



Fullerton College

Self-study for Manufacturing Program

2025

Section 1: Introduction

1. Briefly describe your program, make sure to include how your program helps the College achieve its mission.

Fullerton College Mission Statement:

Fullerton College advances student learning and achievement by developing clear pathways for students from our diverse communities who seek educational and career growth, certificates, associate degrees, and transfer. We build a supportive and inclusive environment for students to be successful learners, responsible leaders, and engaged community members.

Fullerton College Manufacturing Program Mission Statement:

The Fullerton Community College Manufacturing Program prepares students to achieve performance excellence in the manufacturing trades. This will be accomplished by teaching strong fundamental skills, making effective use of new/current technologies and providing clear pathways/maps for students to achieve their goals in the manufacturing area.

Evidence of this is as follows:

- *Our student success rates in the private manufacturing industry are above all other private educational institutions and are offered at a fraction of the price of private institutions.*
- *Students in our departments come from all walks of life with ages ranging from 18 -70 years. Hence maps of degrees and certificates have been generated for the most part.*
- *Students and employers have come to our Manufacturing courses and program offerings in Drafting; Machining; Welding; and other Technology courses due to their intense technical nature.*
- *Our instructors in the Manufacturing area all have private industry backgrounds that exceed most college requirements and are aligned with industry standards.*
- *The manufacturing program at Fullerton College provides flexible pathways for students who seek career growth, certificates, associates degrees and transfer through class offerings in high-demand fields such as machining, drafting, welding, metrology, manufacturing engineering, and similar fields. This includes apprenticeship programs.*
- *Day and evening class times are scheduled with both the new students and working adults in mind. The program fosters a supportive and inclusive environment for students through appropriate class sizes, individualized instructor attention, group projects, field trips, and extensive networking opportunities with fellow students and local industry.*
- *Instructors maintain industry connections with in-demand job opportunities, and aid students in job placement and growth experiences. We maintain our relationships with the industry representatives through Advisory Meetings on a yearly basis.*

Section 2: Students

2.1 Student Demographics and Enrollment Trends

1. Using the data provided by the OIE, describe the student population your department serves. Which demographic groups have the most enrollments in your program? Which student groups are underrepresented in your program? Has the demographic profile of your program changed over the last four years?

In the last 4 years we have had no significant changes to our demographic profile (other than increased enrollments). The enrollment per student population in descending order are Latinx (1,214); White (478); Asian (184); Two or more (148); Black (49); Unknown (36); and AI (34).

Based on our current college demographic population all student groups are well represented. See Figure 1 and 2 below:

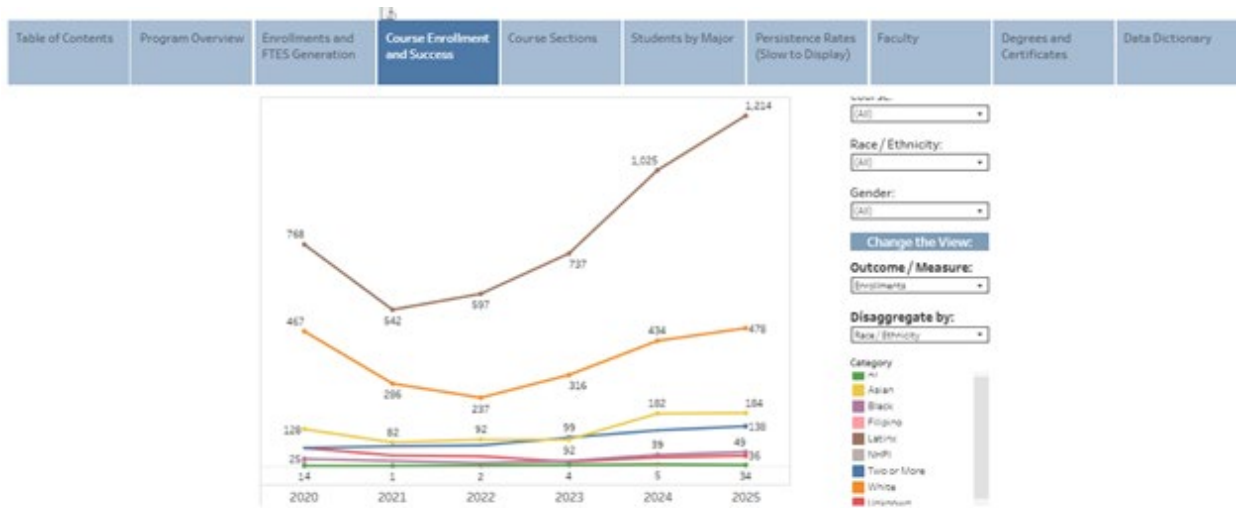


Figure 1

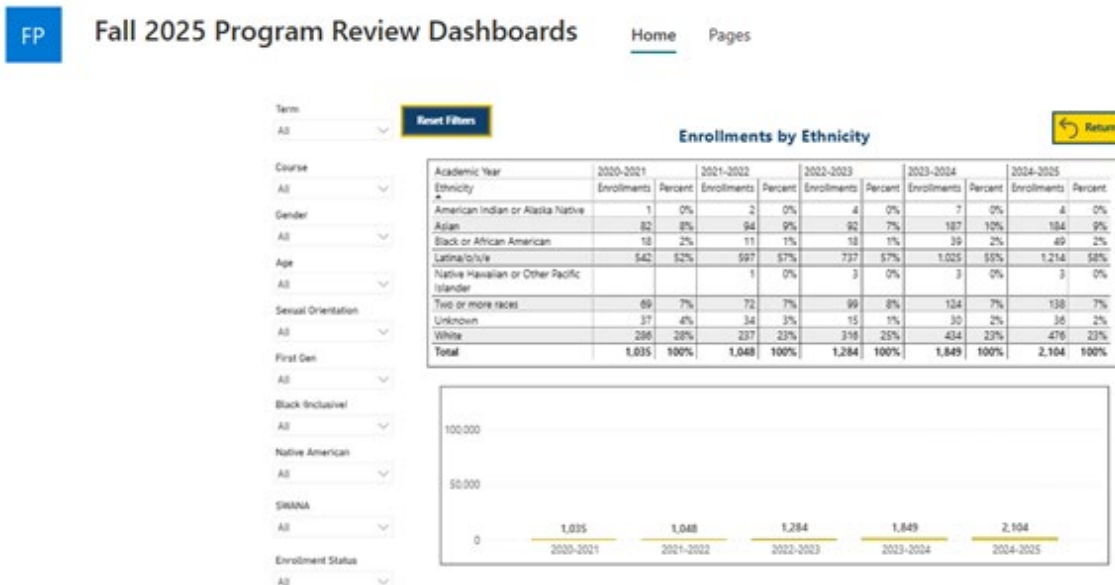


Figure 2

2. Briefly describe course-level enrollment trends in your program over the past five years. Have the enrollment trends in your program changed over the last five years? To what do you attribute any changes or lack of changes?

The enrollment trends in the manufacturing programs (which include Machine; Drafting; Welding; and Technology programs) have seen a steady increase in the last 5 years. We attribute this due to an increase in industry demand for the trades as well as increased recognition of the college programs by local business leaders/partners. A reshoring effort by our government has also helped the businesses relocate back into the local economy. See Figure 3, 4 and 5 below:

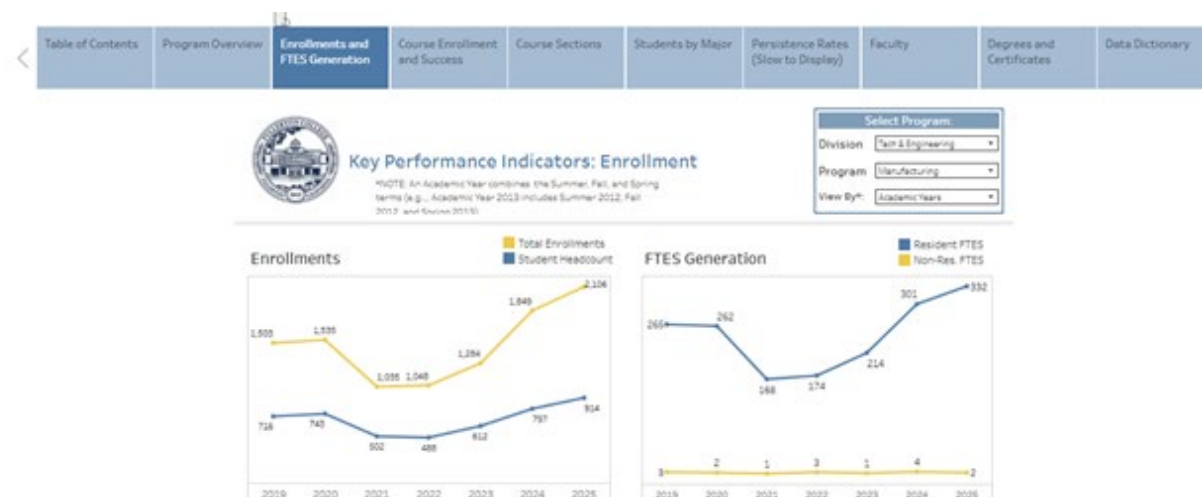


Figure 3

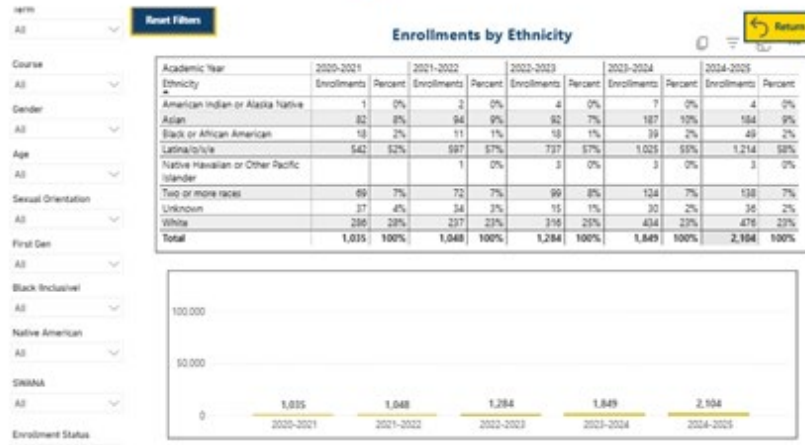
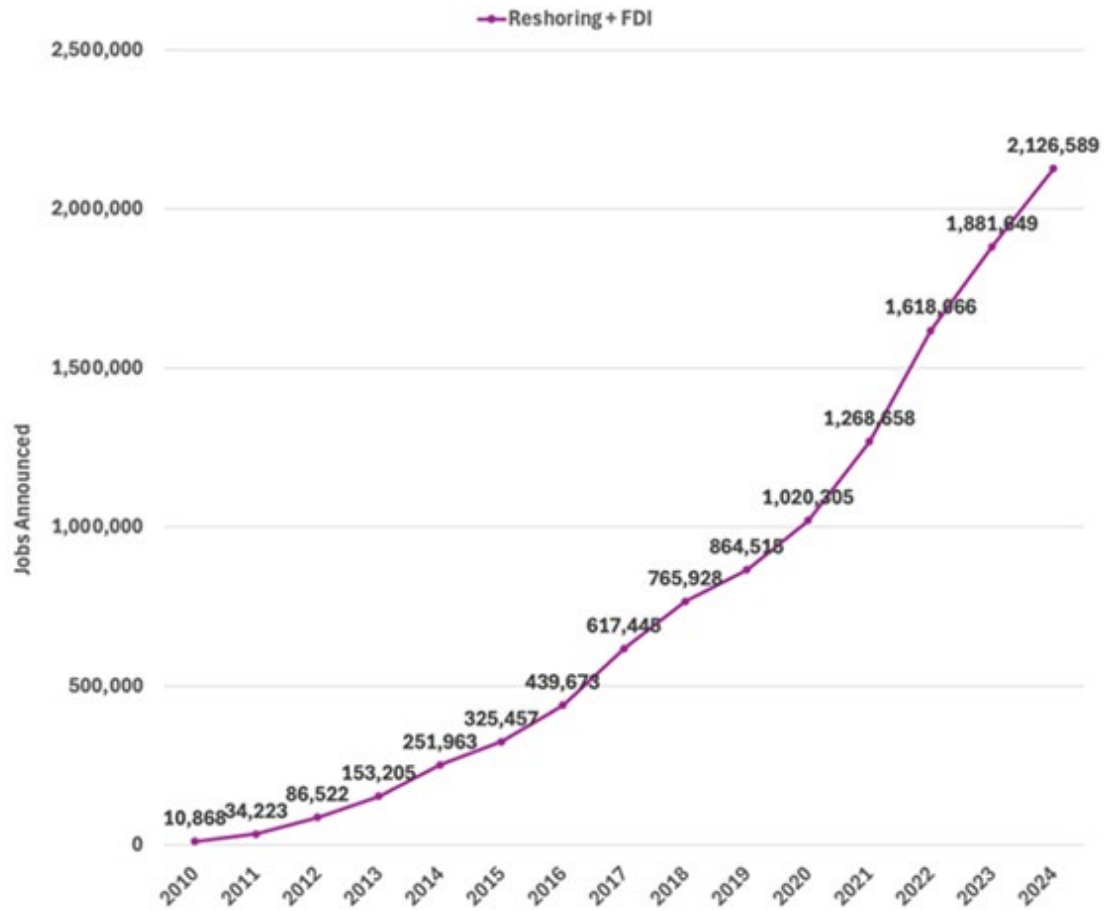


Figure 4

Exhibit 3 | Cumulative Jobs Announced, Reshoring + FDI, 2010-2024



3. How do you monitor and modify course offerings, including time and modality, to ensure that students' needs are being met?

Monitoring of course offerings is performed by full-time faculty in the manufacturing departments. In the manufacturing area all departments have advisory meetings on a yearly basis with business partners. It is during these meetings that course offerings, including times and modality, are discussed in order to support those businesses. Since many of our students work part-time for manufacturing businesses in the area it is critically important that we receive input. To make sure that we serve both full-time and part-time students we typically offer day and evening courses to serve all needs. Modifying course offerings, including time and modality, are also discussed during department meetings to ensure that faculty can cover all course offerings. A six year review of curriculum has been performed for all major areas in manufacturing.

2.2 Student Achievement

1. Using data provided by the OIE, describe overall student achievement counts, rates, and trends in your program over the past five years, these include: course success rates, degrees/certificates completion counts, transfer counts, licensing, job placement, wage improvements (not all of these measures apply to every program).

Overall, the Student achievement counts, rates and trends in manufacturing programs have been steadily increasing over the last 5 years. We attribute this to the increase in demand for the skill/trades area. See Figures 6 through 13.

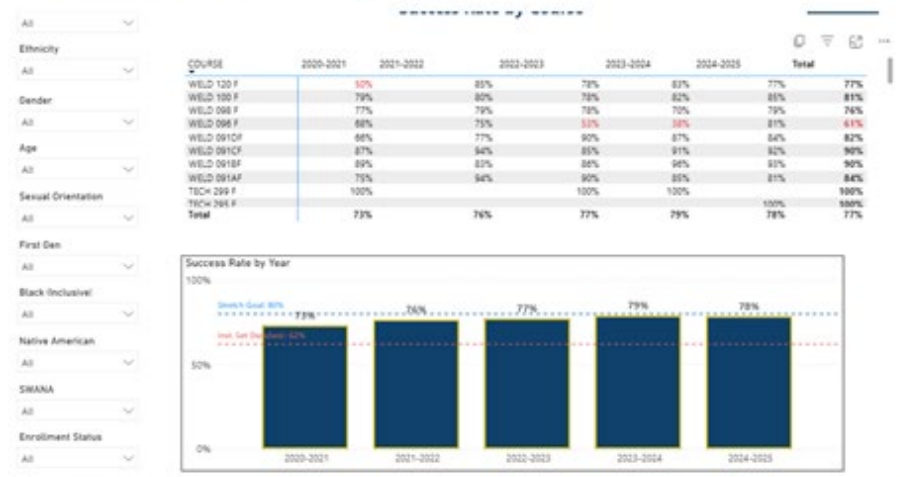


Figure 6

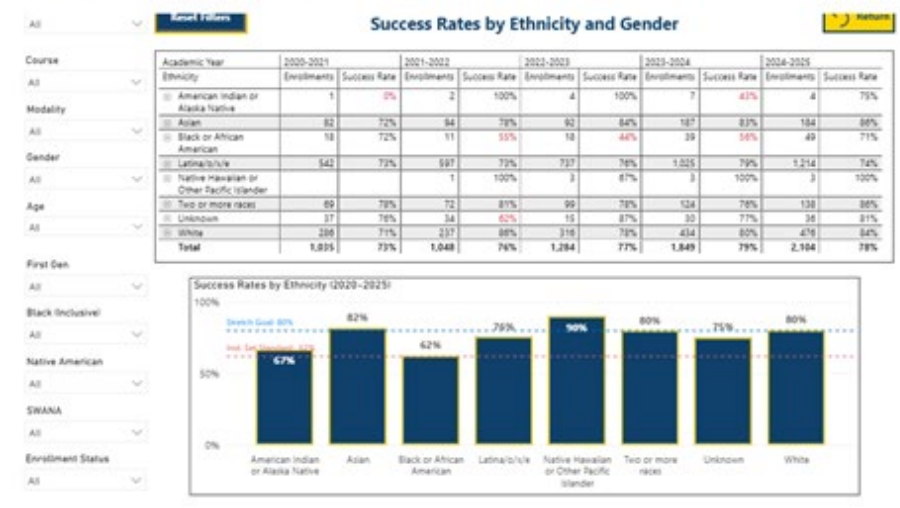


Figure 7



**Key Performance Indicators:
Enrollment and Success**

*NOTE: An Academic Year combines the Summer, Fall, and Spring terms (e.g., Academic Year 2023 includes Summer 2022, Fall 2022, and Spring 2023).

Select Program(s)
 Division: Tech & Engineering
 Program: Manufactory
 View By: Academic Years



Additional Filters:
 Course: [All]
 Race / Ethnicity: [All]
 Gender: [All]
 Change the View:
 Outcome / Measure: Course Success
 Disaggregate by: All

Figure 8

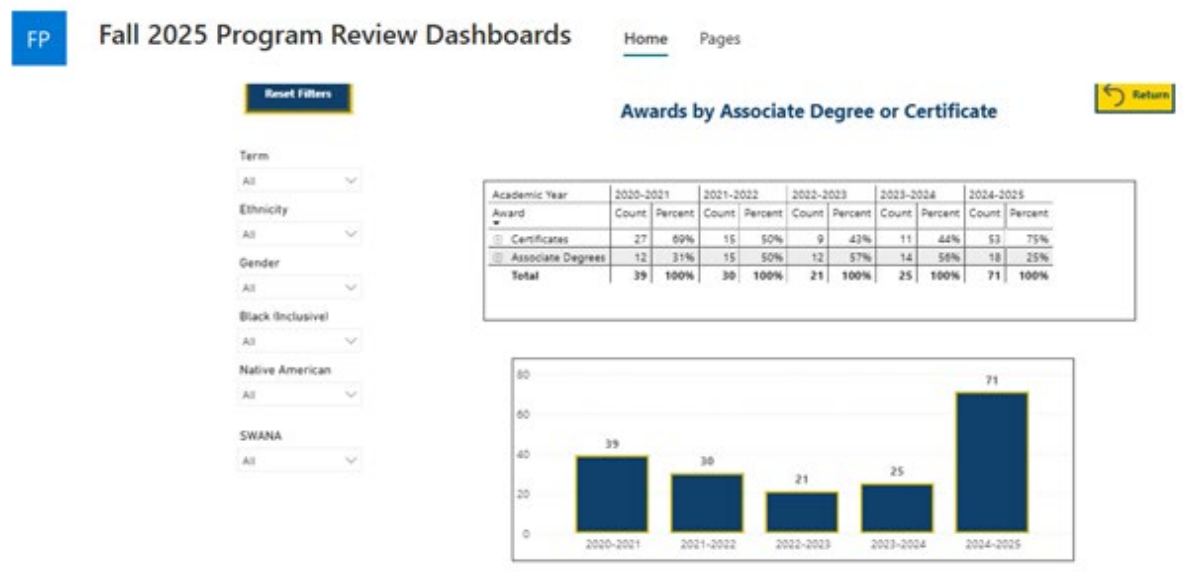


Figure 9

Reset Filters

Awards by Ethnicity and Gender

Return

Term
All

Ethnicity
All

Gender
All

Degree or Certificate
All

Black (Inclusive)
All

Native American
All

SWANA
All

Academic Year	2020-2021		2021-2022		2022-2023		2023-2024		2024-2025	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Asian	5	13%	2	7%	4	19%			9	13%
Filipino									2	3%
Latina/o/x/i/e	22	56%	15	50%	9	43%	20	80%	35	49%
Race/ethnicity unknown	1	3%	1	3%	1	5%			1	1%
Two or more races			2	7%					2	3%
White	11	28%	10	33%	7	33%	5	20%	22	31%
Total	39	100%	30	100%	21	100%	25	100%	71	100%

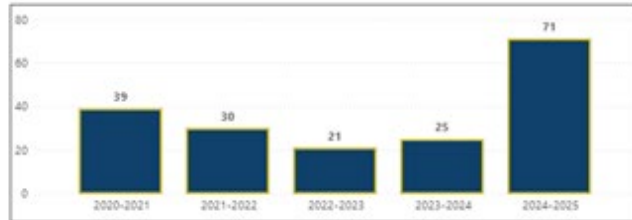


Figure 10

Reset Filters

Years to Degree Completion

Return

Term
All

Degree Type
All

Ethnicity
All

Gender
All

Black (Inclusive)
All

Native American
All

SWANA
All

Academic Year	2020-2021		2021-2022		2022-2023		2023-2024		2024-2025	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
1-2 years	3	27%			1	10%	1	8%	3	18%
3-5 years	4	36%	6	43%	7	70%	6	46%	5	29%
6 or more years	4	36%	8	57%	2	20%	6	46%	9	53%
Total	11	100%	14	100%	10	100%	13	100%	17	100%

Average Years to Graduate (Overall)
6.86

Figure 11



Figure 12

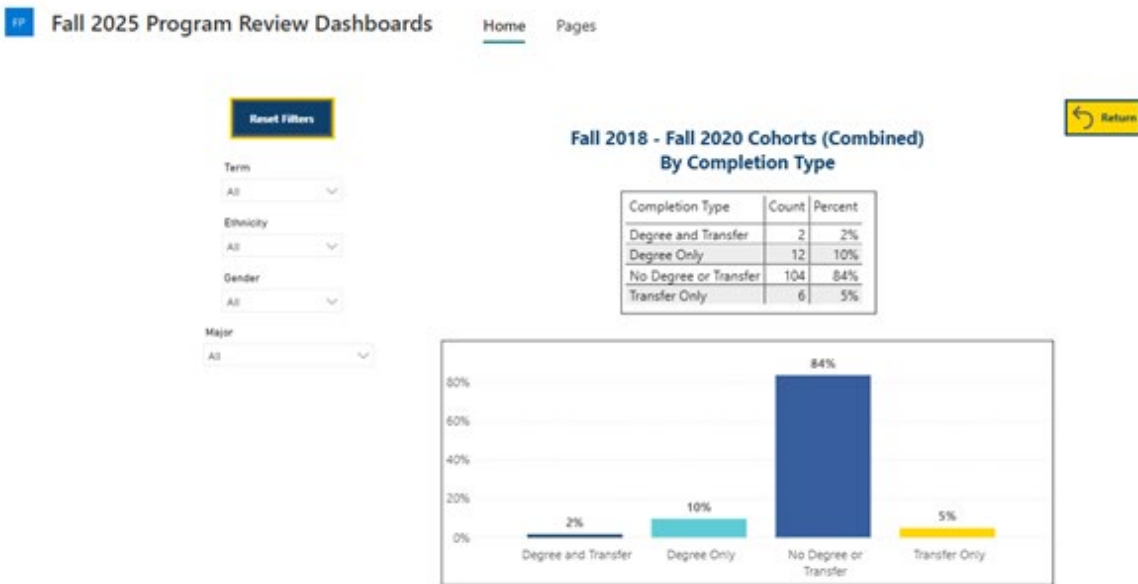


Figure 13

2. Are there student groups whose success rates are below the institution-set standard or whose success rates are below other student groups? What factors can explain this?

At this time there are no student groups whose success rate is below the institution-set standard when averaged over a 5-year period. However, the Black, American Indian, and Unknown ethnicity groups seem to either perform at Institution set standards or slightly below the standard when compared with other student groups. We attribute this to the low enrollment numbers of these ethnic groups.

3. In terms of your degree and certificate completers, are there any groups who are underrepresented in your completion data compared to the overall enrollment in your program?

At this time, I do not believe there are any groups who are underrepresented in the completion data.

4. Are your students completing your degree and certificate program requirements in the expected time frame? Are there certain groups whose rates are below other student groups? Discuss any efforts to improve time to completion.

In the manufacturing area many students work either part time or full time hence many students attend on a part time basis. Some students are on financial aid programs which have special conditions attached to them. In some cases, completing a certificate or degree will terminate any financial assistance they get. Due to this, working overtime, scheduling conflicts, and family constraints, the typical time for completion of a degree or certificate or transfer is around 6.86 years according to the data. See Figures 6-13.



Figure 6

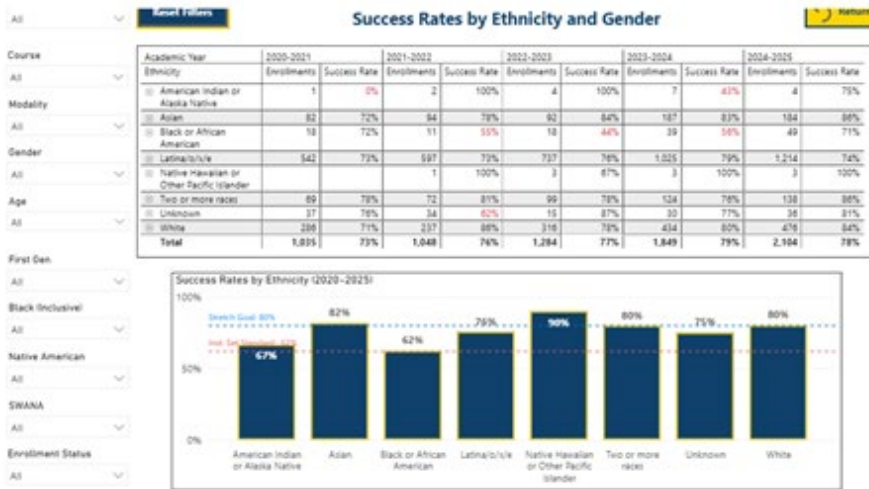


Figure 7



Key Performance Indicators: Enrollment and Success

NOTE: An Academic Year combines the Summer, Fall, and Spring terms (e.g., Academic Year 2023 includes Summer 2022, Fall 2022, and Spring 2023).

Select Program(s):
 Division: Tech & Engineering
 Program: Mach/Manufacturing
 View By: Academic Years



Additional Filters:
 Course: [All]
 Race / Ethnicity: [All]
 Gender: [All]
 Change the View:
 Outcome / Measure: Course Success
 Disaggregate by: All

Figure 8

Reset Filters

- Term
All
- Ethnicity
All
- Gender
All
- Black Inclusive
All
- Native American
All
- SWANA
All

Awards by Associate Degree or Certificate

Academic Year	2020-2021		2021-2022		2022-2023		2023-2024		2024-2025	
Award	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Certificates	27	69%	15	50%	9	43%	11	44%	53	75%
Associate Degrees	12	31%	15	50%	12	57%	14	56%	18	25%
Total	39	100%	30	100%	21	100%	25	100%	71	100%

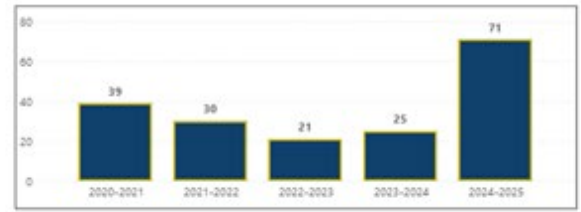


Figure 9

Reset Filters

- Term
All
- Ethnicity
All
- Gender
All
- Degree or Certificate
All
- Black Inclusive
All
- Native American
All
- SWANA
All

Awards by Ethnicity and Gender

Academic Year	2020-2021		2021-2022		2022-2023		2023-2024		2024-2025	
Ethnicity	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Asian	5	13%	2	7%	4	19%			9	13%
Filipino									2	3%
Latina/o/x/e	22	56%	15	50%	9	43%	20	80%	35	49%
Race/ethnicity unknown	1	3%	1	3%	1	5%			1	1%
Two or more races			2	7%					2	3%
White	11	28%	10	33%	7	33%	5	20%	22	31%
Total	39	100%	30	100%	21	100%	25	100%	71	100%

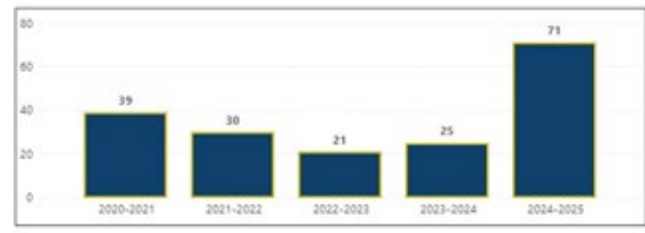


Figure 10

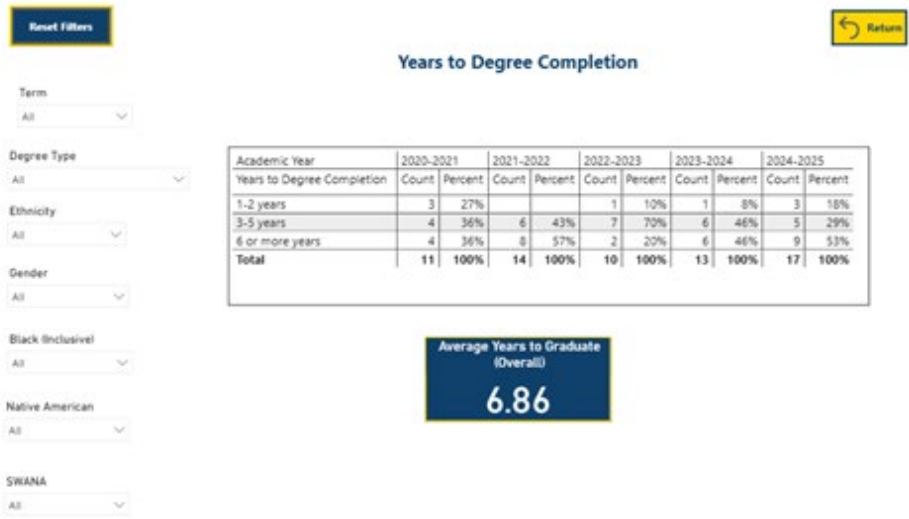


Figure 11



Figure 12

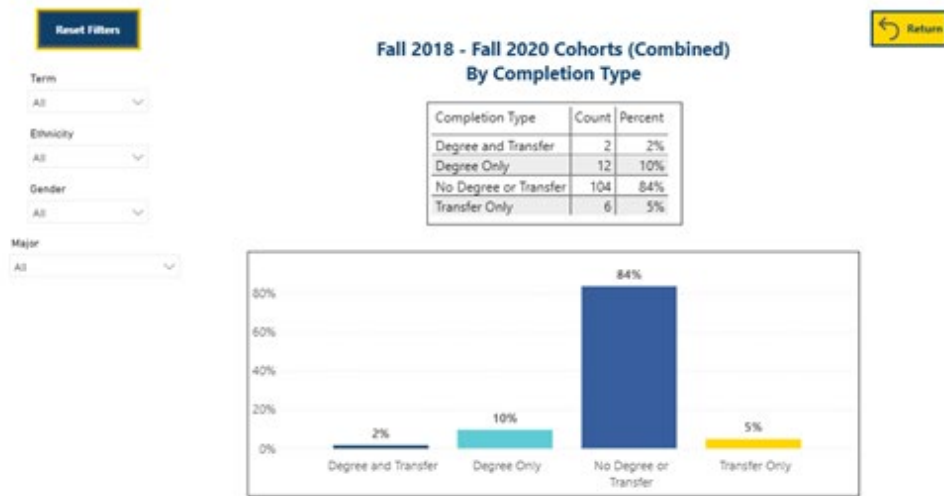


Figure 13

2.3 Student Learning Outcomes

1. Describe your program’s processes and practices for defining, assessing, and analyzing student learning outcomes at the course (CSLO) and program (PSLO) level. Include a discussion of how your program uses the results of CSLO/PSLO data to inform course and program improvement efforts.

The manufacturing departments have used in the past inputs from the Elumen system to formulate results. Since the departments have a small number of faculty the results are typically shared during department meetings or individual meetings. Results are often summarized to include a broad range of results, however specific results by course/SLO/department can be obtained if

needed during the discussion. A sample report with Machine Technology cumulative totals (for the last 5 years) is shown below in Figure 14. Data such as the report below can speak volumes when determining where more emphasis needs to be placed when addressing gaps in training and education.

SLO Performance Report-with Demographics Disaggregation by ethnicity subpopulation 21-24

Overall by Demographic Element for Demographic Category: Ethnicity

	Greatly exceeds expectations.		Exceeds expectations		Meets expectations		Does not meet expectations but developing		Does not meet expectations	
African American					66	90.41%			7	9.59%
American Indian/Alaskan Native					30	100.00%				
Asian					1237	92.38%			102	7.62%
Filipino					182	86.26%			29	13.74%
Hispanic					4219	85.09%			739	14.91%
Pacific Islander					49	77.78%			14	22.22%
Unknown					96	75.59%			31	24.41%
Unspecified	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
White Non-Hispanic	0	0.00%	0	0.00%	2234	91.67%	0	0.00%	203	8.33%

Figure 14

- (OPTIONAL/NOT REQUIRED) Using the data provided by OIE, describe the most salient results of CSLO or PSLO mastery rates. Did you find significant differences by race, ethnicity, gender, and other categories?

Upon review of all data available there is not sufficient evidence that show a significant difference by race, ethnicity, gender, and other categories at this time.

Section 3: Other Areas of Program Effectiveness

- Document any substantial changes to your program curriculum since the last review and discuss what prompted these changes. Looking forward, what changes to the curriculum do you plan based on the emerging needs of your discipline, industry, student population, etc.

Since the last program review there have been some changes in the manufacturing departments which have been made. They are as follows:

- The Welding Department has changed all courses to a 100-level number. Although this may sound insignificant it will help with the perception that welding is a profession not a hobby. This will help students in the long run when they continue their educational goals.*

- *All Manufacturing departments (Machine; Drafting; Welding; Technology; Metallurgy) have been through a curriculum six-year review process which has forced faculty to review courses and programs. Items such as catalog description; schedule description; instructional objectives; student learning outcomes; course content; textbooks; course sequencing, and a variety of other areas were vetted during this process so that they are better aligned to serve the students and industry.*
- *Apprenticeship programs/processes have been initiated and are now in place to help businesses wishing to have such programs so they can attract and keep employees. This has helped students find and keep jobs as they are going to school. We currently have 4 students enrolled in the apprenticeship program with more slated to begin soon.*
- *Capstone projects have been in place for many years in the manufacturing courses and programs, however more robust projects are being developed to increase the skills and abilities of future students.*
- *One of the first Study Abroad programs for CTE students was completed in the Summer of 2024 (Germany) which attracted the attention of many students. A Study Abroad program for CTE students is now underway for the Summer 2026 (France). This type of program allows students to deepen their knowledge of manufacturing worldwide.*
- *Implementation of the MACH 105F and 106F Conversational Programming courses in 2025 will help to address emerging trends in the industry regarding conversational programming needs. Implementation of advanced programming courses for 3-4-5 axes machines has been implemented which allow students to gain valuable skills and abilities that can be used to obtain employment. Implementation of our CNC Swiss Style Lathe courses MACH 140F, MACH 142F, and MACH 145F has allowed us to serve another emerging trend in the CNC Swiss Screw machine area. All courses have varying degrees of diverse student group populations.*
- *It is critically important to understand that all manufacturing departments have software/hardware, tools, and equipment needs on an ongoing basis. These pieces of software/hardware, tools, and equipment need regular maintenance in order to keep them in working order (much the same way a car needs regular maintenance). Regulations both internal and external as well as budget cuts have hampered efforts to repair, replace, and/or upgrade software/hardware, equipment, and tooling.*
- *The plan for manufacturing departments at Fullerton College is to continue to align with industry demands and needs where possible that are put forward during yearly Advisory meetings.*

2. Please briefly describe opportunities your students have to apply and deepen knowledge and skills through projects, apprenticeship, internships, co-ops, clinical placements, group projects outside of class, service learning, study abroad, and other experiential learning activities that you intentionally embed in coursework or elsewhere in your program.

See response in section 3 item 1

3. Describe any laws, regulations, trends, policies, procedures, or other influences that have an impact on your program. These can include things like Vision 2030, CALGETC, Common Course Numbering, etc.

There are a number of trends in the manufacturing industry that have affected our programs. However, the list of trends and the number of trends far exceed the limits of this Program Review. A brief list of trends in manufacturing is as follows:

1. AI innovations
 2. Advances in Robotics
 3. Advances in CAM and CAD software
 4. Advances in materials used in the manufacturing industry
 5. Additive manufacturing
 6. 3 D printing innovations
 7. Vision, imagining, scanning, and inspection systems
-

Section 4: Faculty and Staff

4.1 Population and Demographics

1. Using the data provided by OIE, describe your program's staff (full-time/part-time faculty, nonfaculty, classified). How reflective of your program's student population is your staff?

Program staff (full-time/part-time faculty) headcount currently is not adequate. Our demographic make-up of students' has changed however our faculty/staff has not changed significantly in the last 5 years. To service all sections and programs properly one more full-time faculty headcount is necessary in the Metrology/Technology area.

2. Describe your program's staffing changes since fall 2021. How have these changes impacted your program's ability to achieve its strategic action plans?

Since Fall 2021 we have maintained mostly a steady number of full-time faculty and have increased the number of part time faculty in the last academic year. This part-time faculty headcount increase has allowed us to put more courses and more sections up each semester, which was part of the overall strategic plan. Obtaining qualified faculty in the trades/skills area is difficult since many qualified instructors work full-time with overtime. Hence many

of them are not looking for part-time work or have no desire to be a teacher. See Figures 15-18 below.

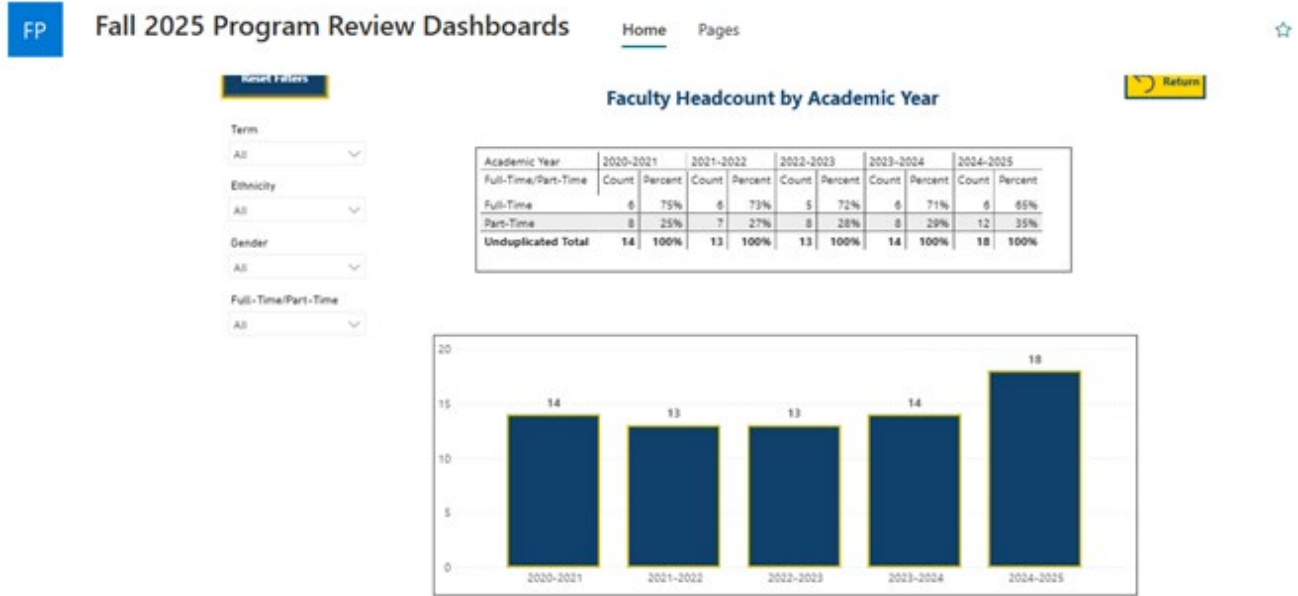


Figure 15

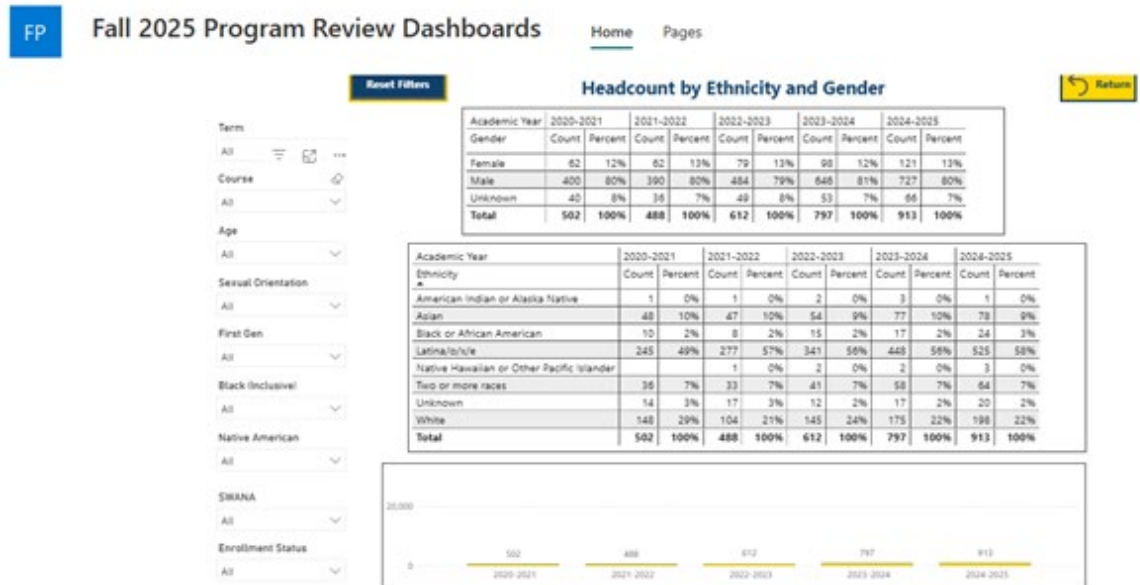


Figure 16

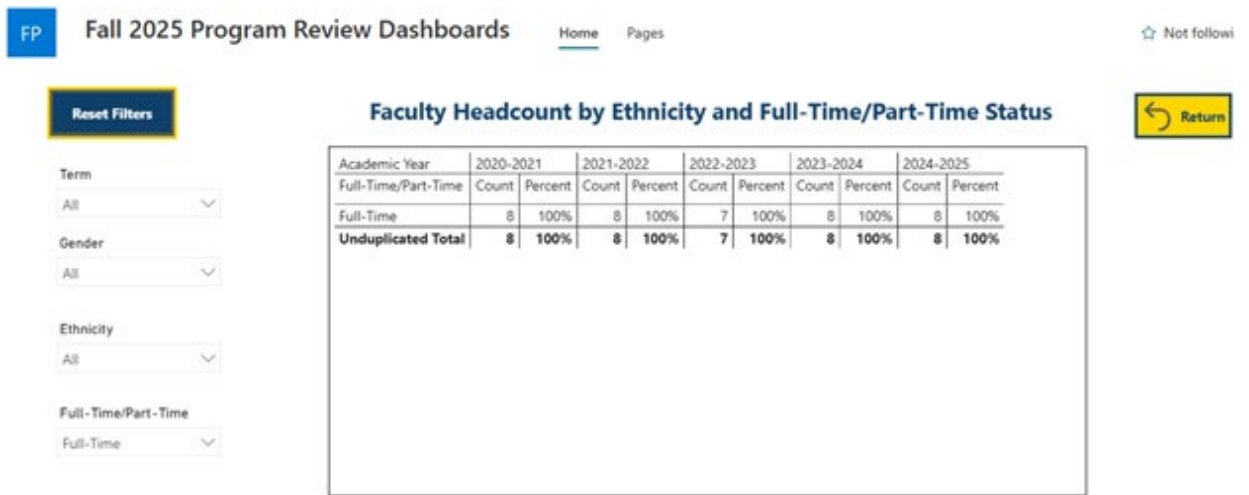


Figure 17

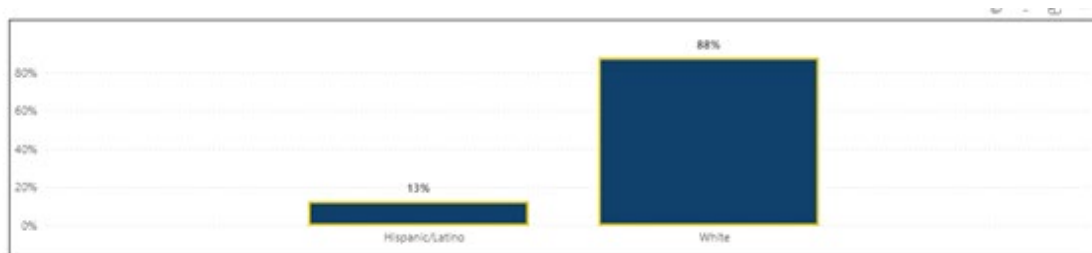


Figure 18

4.2 Staff Support and Professional Development

1. Describe the regular discussions your program faculty are having about equitable grading, attendance, late work, extra credit policies, and other strategies to support equitable student success.

Faculty in each department meet annually to discuss SLOA results for all classes. If any SLO's show a declining trend, faculty review the process and make recommendations for change or replacement. In the case of test questions, a simple change in sentence structure has resulted in the clarity and understanding of the question which has shown improvement in the SLO result.

2. How have these conversations shaped practices or polices in your program? What action has arisen from these discussions? If no action has been taken, why not?

Depending on the number of instructors present in the department Advisory meetings, there are times that the instructors make comparisons about student participation and performance and usually find a similar trend. We then discuss solutions that have improved these trends and share

all ideas on how to make improvements with student engagement.

3. What additional areas of professional development could help your faculty and staff engage in this work?

Professional development in the following areas would be beneficial:

1. Program review
 2. Insights -our new SLO process/software
 3. Course Dog-our new curriculum software
 4. Canvas
-

Section 5: Program Planning

5.1 Progress on Previous Strategic Action Plans

1. Please discuss the goals (Strategic Action Plans, SAPs) from your last self-study. Assess and explain your progress on each of the SAP.

For Manufacturing the Strategic Action Plan that was submitted for Program Review in October 2021 was not fully enacted. The following items were requested:

- *Increased footprint of the Machine Technology department so that Metrology equipment/tools, robots and student head count could be increased. This was partially planned for the 902 lab or similar.*
 - *Status-Only classroom 902 (classroom space) has been scheduled for manufacturing courses. At this time no additional lab space has been allocated.*
 - *There was a request for \$415,000 to implement this project.*
 - *Status-We received as of October 15th, 2025, a SWP grant for \$240,000. This is welcomed money to support all programs related. Other money was received for the Welding department but not related to this project. No official status of this other money is known at this time.*
 - *One additional full-time headcount to the Manufacturing department to support Metrology and other departments.*
 - *Status-No action*
-

2. If additional funds were NOT allocated to you in the last review cycle, how did the LACK of funds have an impact on your program?

The lack of funds and head count to the manufacturing department has resulted in the metrology program not operating at its full potential. Student enrollments drive the course and program however if no adequate space is allocated the equipment cannot be used to its fullest extent hence students do not sign up. Currently only part time faculty support the metrology program which limits the enrollment.

SAPs

Manufacturing at Fullerton College

Short Description:

Manufacturing Strategic Action Plan for Academic years 2026-2027; 2027-2028; 2028-2029; and 2029-2030. W4 are addressing increased enrollment needs and innovative trends in the industry.

Measurable Outcomes:

Our goal is to increase enrollment through increased course offerings in the up-and-coming manufacturing areas. In the next 4 years we anticipate an increase of apprenticeship cohorts in the manufacturing area. This will also increase the number of non-traditional students.

College Goals:

1.2. Increase equitable usage of apprenticeship/internship; 1.3 Night, weekend, online degree program

SAP Phase:

In Progress

Resource Requests

Manufacturing at Fullerton College

Enhancement:

To achieve this new SAP in the next 4 years we would like to request one additional full-time headcount in the Machine Technology/Metrology/Technology area. This will allow us to offer day and evening courses in metrology and other areas in manufacturing. In addition, we will need extra room/lab space/computers to grow the program. More money and equipment will be necessary to support the growth trajectory shown in Figures 1-5. This additional headcount will allow us to improve student learning and achievement by increasing our enrollment in new areas requested by industry demands such as robotics, manufacturing engineering, metrology, etc. The cost of one new head count includes the salary; benefits; new equipment; software; and cost of ancillary items necessary to sustain a faculty member in the Metrology department.

Personnel-Related:

This request is personnel related. The number of students in the program has increased in the last 4 years and it appears that this number will increase in the coming years. Please see Figure 1-5.

Resource Category:

Full-time Faculty

Quantity:

1

Unit Cost:

\$400,000.00

TotalCost:

\$400,000.00

Resource Requests

Machine Technology Sustainability Part 1

Enhancement:

Computers and software are an essential need in today's educational environment. Our current computers and software are in need of updating and upgrading.

Personnel-Related:

NA

Resource Category:

Computer Hardware

Quantity:

60

Unit Cost:

\$2,000.00

TotalCost:

\$120,000.00

Machine Technology Sustainability Part 2

Enhancement:

To support Part 1 of the Machine Technology Sustainability plan-Tools, supplies, and equipment needs to be replaced and/or maintained in our shop to serve our students and local industry needs. Maintaining equipment, supplies, and tools is essential to support our shop in a safe and effective environment.

Personnel-Related:

NA

Resource Category:

Equipment

Quantity:

5

Unit Cost:

\$20,000.00

TotalCost:

\$100,000.00

Machine Technology Sustainability Part 3

Enhancement:

Expendable tools, cutters, and other teaching supplies that support faculty and students in a classroom and lab. Expendable Items such as micrometers; calipers; measurement devices; lathe toolbits; endmills; drills; etc. are typically items that students use on a frequent basis and are prone to breaking. Hence replacement of these items is necessary to maintain a safe and effective environment.

Personnel-Related:

NA

Resource Category:

Supplies

Quantity:

1000

Unit Cost:

\$100.00

TotalCost:

\$100,000.00