistence Fall to Fall	48%	52%	46%	
20.*	Unduplicated Degrees/Certificates Awarded	18	22	19	
20a.	Degrees Awarded	4	7	3	
20b.	Certificates of Achievement Awarded	9	9	8	
20c.	Advanced Professional Certificates Awarded	0	0	0	
20d.	Other Certificates Awarded	9	12	11	
21.	External Licensing Exams Passed ¹				
22.	Transfers to UH 4-yr	1	1	0	
22a.	Transfers with credential from program	1	1	0	
22b.	Transfers without credential from program	0	0	0	

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Our Persistence Fall to Spring has decreased by 5% to 82%, and our Unduplicated Degrees/Certificates Awarded has decreased by more than 5% from last year. The persistence numbers have gone from cautionary in 2020 to progressing. This is a good sign for our programs. However, there are other certificates awarded in the CA for which students can use these skills in industry, but the design of the rubric (which requires an increase of degrees and CAs awarded year to year) affects us negatively.

Perkins Indicators

#	Perkins Indicators	Goal	Actual	Met
29.	1P1 Postsecondary Placement	33	80.95	Met
30.	2P1 Earned Recognized Credential	33	65.52	Met
31.	3P1 Nontraditional Program Concentration	N/A	N/A	N/A
32.	Placeholder - intentionally blank	N/A	N/A	N/A
33.	Placeholder - intentionally blank	N/A	N/A	N/A
34.	Placeholder - intentionally blank	N/A	0	N/

Program met all Perkins Indicators.

Discuss significant program or unit actions and activities over the year of this Review. Include new certificate(s), stop outs, gain/loss of position(s), organizational changes, changes in unit operations or responsibilities, etc. Include a discussion of external factors affecting the program or unit.

The 2020-21 school year was heavily impacted by the COVID-19, which resulted in the program needing to cut back the F2F contact hours with students. The students were placed into social distancing pods, and the instructor used other technology including integration of projectors, iPads and updated Elmo presentations to ensure that the students could have a better understanding of how the welding process works that is necessary for educational rigor and engagement. The program also purchased welding processors for students to take home and use in the event they were not able to show up to class. Other changes included a cap of 13 students to ensure that the COVID-19 social distancing restrictions could be more feasible to control.

Due to the COVID-19 related budget crisis, the program lost one of our two faculty positions, and due to cutbacks, the APT position that we shared with the Diesel program was also cut. However, in light of the situation, the instructor worked closely with the curriculum developer and Instructional Technology Support Office (ITSO) faculty and staff, and they helped design COVID-19 contingency plans using our current curriculum, which had just been updated the previous year and went into effect officially in Fall 2020.

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The annual operating budget that our program was given was \$500, while the program's consumables usually are budgeted at \$2,000 and normally we need at least six oxygen tanks at \$200 each. However, the increased medical need for oxygen during the pandemic put our needs as an educational institution at the bottom of the list, so supplies were limited to two tanks. So, during this year the program used any surplus that was left over from previous years, as well as soliciting donations from the State Forestry Department, and the UH-Hilo maintenance staff. Unfortunately, the instructor had to pay personal funds out-of-pocket as a donation of materials to the program.

The surplus funds we had from previous years are now non-existent. According to our SSH data, the cost per student is \$262 per year. If the number of students were maxed to pre-COVID levels of 18, then the total cost to efficiently and effectively run for the best rigor, engagement, and employment marketability would be approximately \$4700 per year.

15.	Cost per SSH	\$246	\$212	\$262
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Retrieved from URL ARPD site:

<https://uhcc.hawaii.edu/varpd/index.php?y=2021&c=HAW&t=CTE&p=2326>

Other activities undertaken by the program's sole faculty instructor include:

- Facilitated changes in class times to accommodate the students due to having to split the class into learning pods. Due to the cohort model that we run, the first- and second-year students would normally be in class at the same time. However, in splitting the cohort and courses, first-year classes were offered during the day and the second-year classes were offered in the evening.
- Combined with the class changes, there was a fifth day added on a Saturday through Zoom to cut back on physical contact, and this allowed us to have the whole class together during those sessions.
- Advisory Council meetings with industry were held on Zoom in which changes and trends in the industry were discussed.
- Our regular 2-day/4-hour class schedule was changed to a 1-day/4-hour class due to the oxygen deficiency. To combat the issue of the time needed for the students to apply their skills, the students had the opportunity to make up that time to practice the skills as oxygen supplies became available.
- Due to our minimal budget allocated, the program faculty purchased out of pocket about \$2,500 worth of supplies to ensure that the students had ample supplies to work on welding rods and welding rod holders. This was necessary due to safety issues.

Instructional programs must provide the URL for the program's ARPD data tables and attachment(s) for relevant program-developed metrics discussed in this Review; non-instructional units must provide URLs for unit-specific data and attachment(s) for relevant unit-developed metrics discussed in this Review.

URL ARPD site: <https://uhcc.hawaii.edu/varpd/index.php?y=2021&c=HAW&t=CTE&p=2326>

3. Program Learning Outcomes or Unit/Service Outcomes

a) *List all Program Learning Outcomes (PLOs) or Unit/Service Outcomes (UOs) and their alignment to the College's Institutional Learning Outcomes (ILOs). List of the Program Student Learning Outcomes.*

PLO 1: Demonstrate the attributes of a good employee including good safety practices; good communication skills; positive work ethics; working collaboratively or independently under supervision; being a life-long learner; demonstrating an awareness of hazardous materials; and taking responsibility for the orderliness and cleanliness of the workplace.

- ILO1: Communicate effectively in a variety of situations.
- ILO3: Apply knowledge and skills to make contributions to community that are respectful of the indigenous people and culture of Hawai'i island, as well as other cultures of the world.
- ILO4: Utilize quality comprehensive services and resources in the on-going pursuit of educational and career excellence.
- ILO5: Produce and perpetuate safe, healthy learning and professional environments that are respectful of social and individual diversity.

PLO 2: Demonstrate and be able to apply the proper set-up and use of basic machine tools and equipment; metalworking equipment; common welding and cutting processes; industrial mechanics equipment; material handling equipment and related machinery; and entry-level ability to interpret blueprints.

- ILO2: Utilize critical thinking to solve problems and make informed decisions.
- ILO5: Produce and perpetuate safe, healthy learning and professional environments that are respectful of social and individual diversity.
- ILO6: Contribute to sustainable environmental practices for personal and community well-being.

PLO 3: Demonstrate and be able to apply mechanical reasoning, form perception and spatial relations, and numerical reasoning skills as a part of the basic entry-level skills and knowledge necessary to gain employment in the Machining, Welding, Industrial Mechanics or related fields.

- ILO2: Utilize critical thinking to solve problems and make informed decisions.
- ILO5: Produce and perpetuate safe, healthy learning and professional environments that are respectful of social and individual diversity.

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b) List the PLOs or UOs that have been assessed in the year of this Review. Instructional programs must list the courses that have been assessed in the year of this Review and identify the alignment(s) of Course Learning Outcomes (CLOs) to the PLOs. If no assessment was conducted in the year of this Review, provide an explanation and schedule of upcoming planned assessments.

No assessment has been done this year for the following reasons:

- The APT position was swept during the COVID-19 and was never reallocated to fill. This position would assist with technology and organizing our assessments for the program. Also, the position was shared amongst the other ATE programs when necessary to maintain ACCJC compliance.
- We had completed a full assessment cycle of all of the programs courses when we had the APT staff member to assist with the assessment reporting. Since that position was swept, the sole instructor has not been able to keep up with the assessments of the courses.
- Our program is only one faculty for all the classes and keeping up with the workload is taxing to complete without the swept APT position.
- Our program is done in cohorts and instruction is all day. Being a program of one faculty and one lecturer to help students after class to work on machines and tools in the shop required supervision and instructional support. During this time, the swept APT position was necessary for our program operations and ACCJC accountability.

Upcoming Assessment Schedule:

The instructor is working with the Institutional Assessment Coordinator to develop a reasonable schedule to try to get the program back on track with assessment. However, without staff support, conducting and reporting assessments will continue to be difficult for the program. Nevertheless, we will be completing the implementation of the program's updated courses, course numbering and revised PLOs in Fall 2022, and our overall plan is to run the updated courses once and then assess on the second go around beginning in Fall 2023.

c) Assessment Results: provide a detailed discussion of assessment results at the program (PLO) and course (CLO), or unit (UO), levels in the year of this Review. Provide an analysis of how these results reflect the strengths and challenges of the program or unit in meetings its Outcomes.

No assessment has been done in this Review period.

d) Changes that have been made as a result of the assessment results: instructional programs must provide a discussion of changes made as a result of the analysis of assessment results, e.g., to curriculum, instruction, development of student learning opportunities, faculty professional development activities, assessment strategies, etc.; non-instructional units must provide a discussion of changes made as a result of the analysis of assessment results, e.g., to services, operations, personnel training, assessment strategies, etc.

No assessment has been done in this Review period.

4. Action Plan

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

Be sure to focus on areas to improve as identified in ARPD data or unit-developed measures, the results of assessments of student learning or unit/service outcomes, and results of survey and other data used to assess your program or unit.

This action plan must include an analysis of progress in achieving previous planned improvements including the results of the prior Comprehensive Review's action plan(s). Discuss how the goals identified in that prior action plan were met and the impact on the program or unit; or, if not met, discuss why and the impact on the program or unit, and whether those goals are being carried over to the current action plan.

This action plan should include specific recommendations for improvement(s) or planned program or unit action(s) that will guide your program/unit through to the next program/unit Review cycle.

** CTE programs must include specific action plans for any Perkins Core Indicator for which the program did not meet the performance level.*

Specify how the action plan aligns with the College's Mission and Strategic Plan. Include a discussion of how implementing this action plan will contribute to the College achieving the goals of the Strategic Plan. <https://hawaii.hawaii.edu/sites/default/files/assets/docs/strategic-plan/hawcc-strategic-directions-2015-2021.pdf>

Be sure to list resources that will be required, if any, in section 5 below.

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

MWIM ACTION PLAN

With the uncertainties COVID-19 and the continuing pandemic bring, it is hard to create a solid action plan. At this point, our main strategy is to be proactive and prepare for the worst and to be ready to adjust and adapt quickly as needed. This action plan is vague, but we are acknowledging that COVID-19 is serious and could throw us a massive curveball to any plan we set.

We absolutely need to fill our two empty positions, one faculty and one APT, to help move our plans forward, but with the hiring freeze in place, it will be tough. We will be working on advocating for these positions together with the Diesel Program faculty member, as we share the APT position and our programs' work in related industries. We both have the same goals and since losing our shared APT position, we both can use each other's assistance. Working together will allow both of us to be as efficient as possible with what we have.

Below, we outline the ways our current action plans align with the College's Strategic Plan.

HGI Action Strategy 1: Strengthen the pipeline from K–12 to the university to improve college readiness and increase college attendance.

HGI Action Strategy 2: Implement structural improvements that promote persistence to attain a degree and timely completion.

- Offer one class during the summer with EDvance for career exploration of our program.
- Offer high school student internships to at least five students to prepare them for college and industry readiness.
- The cohorts that we run in the program allows graduation rates to look better biannually. We will look at pathways that are available to help students attain dual credit courses.

HGI Action Strategy 3: Anticipate and align curricula with community and workforce needs.

HI2 Action Strategy 3: Continue to support programs that suit Hawai'i Island's location and environment as well as address critical gaps.

- Work closely with employers to increase the qualified and skilled workforce base with advisory board meetings.
- The advisory council in 2021 recommended that CAD be included into the MWIM program, and Computer Numerical Control (CNC).
- Communicate with the AEC faculty instructor who uses CAD and seek curriculum interest with her program and allow use of our fiber laser machine and Computer Numerical Control (CNC), which is a current need in the industry.

HPMS (High Performance Mission-Driven System) Action Strategy 1: Employ best practices in management, administration, and operations.

- Advocate with administration to get back our two vacant positions, one faculty and APT to be shared with the Diesel program. Without these human resources, our program will continue to struggle to complete administrative reports and requirements while focusing on helping students.

The program met the Perkins Indicators.

5. Resource Implications -

*** ONE-TIME BUDGET REQUESTS ONLY ***

Detail any ONE-TIME resource requests that are not included in your regular program or unit operating "B" budget, including reallocation of existing resources (physical, human, financial).

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

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

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

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

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

[Hawaii CC - Program & Unit Review Submission portal](https://hawaii.kualibuild.com/app/builder/#/app/60ef56c477b0f4709999bb6e5/run)
<https://hawaii.kualibuild.com/app/builder/#/app/60ef56c477b0f4709999bb6e5/run>

- ✓ Item Description
- ✓ Justification
- ✓ Priority Criteria (must meet at least one of the following):
 1. Ensure compliance with mandates and requirements such as laws and regulations, executive orders, board mandates, agreements and contracts and accreditation requirements.
 2. Address and/or mitigate issues of liability, including ensuring the health, safety and security of our Kauhale.
 3. Expand our commitment to serving all segments of our Hawaii Island community through Pāalamanui and satellite centers
 4. Address aging infrastructure.
 5. Continue efforts to promote integrated student support in closing educational gaps.
 6. Leverage resources, investments with returns, or scaling opportunities
 7. Promote professional development.

Category-Specific Information				
Equipment	Estimated Date Needed	Quantity / Number of Units; Cost per Unit	Total Cost (with S&H, tax)	On Inventory List (Y/N); Decal #, Reason replacing
Facilities Modification	Estimated Date Needed	Total Cost	Monthly/Y early Recurring Costs	Utilities Required
Personnel Resource We need to fill this position due to only having 1 faculty running the full program.	Estimated Date Needed July 1, 2022	FTE; Position Type; Position Title .5 FTE, APT, Educational Specialist DISL/MWIM 1 full time faculty, MWIM	Estimated Salary 20,000 63,000	Was an Existing Position Abolished? (Y/N); Position # Y but unknown, (#0000) Without these human resources, our program will continue to struggle to complete administrative reports and requirements while focusing on helping students

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				<p>Y, but unknown, (#0000) The 2nd faculty position is necessary to take over the machinist lecturer due to maintenance of equipment, which is necessary for the health and safety of the students. The lecturer is not required to maintain the specialized equipment that is only the faculty purview. Also, the current one faculty is a welding specialist and not a machining specialist.</p>
Professional Development	Estimated Date Needed	Have you applied before (Y/N); was it approved?	Professional Development Type	PD Details; Impact; Total Cost
Reallocation Consumables for the MWIM curriculum	Estimated Date Needed July 1, 2022	Total Cost 10,000	Monthly/ Yearly Recurring Costs Yearly	<p>Reallocation Proposal Health and safety compliance on consumable safety and health of students.</p> <p>Consumables have been depleted since the COVID-19 pandemic. This is an integrated program of three different trades which increases the amount of consumables necessary for the curriculum.</p> <p>Approximately \$2,500 was out-of-pocket expenses to ensure students had the tools necessary.</p> <p>According to the ARPD, the cost per student is well within this cost to promote integrated student support in closing educational gaps of industry readiness.</p>

				If we don't have the consumables, then the cap on student enrollment will be necessary and community members cannot take our program courses.
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6. Optional: Edits to Occupation List for Instructional Programs

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

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

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

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

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

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

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