

Program Review Summary Page

For Instructional Programs

Program or Area(s) of Study under Review: Machine Tool Technology

Term/Year of Review: Spring 2022

Summary of Program Review:

A. Major Findings

1. Strengths:

- Machine Tool Technology graduates are employed.
- Most graduates are working in the Machine Tool trade in several capacities.
- The Machine Tool Technology curriculum is up-to-date and is continuously improving to keep abreast of industry standards.
- Enrolment, in spite of the inability to actively recruit candidates, is steady.
- The job market for the Machine Tool sector looks good.
- The Machine Shop on campus is well-tooled to meet the needs of the curriculum, plus, new machine tools are being added as industry trends and needs evolve.
- Enrolled students sometimes come from out-of-district locales to enroll in the program.

2. Areas for Improvement:

- More effort and better marketing and program awareness in schools and the community.
- More effort to recruit candidates, especially those from groups traditionally underrepresented in the Machine Tool trade.
- Replace the Machine Tool Shop Technician position to assist in oversight of program activities.
- Recruit additional instructors to bring about program growth and expansion.

3. Projected Program Growth, Stability, or Viability:

The Machine Tool Technology program, while stable in numbers of students, has room to grow. Should more instructors be brought in, then courses specializing in certain aspects of the Machine Tool trade, e.g., five-axis machining, could be taught. Need to replace the recently vacated Machine Tool Shop Technician position. Building improvements will happen with an upcoming remodel of the Industrial Technology Building. This will negatively affect program growth on a temporary basis.

B. Program's Support of Institutional Mission and Goals

1. Description of Alignment between Program and Institutional Mission:

The Machine Tool Technology program is a key component of the Career Technical Education (CTE) Division at Napa Valley College. The MTT program prepares people for employment in living-wage jobs in the manufacturing industry. Although not an Associate Degree for Transfer program, some students who go on to study Engineering choose to pursue this course of study first.

2. Assessment of Program's Recent Contributions to Institutional Mission:

Recent procurement of two computer numerically controlled (CNC) machine tools will help acclimate students and train them in advanced CNC machining practices, and increase machine availabilities.

Recent procurement of an additional surface grinder will lessen some project completion bottlenecks.

3. Recent Program Activities Promoting the Goals of the Institutional Strategic Plan and Other Institutional Plans/Initiatives:

I have recently started to work with Napa Valley Adult Education in advising them on establishing a Machine Tool class as a feeder for working adults into NVC's Machine Tool Tech program. However, additional instructors are needed to make this process work as an ongoing night class. In fact, *enrolment could easily double* if more instructors and support staff members were found, especially to teach at night.

I continue to work with potential employers to promote pathways to employment for graduates and for those concurrently enrolled in the MTT program.

C. New Objectives/Goals:

- Reinitiate outreach activities by visiting schools and making program presentations.
- Expand the program by hiring faculty to teach, especially at night, to open possibilities for working adults looking to upgrade job skill sets, and to promote dual enrollment of high school students.
- Hire a Machine Tool Shop Technician to replace a recent vacancy.

D. Description of Process Used to Ensure "Inclusive Program Review"

This report, wherever possible, is data driven and factually compiled.

This report covers the following program, degrees, certificates, area(s) of study, and courses (based on the Taxonomy of Programs on file with the Office of Academic Affairs):

Program	Machine Tool Technology
Degree(s)/Certificate(s)	Machine Tool Technology: AS Machine Tool Technology: CoA Machine Tool Technology: One Year: LC
Courses	MACH-100
	MACH-110
	MACH-111
	MACH-210
	MACH-211

Taxonomy of Programs, June 2021

I. PROGRAM DATA

A. Demand

1. Headcount and Enrollment

	2018-2019	2019-2020	2020-2021	Change over 3-Year Period
Headcount				
Within the Program	59	49	41	-30.5%
Across the Institution	8,176	8,181	7,208	-11.8%
Enrollments				
MACH-100	32	19	16	-50.0%
MACH-110	18	17	11	-38.9%
MACH-111	13	--	11	-15.4%
MACH-210	9	13	14	55.6%
MACH-211	6	--	10	66.7%
Within the Program	78	49	62	-20.5%
Across the Institution	32,545	33,102	30,409	-6.6%

Source: SQL Enrollment Files

RPIE Analysis: The number of students enrolled (headcount) in the Machine Tool Technology Program decreased by 30.5% over the past three years, while headcount across the institution decreased by 11.8%. Enrollment within the Machine Tool Technology Program decreased by 20.5%, while enrollment across the institution decreased by 6.6%

Enrollment in the following courses changed by more than 10% (±10%) between 2018-2019 and 2020-2021:

Courses with enrollment increases:

- MACH-211 (66.7%)
- MACH-210 (55.6%)

Courses with enrollment decreases:

- MACH-100 (-50.0%)
- MACH-110 (-38.9%)
- MACH-111 (-15.4%)

**Note: While enrollments among concurrent classes are reported separately (at the course level) in Section I.A.1, concurrent courses are reported as one (joint) observation in Section I.A.2.*

Program Reflection:

I usually have the opportunity to speak about and promote the Machine Tool Technology program at local high schools, continuation schools and at Independent Study. However, that hasn't happened in the last two years.

Also, it should be noted that the MACH 100 class is part of the curriculum for those who are enrolled in Welding Technology and DDGT. No active recruitment is done for that class per se.

2. Average Class Size

	2018-2019		2019-2020		2020-2021		Three-Year	
	Sections	Average Size	Sections	Average Size	Sections	Average Size	Average Section Size	Trend
MACH-100	2	16.0	2	9.5	2	8.0	11.2	-50.0%
MACH-110/210	1	27.0	1	30.0	1	25.0	27.3	-7.4%
MACH-111/211	1	19.0	--	--	1	21.0	20.0	10.5%
Program Average*	4	19.5	3	16.3	4	15.5	17.2	-20.5%
Institutional Average*	1,313	24.8	1,348	24.6	1,171	25.9	25.1	4.4%

Source: SQL Enrollment and Course Sections Files

Average Section Size across the three-year period for courses, and both within academic years and across the three-year period for the program and institutional levels is calculated as:

$$\frac{\text{Total \# Enrollments.}}{\text{Total \# Sections}}$$

It is not the average of the three annual averages.

Concurrent courses are reported as one observation.

- MACH-110 and MACH-210 are reported for MACH-110
- MACH-111 and MACH-211 are reported for MACH-111

RIPE Analysis: Over the past three years, the Machine Tool Technology Program has claimed an average of 17.2 students per section. The average class size in the program has been lower than the average class size of 25.1 students per section across the institution during this period. Average class size in the program decreased by 20.5% between 2018-2019 and 2020-2021. Average class size at the institutional level increased by 4.4% over the same period.

Average class size in the following courses changed by more than 10% ($\pm 10\%$) between 2018-2019 and 2020-2021:

Course with an increase in average class size:

- MACH-111/211 (10.5%)

Course with a decrease in average class size:

- MACH-100 (-50.0%)

Program Reflection:

I question the construct of comparing the institutional average class size with the average class size in the Machine Tool Technology program. Perhaps a more accurate snapshot would be to compare average class size with maximum class capacity. If this were the case, max capacity class size is 15, and average class size is 17-½. It should be noted that a class size larger than 15 becomes difficult to manage, especially when it comes to ensuring shop safety. Couple that with the fact that MACH 110 and MACH 210 are taught concurrently, as are MACH 111 and MACH 211. Enrollment (and thus class size) in MACH 100 is more dependent on enrollment in DDGT and Welding Technology since MACH 100 exists mostly to meet the

curricular requirements of the CoA and AS Degrees of those programs. Moreover, I am a program of one person.

3. Fill Rate and Productivity

Fill Rate*			
	Enrollments*	Capacity	Fill Rate
2018-2019	78	110	70.9%
2019-2020	49	60	81.7%
2020-2021	62	90	68.9%
Three-Year Program Total	189	260	72.7%
Institutional Level	83,156	101,258	82.1%
Productivity*			
	FTES	FTEF	Productivity
2018-2019	28.0	2.7	10.4
2019-2020	31.7	2.3	13.8
2020-2021	25.4	2.7	9.4
Three-Year Program Total	85.1	7.7	11.1

Source: SQL Enrollment and Course Sections Files

RPIE Analysis: Fill rates within the Machine Tool Technology Program tend to be lower than the fill rate at the institutional level. [Compare program-level rate of 72.7% to institution-level rate of 82.1% over the past three years.] Between 2018-2019 and 2019-2020, both enrollment and capacity decreased, resulting in an increase in fill rate (due to a higher rate of decrease in capacity). Between 2019-2020 and 2020-2021, both enrollment and capacity increased, resulting in a decrease in fill rate (due to a higher rate of increase in capacity).

Productivity ranged from 9.4 to 13.8 over the past three years. [Productivity has not been calculated at the institutional level.] The three-year program productivity of 11.1 is lower than the target level of 17.5, which reflects 1 FTEF (full-time equivalent faculty) accounting for 17.5 FTES (full-time equivalent students) across the academic year. (This target reflects 525 weekly student contact hours for one full-time student across the academic year.)

Program Reflection:

Each of the Machine Tool classes has a cap of 15. Simple math shows that if three classes are taught each semester, then the combined cap is 45 students per semester. This number times two = 90 students capacity per academic year. However, the point is not to argue, but to bring about further clarification.

4. Labor Market Demand

Economic Development Department Standard	Numeric Change in Employment	Projected Growth (% Change in Positions; 2018 Base Employment)	Projected Number of Positions

Occupational Classification Description (SOC Code): 49-9041		vs. 2028 Projected Employment)	
Napa County (2018-2028)	+50	+29.4%	220
Bay Area ^A (2018-2028)	+270	+6.6%	4,360
California (2018-2028)	+2,000	+6.8%	31,500

Source: Economic Development Department Labor Market Information, Occupational Data, Occupational Projections (<http://www.labormarketinfo.edd.ca.gov>)
^ABay Area counties include: Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma. Figures also include San Benito County (reported with projections for Santa Clara County).

RPIE Analysis: The figures reported in the table above pertain to Standard Occupational Classifications for the following positions:

- o Industrial machinery mechanics

The Economic Development Department projects an increase of 50 positions for Napa County and an increase of 270 positions for the Bay Area for the Machine Tool Technology Program by 2028 (compared to 2018). This increase in positions translates into a 29.4% increase for the industry within Napa County and a 6.6% increase for the industry within the Bay Area (not including Napa County, 2018-2028). The projected growth for Napa County exceeds the projected growth in California, while the projected growth for the Bay Area is consistent with the projected growth in California (for 2018-2028).

Program Reflection:

Calls and emails from potential employers come to me several times each week. The skilled trades labor market in the Bay Area is hot and is forecast to increase exponentially as a good number of those employed in the skilled trades become eligible to retire. Communication with potential employers is ongoing. I currently have two classroom visits scheduled from industry representatives, and we have one class field trip scheduled this semester.

B. Momentum

1. Retention and Successful Course Completion Rates

Level	Retention Rates (Across Three Years)			Successful Course Completion Rates (Across Three Years)		
	Rate	Course Rate vs. Program Rate		Rate	Course Rate vs. Program Rate	
		Above	Below		Above	Below
MACH-100	97.8%	X		89.1%	X	
MACH-110	91.4%		X	82.9%		X
MACH-111	100%	X		92.3%	X	
MACH-210	90.9%		X	72.7%		X
MACH-211	100%	X		100%	X	

Program Level	95.1%	85.2%
Institutional Level	90.3%	75.6%

Source: SQL Enrollment Files

-- Indicates a value that is within 1% of the program-level rate.

Bold italics denote a statistically significant difference between the course-level rate and the program-level rate.

Bold denotes a statistically significant difference between the program-level rate and the institutional rate.

Note: Grades of EW (Excused Withdrawal) for spring 2020 and beyond are not included in the calculations of the three-year retention and successful course completion rates reported above. This approach reflects the standard recommended research practice of not including EWs in either the numerator or the denominator for these rates.

RPIE Analysis: Over the past three years, the retention rate for the Machine Tool Technology Program was significantly higher than the rate at the institutional level. The retention rates of courses within the program did not differ significantly from the program-level rate. The retention rate for the Machine Tool Technology Program falls in the 78th percentile among program-level retention rates (across 59 instructional programs, over the past three years).

Over the past three years, the successful course completion rate for the Machine Tool Technology Program was significantly higher than the rate at the institutional level. The successful course completion rates of courses within the program did not differ significantly from the program-level rate. The successful course completion rate for the Machine Tool Technology Program falls in the 66th percentile among program-level successful course completion rates (across 59 instructional programs, over the past three years).

Over the past three years, the difference between retention and successful course completion at the program level (9.9%) was lower than the difference at the institutional level (14.7%). (The difference was not statistically significant.) This figure represents the proportion of non-passing grades assigned to students (i.e., grades of D, F, I, NP).

The following Machine Tool Technology Program course claimed a difference (between retention and successful course completion) that exceeded 10%:

- MACH-210 (18.2%)

Program Reflection:

A lot of effort is put into student retention. When possible, tours are arranged with potential employers. I find that this helps to bolster students' expectations of what the work environment will look like along with the tasks to be done.

2. Student Equity

	Retention Rates (Across Three Years)	Successful Course Completion Rates (Across Three Years)
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	Program Level	Institution Level	Program Level	Institution Level
African American/Black*	0.0%	86.8%	0.0%	65.0%
Latinx/Hispanic			82.9%	72.6%
First Generation			87.0%	74.4%

Source: SQL Enrollment Files

Bold italics denote a statistically significant difference between rates at the program and institutional levels, with the lower of the two rates in **bold italics**.

Shaded cells pertaining to retention rates indicate that statistically significant differences for those groups were not found at the institutional level.

Note: Grades of EW (Excused Withdrawal) for spring 2020 and beyond are not included in the calculations of the three-year retention and successful course completion rates reported above. This approach reflects the standard recommended research practice of not including EWs in either the numerator or the denominator for these rates.

*Across the three-year period, there was one student enrolled in the Machine Tool Technology Program who identified as African American/Black.

RPIE Analysis: This analysis of student equity focuses on the three demographic groups with significantly lower retention and/or successful course completion rates found at the institutional level (vs. the corresponding rates among all other demographic groups, combined) over the past three years. Tests of statistical significance were conducted to compare program-level and institution-level rates among the three groups listed above.

Within the Machine Tool Technology Program, the retention rate among African American/Black students was significantly lower than the rate at the institutional level.

Within the Machine Tool Technology Program, the successful course completion rate among African American/Black students was lower than the rate at the institutional level. (The difference was not statistically significant.) The successful course completion rates among Latinx/Hispanic and First Generation students were higher than the corresponding rates at the institutional level. The difference among First Generation students was statistically significant.

These patterns deviate from the findings that emerged from the comparison of retention and successful course completion at the program vs. institutional level, where the program-level rates were significantly higher than the institution-level rates for both retention and successful course completion. (See Section I.B.1 above).

Program Reflection:

To the best of my recollection, I have had one African American student in a one-semester MACH 100 class. This student successfully completed the class. Retention rate = 100%?

3. Retention and Successful Course Completion Rates by Delivery Mode (of Courses Taught through Multiple Delivery Modes, i.e., In-Person, Hybrid, and Online)

This section does not apply to the Machine Tool Technology Program, as courses associated with the program were not offered through multiple delivery modes within the same academic year between 2018-2019 and 2019-2020.

C. Student Achievement

1. Program Completion

	2018-2019	2019-2020	2020-2021
Degrees			
Machine Tool Technology: AS	1	3	5
Institutional: AS Degrees	386	408	408
Average Time to Degree (in Years) +			
Machine Tool Technology: AS	*	*	*
Institutional: AS Degrees	4	4	4
Certificates			
Machine Tool Technology: CoA	2	--	1
Institutional: CoA	349	308	496
Average Time to Certificate (in Years) +			
Machine Tool Technology: CoA	*	*	*
Institutional: CoA	3	4	4

Source: SQL Award Files

**Time to degree/certificate within the program reported among cohorts with at least 10 graduates within the academic year. Asterisk indicates that data have been suppressed.*

+Average time to degree/certificate was calculated among students who completed a degree/certificate within 10 years (between first year of enrollment at NVC and award conferral year). Among 2018-2019 completers, the average time to degree/certificate was calculated among students who enrolled at NVC for the first time in 2009-2010 or later. Among 2019-2020 completers, the average time to degree was calculated among students who enrolled at NVC for the first time in 2010-2011 or later.

RPIE Analysis: The number of AS degrees conferred by the Machine Tool Technology Program increased by 400% between 2018-2019 and 2020-2021. Over the same period, the number of AS degrees conferred by the institution increased by 5.7%. The Machine Tool Technology Program accounted for 0.3% of the AS degrees conferred in 2018-2019 and 1.2% of those conferred in 2020-2021. For all three years, the average time to degree is not reported due to small cohort sizes.

The number of Certificates of Achievement conferred by the Machine Tool Technology Program decreased by 50% between 2018-2019 and 2020-2021. Over the same period, the number of Certificates of Achievement conferred by the institution increased by 42.1%. The Machine Tool Technology Program accounted for 0.6% of the Certificates of Achievement conferred in 2018-2019 and 0.2% of those conferred in 2020-2021. For all three years, the average time to certificate is not reported due to small cohort sizes.

Program Reflection:

Again, a great deal of effort is put into student retention. Tours and guest speakers from the industry help to keep students focused on the end goal of living wage employment.

2. Program-Set Standards: Job Placement and Licensure Exam Pass Rates

Measure	Program-Set Standard* (& Stretch Goal)	Recent Performance			
		Year 1	Year 2	Year 3	Three-Year Total
Job Placement Rate	60% (75%)	63%	83%	100%	79%
Licensure Exam Pass Rate	Licensure exams are not required for this program				
<i>Sources: Perkins IV Core 4 Employment data for Program (TOP Code: 095630) for job placement rates (https://misweb.cccco.edu/perkins/Core_Indicator_Reports/Summ_CoreIndi_TOPCode.aspx);</i> *Program-set standards and stretch goals reported in the table are the standards and goals established in 2019.					

RPIE Analysis: Among Machine Tool Technology Program students, job placement rates have consistently exceeded the program-set standard (of 60%). The job placement rates have met the stretch goal (of 75%) in two of the past three years.

II. CURRICULUM

A. Courses

Subject	Course Number	Date of Last Review (Courses with last review dates of 6 years or more must be scheduled for immediate review)	Has Prerequisite* Yes/No & Data of Last Review	In Need of Revision Indicate Non-Substantive (NS) or Substantive (S) & Academic Year	To Be Archived (as Obsolete, Outdated, or Irrelevant) & Academic Year	No Change
MACH	100	08/14/2020	No			X
MACH	110	1/16/2018	No			X
MACH	111	1/16/2018	Yes 1/16/2018			X
MACH	210	1/16/2018	Yes 1/16/2018			X
MACH	211	8/14/2020	Yes 1/16/2018			X

*As of fall 2018, prerequisites need to be validated (in subsequent process) through Curriculum Committee.

B. Degrees and Certificates[†]

Degree or Certificate & Title	Implementation Date	Has Documentation Yes/No	In Need of Revision+ and/or Missing Documentation & Academic Year	To Be Archived* (as Obsolete, Outdated, or Irrelevant) & Academic Year	No Change
A.S. Machine Tool Technology	N/A	Yes	No		X
CoA Machine Tool Technology	N/A	Yes	No		X
Machine Tool Technology- One Year Local Certificate	N/A	Yes	No		X

*As of fall 2018, discontinuance or archival of degrees or certificates must go through the Program Discontinuance or Archival Task Force.

*Degrees and Certificates cannot be implemented until the required courses in them are approved and active.

Program Reflection:

Eventually I would like to add a stand-alone CNC Operator certificate for those interested in a certification in programming and operation of CNC (Computerized Numerical Control) machine tools. I've had several industry inquiries about such a course. Again, however, finding someone to teach this and finding a Machine Tool Shop Assistant to fill the vacant position is another issue.

III. LEARNING OUTCOMES ASSESSMENT

A. Status of Learning Outcomes Assessment

Learning Outcomes Assessment at the Course Level

Number of Courses	Number of Courses with Outcomes Assessed		Proportion of Courses with Outcomes Assessed	
	Over Last 4 Years	Over Last 6 Years	Over Last 4 Years	Over Last 6 Years
5	5	5	100%	100%

Learning Outcomes Assessment at the Program/Degree/Certificate Level

Degree/Certificate	Number of Outcomes*	Number of Outcomes Assessed		Proportion of Outcomes Assessed	
		Over Last 4 Years	Over Last 6 Years	Over Last 4 Years	Over Last 6 Years
Machine Tool Technology: AS Degree	5	4	5	80%	100%
Machine Tool Technology: Certificate of Achievement	5	4	5	80%	100%

Program Reflection:

Learning Outcomes directly reflect what behaviors (e.g., safety) and skill proficiencies the Machine Tool industry is looking for in an educated workforce. However, there is some slight overlap of outcomes from semester-to-semester as one progresses through the two-year, four-semester program. Blueprint reading, for example, does not need to be called out in successive semesters after first semester; it is a given that the student will have already attained this proficiency.

B. Summary of Learning Outcomes Assessment Findings and Actions

- Revisit Learning Outcomes
- Revise and condense outcomes across the program
- Seek out and add new outcomes as needed

Program Reflection:

Learning Outcomes reflect only a part of the process that helps bring about improvement in the Machine Tool Tech curriculum. Other things, such as alternative processes that bring about the manufacture of machined pieces, are studied. Case in point is that capabilities of manufacturing differ depending on the tooling capabilities of a particular manufacturer. Other improvements are studied and acted on based on Advisory Board recommendations, such as the recent purchase of a five-axis machining center. The Outcomes may remain the same, but the processes in how to attain them are always evolving.

IV. PROGRAM PLAN

Based on the information included in this document, the program is described as being in a state of:

- Viability
- Stability
- Growth

*Please select ONE of the above.

This evaluation of the state of the program is supported by the following parts of this report:

Although enrollment is down, as evidenced by data on Class Size (I. A. 2.), the program is stable. Retention is above the institutional average, as evidenced in the I. B. 1. Momentum section.

(Identify key sections of the report that describe the state of the program. Not an exhaustive list, and not a repeat of the report. Just key points.)

Complete the table below to outline a three-year plan for the program, within the context of the current state of the program.

Program: Machine Tool Technology
Plan Years: 2022-2023 through 2024-2025

Strategic Initiatives Emerging from Program Review	Relevant Section(s) of Report	Implementation Timeline: Activity/Activities & Date(s)	Measure(s) of Progress or Effectiveness
Hire a Machine Tool Shop Tech	Summary	Summer, 2022	Zero student injuries, improved project information communication, decrease in machine tool downtime for repairs.
Resume active student recruitment	I A	Spring, 2023, 2024, 2025	More butts in the seats = more possible graduates with CoAs and A.S. degrees
Update/modify SLOs/PLOs	III B	Fall, 2022	Streamlined COR SLO/PLO evaluations

Describe the current state of program resources relative to the plan outlined above. (Resources include: personnel, technology, equipment, facilities, operating budget, training, and library/learning materials.) Identify any anticipated resource needs (beyond the current levels) necessary to implement the plan outlined above.

Note: Resources to support program plans are allocated through the annual planning and budget process (not the program review process). The information included in this report will be used as a starting point, to inform the development of plans and resource requests submitted by the program over the next three years.

Description of Current Program Resources Relative to Plan:

1. Again, I emphasize that I’m currently working solo in teaching three classes of Machine Tool Technology. The Machine Tool Shop Technician position needs to be filled as soon as possible. The person in this position provides an extra set of eyes and ears when it comes to ensuring shop safety and providing supplemental shop instruction and in assisting with maintenance of machine tools.
2. Building 3100, which houses the Machine Shop and Welding Technology on is slated for a major remodel coming up in late 2022. The remodel requires that the entire Machine Tool and Welding operations be moved temporarily to elsewhere on campus for about a year while the building remodel takes place. The building that will temporarily house the Machine Tool program is about half the size of the shop space in Building 3100. Thus, it will accommodate fewer machine tools which means fewer students. Enrollment will continue to decrease during this time period.

V. PROGRAM HIGHLIGHTS

A. Recent Improvements

Recent acquisition of a Haas Mini-Mill to replace an antiquated and unreliable machine tool. The Mini-Mill has a control system allowing for use of more modern machine coding and operations, thus keeping with industry trends.

Recent acquisition of a Haas UMC-500 three-axis machining center to increase capabilities more in line with industry trends and to decrease project completion bottlenecks.

Recent acquisition of a precision surface grinder to increase project capabilities and decrease project bottlenecks.

Replacement of six (6) computers in the Machine Shop computer lab. The new machines have 64-bit capability to run complex Computer-Aided Manufacturing simulation programs necessary for troubleshooting possible toolpath errors before an actual project is manufactured.

B. Effective Practices

- Detailed, hands-on instruction on manual machine tool practices and techniques, and CNC programming and operational techniques.
- Shop safety, first and foremost as modeled by my safe behaviors.
- Up-to-date and functioning machine tools in good and precise working order.
- My office is a point of contact between employers and graduate job seekers in the field.
- Enforcement of COVID protocols such as mandating mask wearing, social distancing in the classroom and the shop and following sanitation practices has helped bring about zero COVID cases in students since face-to-face instruction resumed in May 2020.

Feedback and Follow-up Form

Completed by Supervising Administrator:

Dr. Douglas C. Marriott

Date:

May 5,
2022

Strengths and successes of the program, as evidenced by analysis of data, outcomes assessment, and curriculum:

Strengths include a robust alignment with industry, lead faculty dedication to the program and the career field, clean and well-organized training space that models industry, new technology, direct connections to NVC Welding and DDGT to cross refer students, connection to HSI Maker Space on campus, job placement and wage gain after training.

Areas of concern, if any:

As cited, dependency on one full time faculty, current lack of an instructional aide needed for both safety and teaching support, planned building renovation that would disrupt and potentially displace program and pipeline of students, lack of CNC instructor for new technology.

Recommendations for improvement:

Support onboarding of instructional aide, explore supporting faculty with substitute faculty list and adjuncts, align more with Workforce Development partners to channel out of work adults into 1-year certificate, work with campus facilities and administration to determine best next steps for building upgrade.

Anticipated Resource Needs:

Resource Type	Description of Need (Initial, Including Justification and Direct Linkage to State of the Program)
Personnel: Faculty	
Personnel: Classified	
Personnel: Admin/Confidential	
Instructional Equipment	
Instructional Technology	
Facilities	
Operating Budget	
Professional Development/ Training	
Library & Learning Materials	

