



Cycle: 2018-2021

CERTIFICATE IN APPLIED SCIENCE WITH A MAJOR IN COMPUTER NUMERICAL CONTROL PROGRAMMER

Program Mission Statement:

This certificate provides an individual with the skills needed to operate computer numeric control (CNC) machines in manufacturing businesses. The students focus on the processes and procedures commonly used to set up CNC machines, select and install tooling, follow quality control procedures and meet relevant safety expectations. Certificate completers will be prepared to fill positions in manufacturing businesses that are using current machining technologies.

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:

Program Student Learning Outcome	Monitoring Year
Apply industry standard safety practices and specific safety requirement for different machining operations.	2018-2019
Inspect the produced part to ensure completion per blueprint requirement.	2019-2020
Interpret blueprint information and translate into actionable items.	2019-2020
Create the digital geometry necessary for machine programming.	2020-2021
Perform basic and advanced setup with single axis and multi-axis operation of CNC lathe and CNC mill.	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 requirement for different machining operations.	MTT 250	Students understand safety in machine tool technology.	100% of students will make a grade of 70% or higher on the G81 project, setup, operate machine while following all safety rules.	Summer 2019	17 of 17 students (100%) passed the required assignment with a 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 since safety in the field is so important.

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
Inspect the produced part to ensure completion per blueprint requirement.	MTT 252	Student will generate code to produce a thread in a CNC Turning program.	100% of students will make a grade of 70% or higher on CBC thread project.	Spring 2020	11 of 11 students (100%) passed the required assignment with a 70 or above. Class average was 87%.	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 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 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 Class average on this project was a 97% and 100% made a 70% or above.	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 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
Create the digital geometry necessary for machine programming.	MTT 251	Students determine the correct contour path for a simple part program produced on a CNC Machining Center.	100% of the students will make a grade of 70% or higher on project #1.	Fall 2020	6 of 6 students (100%) passed the required assignment with a 70% or above. Class average was 93%.	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 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
Perform basic and advanced setup and operation of a CNC lathe and CNC mill.	MTT 255	Student will utilize tools in the CAM library to produce a toolpath.	100% of the students will make a grade of 70% or higher on project 5 in MTT 255 class.	Spring 2021	7 of 7 students (100%) passed the required assignment with a 70% or above. Class average was 84%.	The expected learning level was met and the faculty will continue to evaluate this learning outcome with other classes that deal with CNC programming.

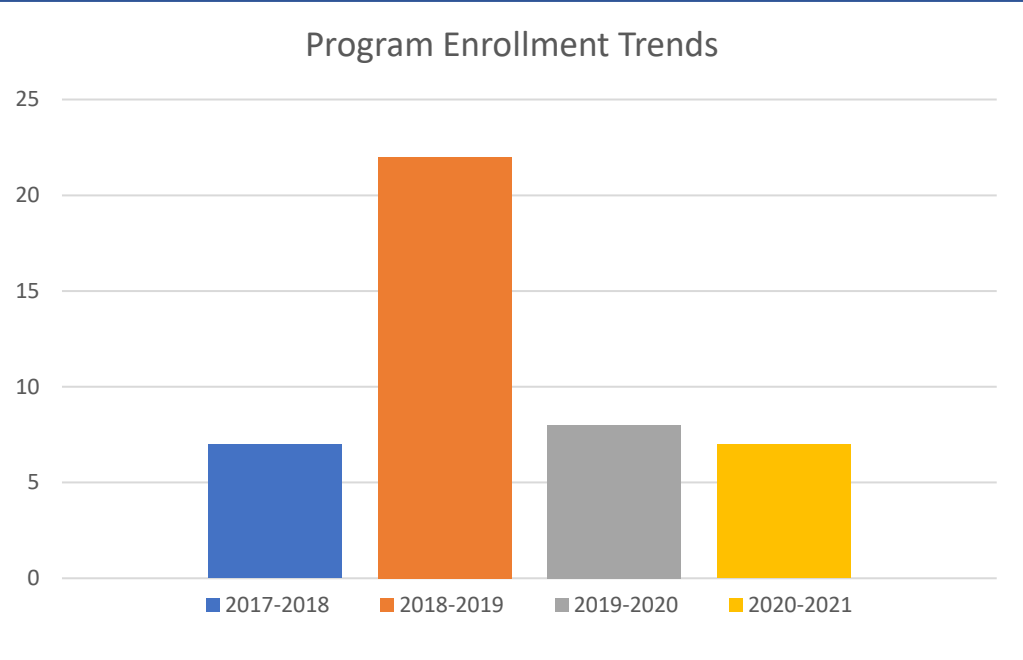
CONTINUOUS STUDENT IMPROVEMENT

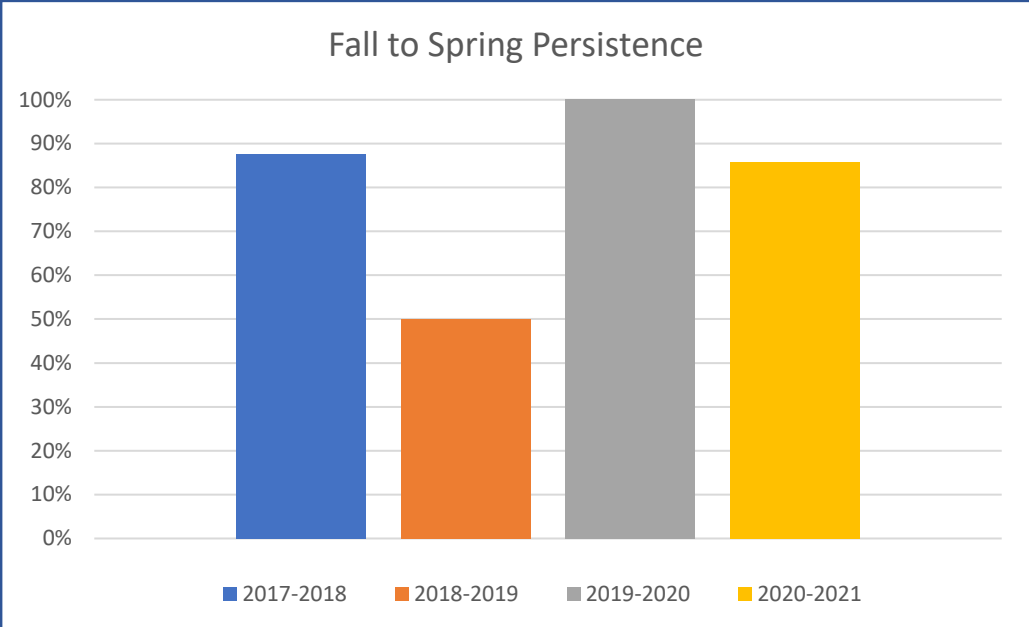
The faculty has been able to identify the short falls in tracking student improvement. The faculty in this cycle has been focusing on more hands-on projects to evaluate student learning outcomes because they feel this approach gives them a more accurate method to determine mastery of the concepts.

The program's one major short fall from last cycle would be the student's problems with the machine interface since the department has purchased different machines. The students tend to remain on one machine to complete their projects without experiencing the different machines in the shop. The faculty will insure that all students are rotated amongst all the machines with different controllers.

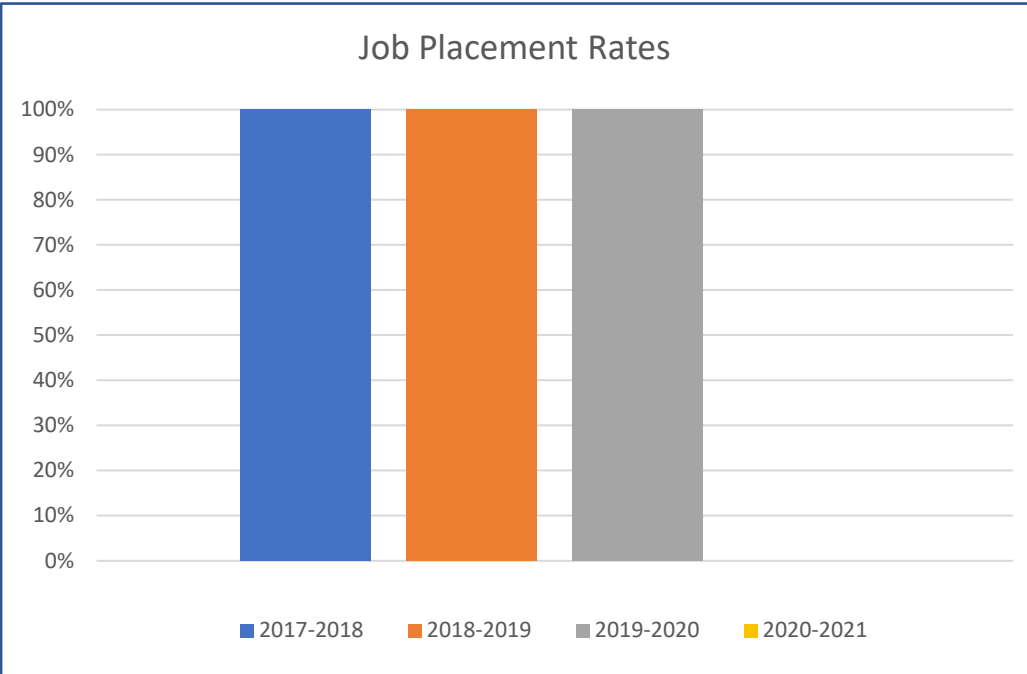
Overall, the MTT program feels that performance will continue to improve. All the MTT students from these different cohorts are working in the field.

PROGRAM VITAL STATISTICS

Indicator	Trend Analysis	Action Plans										
<p style="text-align: center;">Program Enrollment Trends</p>  <table border="1" data-bbox="113 266 1129 922"> <caption>Program Enrollment Trends Data</caption> <thead> <tr> <th>Academic Year</th> <th>Enrollment</th> </tr> </thead> <tbody> <tr> <td>2017-2018</td> <td>7</td> </tr> <tr> <td>2018-2019</td> <td>22</td> </tr> <tr> <td>2019-2020</td> <td>8</td> </tr> <tr> <td>2020-2021</td> <td>7</td> </tr> </tbody> </table>	Academic Year	Enrollment	2017-2018	7	2018-2019	22	2019-2020	8	2020-2021	7	<p>Many of the Computer Numerical Control Programmer 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. The enrollment spike in 2018-2019 was due to the program having an internship with a local company to train their workforce.</p>	<p>The department will make sure the Change of Major forms are done in a timely manner.</p>
Academic Year	Enrollment											
2017-2018	7											
2018-2019	22											
2019-2020	8											
2020-2021	7											

Indicator	Trend Analysis	Action Plans										
<p style="text-align: center;">Fall to Spring Persistence</p>  <table border="1" data-bbox="128 201 1150 824"> <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>88%</td> </tr> <tr> <td>2018-2019</td> <td>50%</td> </tr> <tr> <td>2019-2020</td> <td>100%</td> </tr> <tr> <td>2020-2021</td> <td>85%</td> </tr> </tbody> </table>	Academic Year	Persistence Rate	2017-2018	88%	2018-2019	50%	2019-2020	100%	2020-2021	85%	<p>The persistence rate has mainly been fluctuating between 85% to 100% through this cycle with an outlier at 50%.</p>	<p>The faculty's plan is to query students that do not register for the subsequent Spring semester to determine if a cause can be identified.</p>
Academic Year	Persistence Rate											
2017-2018	88%											
2018-2019	50%											
2019-2020	100%											
2020-2021	85%											

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>~91%</td> </tr> <tr> <td>2018-2019</td> <td>~91%</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	~91%	2018-2019	~91%	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 student also receive this Certificate. Adding 2 more CNC classes that are part of this certificate to the degree is the reason for the increase.</p>	<p>The department will make sure Change of Major forms are done in a timely manner.</p>
Year	Rate (%)											
2017-2018	~91%											
2018-2019	~91%											
2019-2020	100%											
2020-2021	100%											

Indicator	Trend Analysis	Action Plans										
<p style="text-align: center;">Job Placement Rates</p>  <table border="1" data-bbox="130 183 1150 852"> <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 the faculty has with local industries. Most of the companies hire our student while they are still in the first year.</p>	<p>The department 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%											