



Cycle: 2018-2021

DIPLOMA IN APPLIED SCIENCE WITH A MAJOR IN MACHINE TOOL

Program Mission Statement:

The Machine Tool diploma is a three semesters program designed to prepare students for gainful employment in the area of precision machining. The course objectives include learning safe work habits, metallurgy, precision measurement, and the set up and operation of machine tools that cut and shape metal. Lathes, milling machines, drill presses, saws, and grinders are some of the equipment used in the Machine Tool curriculum. Machine Tool graduates can become employed as a machinist, instrument maker, or CNC Operator.

Division: Technical and General Education

AVP: Dan Averette

Department Chair: Shawn Reed

Director:

SACSCOC Standard: 8.2A

Accrediting Agency: Yes No

Name: NA

Certification Exam(s): Yes No

Agency Name:

Credential:

Program Student Learning Outcome	Monitoring Year
Apply industry standard safety practices and specific safety requirements for different machining operations.	2018-2019
Interpret blueprint information and translate it into actionable items.	2019-2020
Perform set up and operation of manual machines, such as band saw, lathe, mill, and drill press.	2019-2020
Calculate necessary tolerances to plan for the machine sequences.	2020-2021
Inspect the produced part to ensure completion per blueprint requirement.	2020-2021

STUDENT LEARNING OUTCOMES FOR 48.0501 2018-2019

A. Program Student Learning Outcomes	B. What courses are PSLOs Assessed	C. Methods for Outcomes Assessment	D. Expected Level of Program Performance	E. Data Collection	F. Results	G. Plan For Improvement
What should the graduates of your program be able to do?	Where do you see evidence that the student can do these things?	How does your program evaluate student/graduate skills/abilities?	What is the expected level of student performance <u>for the program</u> ?	When will you collect the data needed to evaluate the performance of the program?	What are the results of the evaluation? NOTE: include student ratio with all results.	How will you use this information to improve the program
Apply industry standard safety practices and specific safety requirements for different machining operations.	MTT 112	Students apply standard safety practices in machine tool technology.	100% of MTT students will pass the safety test with a grade of 80% or above.	Spring 2019	18 out of 18 (100%) students made a grade of 80% or above. Class average was a 96.5%.	The expected learning level was met and the faculty will continue to evaluate this learning outcomes with other classes since safety is the most important outcome we have.

STUDENT LEARNING OUTCOMES FOR 48.0501 2019-2020

A. Program Student Learning Outcomes	B. What courses are PSLOs Assessed	C. Methods for Outcomes Assessment	D. Expected Level of Program Performance	E. Data Collection	F. Results	G. Plan For Improvement
What should the graduates of your program be able to do?	Where do you see evidence that the student can do these things?	How does your program evaluate student/graduate skills/abilities?	What is the expected level of student performance <u>for the program</u> ?	When will you collect the data needed to evaluate the performance of the program?	What are the results of the evaluation? NOTE: include student ratio with all results.	How will you use this information to improve the program
Interpret blueprint information and translate it into actionable items.	MTT 250	Students prepare a program to contour a simple part on a CNC mill.	100% of students will make a grade of 70% or above on G02-G03 mill block. MTT 250.	Summer 2020	8 out of 8 students (100%) passed the project with a 70% or above. Class average on this project was a 97%.	The expected learning level was met and the faculty will continue to evaluate this learning out comes with other classes that deal with CNC programing.

STUDENT LEARNING OUTCOMES FOR 48.0501 2019-2020

A. Program Student Learning Outcomes	B. What courses are PSLOs Assessed	C. Methods for Outcomes Assessment	D. Expected Level of Program Performance	E. Data Collection	F. Results	G. Plan For Improvement
What should the graduates of your program be able to do?	Where do you see evidence that the student can do these things?	How does your program evaluate student/graduate skills/abilities?	What is the expected level of student performance <u>for the program</u> ?	When will you collect the data needed to evaluate the performance of the program?	What are the results of the evaluation? NOTE: include student ratio with all results.	How will you use this information to improve the program
Perform setup and operation of manual machines, such as band saw, lathe, mill, and drill press.	MTT 112	MTT Diploma students will demonstrate basic operations on the mill.	100% of MTT Diploma students will make a grade of 70% or better on pass/fail mill block.	Spring 2020	9 out 11 students (81.8%) made a 70% or above on this project. Class average on this project was an 80% with 2 students who did not make the required 70% or above.	The expected learning outcome was not met. The MTT faculty determined the students needed extra time on the machine and part alignment to help ensure the tolerance of 0.002 of inch can be achieved on future projects.

STUDENT LEARNING OUTCOMES FOR 48.0501 2020-2021

A. Program Student Learning Outcomes	B. What courses are PSLOs Assessed	C. Methods for Outcomes Assessment	D. Expected Level of Program Performance	E. Data Collection	F. Results	G. Plan For Improvement
What should the graduates of your program be able to do?	Where do you see evidence that the student can do these things?	How does your program evaluate student/graduate skills/abilities?	What is the expected level of student performance <u>for the program</u> ?	When will you collect the data needed to evaluate the performance of the program?	What are the results of the evaluation? NOTE: include student ratio with all results.	How will you use this information to improve the program
Calculate necessary tolerances to plan for the machine sequences.	MTT 113	Students perform advanced operation on the manual lathe.	100% of the students will make a 70% or higher on MTT 113 project Pass/Fail Lathe Chucking project.	Summer 2021	7 out of 11 students (63.6%) made a grade of 70% or higher. Class average 63%.	The expected learning outcome was not met. The 4 students who did not meet the benchmark did not complete the course due to COVID-19 shut down. The faculty will encourage the students be more aware of time management.

STUDENT LEARNING OUTCOMES FOR 48.0501 2020-2021

A. Program Student Learning Outcomes	B. What courses are PSLOs Assessed	C. Methods for Outcomes Assessment	D. Expected Level of Program Performance	E. Data Collection	F. Results	G. Plan For Improvement
What should the graduates of your program be able to do?	Where do you see evidence that the student can do these things?	How does your program evaluate student/graduate skills/abilities?	What is the expected level of student performance <u>for the program</u> ?	When will you collect the data needed to evaluate the performance of the program?	What are the results of the evaluation? NOTE: include student ratio with all results.	How will you use this information to improve the program
Inspect the produced part to ensure completion per blueprint requirement.	MTT 113	Students will setup the lathe and/or mill correctly and produce a first article that is accurate according to the blueprint.	100% of students will make a grade of 70% or higher on the Milling Cutter Arbor mil/lathe project in MTT 113.	Summer 2021	11 out of 11 (100%) students made a grade of 70% or higher on the Milling Cutter Arbor mill/lathe project in MTT 113 Class average was an 82.5%.	The expected learning level was met and the faculty will continue to evaluate the progress of insuring blueprint requirement.

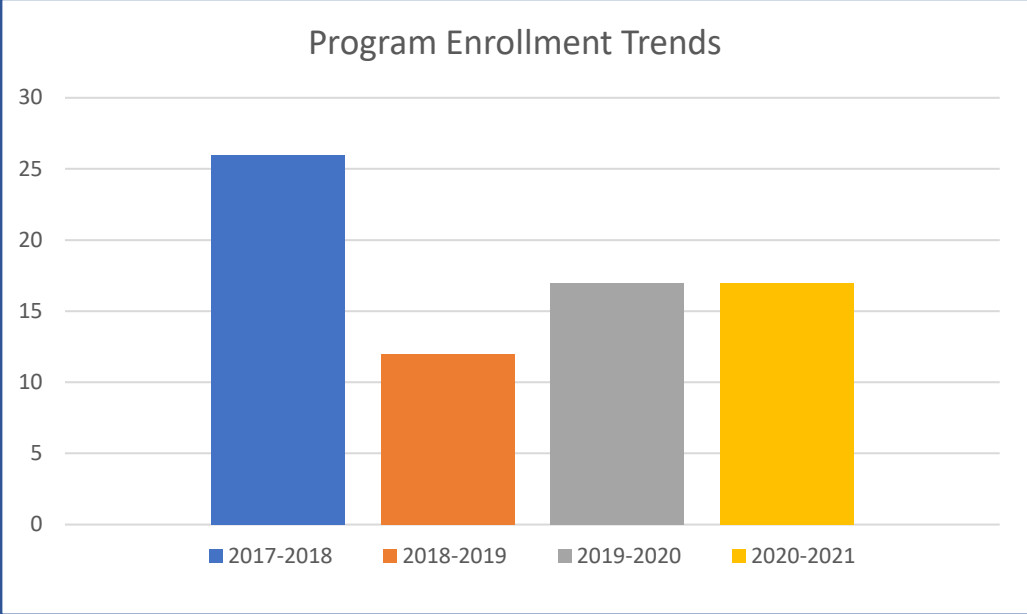
CONTINUOUS STUDENT IMPROVEMENT

In comparison to the last cycle the MTT Faculty has been able to identify the short falls in tracking student improvement. The faculty in this cycle has been focusing on more hands-on projects to evaluate student learning outcomes because they feel this approach gives them a more accurate method to determine mastery of the concepts.

The program's one major short fall from last cycle would be in the MTT 113 class pass/fail projects. The students did struggle with holding tolerances to blueprint specifications which could be attributed to limited understanding how the machine and material conditions affects the parts being made. The faculty has started to address this issue by requiring the students to inform the instructor the required steps of completing the project before the first attempt.

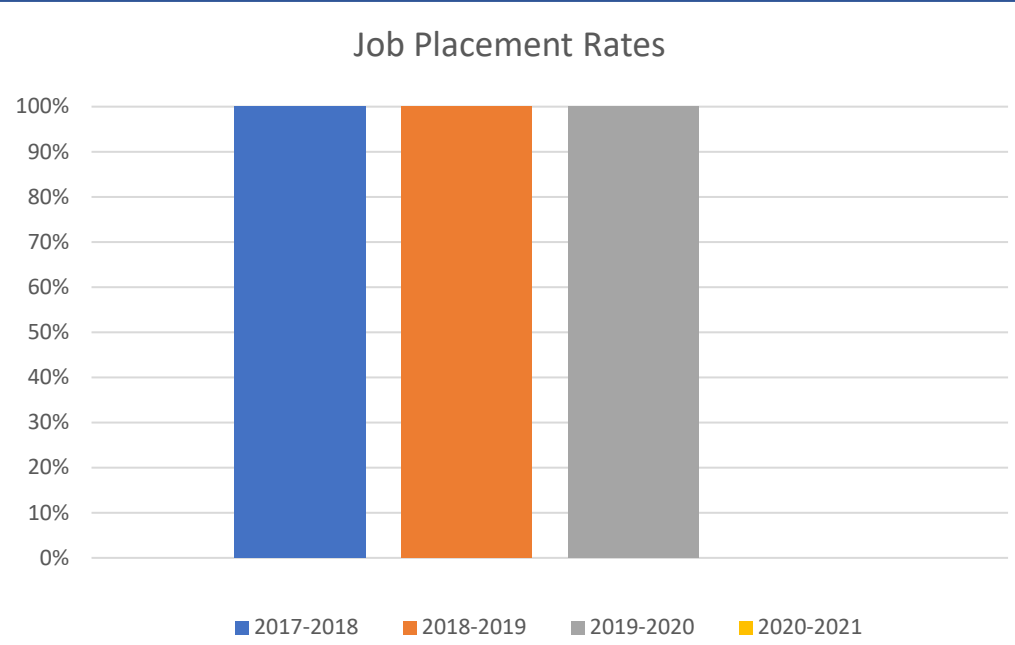
Overall, the MTT faculty feels that student performance will continue to improve. All the MTT students from these different cohorts are working in the field.

PROGRAM VITAL STATISTICS

Indicator	Trend Analysis	Action Plans										
<div style="text-align: center;"> <p>Program Enrollment Trends</p>  <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <caption>Program Enrollment Trends Data</caption> <thead> <tr> <th>Academic Year</th> <th>Enrollment</th> </tr> </thead> <tbody> <tr> <td>2017-2018</td> <td>26</td> </tr> <tr> <td>2018-2019</td> <td>12</td> </tr> <tr> <td>2019-2020</td> <td>17</td> </tr> <tr> <td>2020-2021</td> <td>17</td> </tr> </tbody> </table> </div>	Academic Year	Enrollment	2017-2018	26	2018-2019	12	2019-2020	17	2020-2021	17	<p>Many of the MTT students are enrolled in the MTT Degree program and this program is used as an exit program for those students who do not wish to obtain a degree.</p>	<p>The faculty will make sure the Change of Major forms are done in a timely manner.</p>
Academic Year	Enrollment											
2017-2018	26											
2018-2019	12											
2019-2020	17											
2020-2021	17											

Indicator	Trend Analysis	Action Plans										
<p style="text-align: center;">Fall to Spring Persistence</p> <table border="1"> <caption>Fall to Spring Persistence Data</caption> <thead> <tr> <th>Academic Year</th> <th>Persistence Rate</th> </tr> </thead> <tbody> <tr> <td>2017-2018</td> <td>70%</td> </tr> <tr> <td>2018-2019</td> <td>75%</td> </tr> <tr> <td>2019-2020</td> <td>60%</td> </tr> <tr> <td>2020-2021</td> <td>80%</td> </tr> </tbody> </table>	Academic Year	Persistence Rate	2017-2018	70%	2018-2019	75%	2019-2020	60%	2020-2021	80%	<p>The persistence rate has remained somewhat steady through this cycle with a dip in the 2019-2020 academic year.</p>	<p>The program faculty has started an open lab tutoring time on Friday mornings to help 1st year Fall students who have fallen behind on the completion of shop projects.</p>
Academic Year	Persistence Rate											
2017-2018	70%											
2018-2019	75%											
2019-2020	60%											
2020-2021	80%											

Indicator	Trend Analysis	Action Plans										
<p style="text-align: center;">Graduation Rates</p> <table border="1" style="margin-top: 10px;"> <caption>Graduation Rates Data</caption> <thead> <tr> <th>Year</th> <th>Rate</th> </tr> </thead> <tbody> <tr> <td>2017-2018</td> <td>100%</td> </tr> <tr> <td>2018-2019</td> <td>100%</td> </tr> <tr> <td>2019-2020</td> <td>100%</td> </tr> <tr> <td>2020-2021</td> <td>100%</td> </tr> </tbody> </table>	Year	Rate	2017-2018	100%	2018-2019	100%	2019-2020	100%	2020-2021	100%	<p>The graduation rate indicators are a little misleading since students may start in one of our 5 other MTT programs and then change programs to the degree and all degree students also receive this diploma.</p>	<p>The faculty will make sure the Change of Major forms are done in a timely manner.</p>
Year	Rate											
2017-2018	100%											
2018-2019	100%											
2019-2020	100%											
2020-2021	100%											

Indicator	Trend Analysis	Action Plans										
<p style="text-align: center;">Job Placement Rates</p>  <p>The chart displays job placement rates for four consecutive periods. The y-axis represents the percentage of graduates placed in jobs, ranging from 0% to 100% in 10% increments. The x-axis lists the periods: 2017-2018, 2018-2019, 2019-2020, and 2020-2021. All four bars are at the 100% level, indicating a consistent high placement rate.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Placement Rate</th> </tr> </thead> <tbody> <tr> <td>2017-2018</td> <td>100%</td> </tr> <tr> <td>2018-2019</td> <td>100%</td> </tr> <tr> <td>2019-2020</td> <td>100%</td> </tr> <tr> <td>2020-2021</td> <td>100%</td> </tr> </tbody> </table>	Year	Placement Rate	2017-2018	100%	2018-2019	100%	2019-2020	100%	2020-2021	100%	<p>The MTT program has always had a very high placement rate due to the great relationship we have with local industries. Most of the companies hire our students while they are still in the first year.</p>	<p>The faculty will continue to work with local industry to insure placement of our graduates.</p>
Year	Placement Rate											
2017-2018	100%											
2018-2019	100%											
2019-2020	100%											
2020-2021	100%											