



Cycle: 2018-2021

CERTIFICATE IN APPLIED SCIENCE WITH A MAJOR IN MACHINIST

Program Mission Statement:

This certificate provides an individual with the basic skills for manual machine operation, including: safety, tooling, set up, speeds and feeds, materials, print reading, and precision measurement. The student will focus learning activities on engine lathes and milling machines. Certificate completers will be prepared for entry level machine tool positions in manufacturing and service businesses.

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: NA

Credential: NA

Program Student Learning Outcome	Monitoring Year
Perform basic setup and operation of a CNC lathe and CNC mill	2018-2019
Calculate and adjust speed, feed and other parameters to properly produce the part.	2018-2019
Interpret blueprint information and translate into actionable items.	2019-2020
Perform setup and operation of manual machine, such as band saw, lathe, mill, and drill press.	2019-2020
Apply industry standard safety practices and specific safety requirements for different machining operations.	2020-2021
Calculate necessary tolerances to plan for the machine sequences.	2020-2021
Inspect the produced part to ensure completion per blueprint requirements.	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
Perform basic setup and operation of a CNC lathe and CNC mill.	MTT 250	Students will prepare a program to contour a simple part on a CNC mill.	100% of the students will make a grade of 70% or better on mill block project G81.	Summer 2019	18 out of 18 students (100%) passed the G81 project with a grade of 70% or above. Class average was 92%.	The expected learning level was met and the faculty will continue to evaluate this learning outcome with other classes that deal with CNC programming.

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
Calculate and adjust speed, feed and other parameters to properly produce the part.	MTT 111	Students select the proper tools to use to machine the type of part required.	100% of the students will make a grade of 70% or better on machine shop project 1.	Fall 2018	12 out of 12 students (100%) passed machine shop project 1 with a 70% or above. The class average was 89%.	The expected learning level was met and the faculty will continue to evaluate this learning outcome with other classes that deal with machining.

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	Each student prepares a program to contour a simple part on a CNC mill.	100% of the students will make a grade of 70% or above on G02-G03 mill block.	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. The faculty will continue to evaluate this learning outcome with other classes that deal with CNC programming.

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 113	MTT Certificate in Machinist students will demonstrate basic operation on the milling machine by completing a milling project to specifications.	100% of MTT Certificate in Machinist students will make a grade of 70% or better on pass/fail mill block assessment.	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 and it was determined that extra time will be spent 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
Apply industry standard safety practices and specific safety requirements for different machining operations.	MTT 111	All MTT students are required to take a safety test.	100% of MTT students will pass the safety test with a grade of 80% or above.	Fall 2020	9 out 9 students (100%) made a grade of 80% or above. Class average was 94%.	The expected learning level was met and the faculty will continue to evaluate this learning outcome with other classes since safety is the most important outcome in the program.

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 was 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. 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 part that is accurate according to the blueprint.	100% of graduates will make a grade of 70% or higher on the Milling Cutter Arbor mill/lathe project in MTT 113.	Summer 2021	11 out of 11 students (100%) 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.

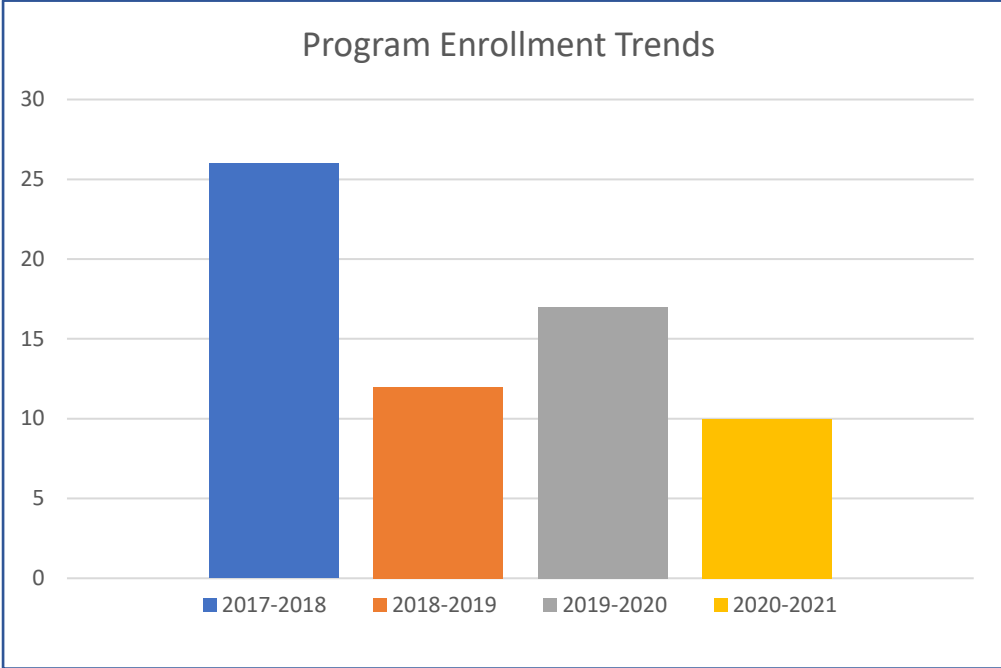
CONTINUOUS STUDENT IMPROVEMENT

The 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 us 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 on 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 of the necessary steps needed to complete the project before the first attempt.

Overall, the MTT faculty feels that 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="border: 1px solid #2c3e50; padding: 10px; text-align: center;"> <p>Program Enrollment Trends</p>  <table border="1" style="margin: 0 auto; border-collapse: collapse;"> <caption>Program Enrollment Trends Data</caption> <thead> <tr> <th>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>10</td> </tr> </tbody> </table> </div>	Year	Enrollment	2017-2018	26	2018-2019	12	2019-2020	17	2020-2021	10	<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 department will make sure Change in Major forms are done in a timely manner.</p>
Year	Enrollment											
2017-2018	26											
2018-2019	12											
2019-2020	17											
2020-2021	10											

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 has started an open lab tutoring time on Friday mornings to help 1st year Fall semester 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"> <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 Certificate.</p>	<p>The department will make sure 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> <table border="1" style="margin-left: auto; margin-right: auto;"> <caption>Job Placement 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 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	Rate (%)											
2017-2018	100%											
2018-2019	100%											
2019-2020	100%											
2020-2021	100%											