

2022-23 ACADEMIC PROGRAMS

ADVANCED MANUFACTURING (CNC) - MACHINE TOOL SETUP, OPERATION AND PROGRAMMING (APMTOP)

Associate in Applied Science

In this program, students will demonstrate proficiency in the operation of automated design and machine tool equipment. Competencies in machine operation (CNC), computer aided design and manufacturing (CAD/CAM), manual programming, and processing materials will be developed. In addition, students will hone skills in the manufacturing and troubleshooting of part programs used for advanced manufacturing systems. Students will apply problem-solving skills learned in the program to create innovative solutions for real-world manufacturing challenges in preparation for entry-level positions within the advanced manufacturing field including CNC machining.

Students with technology interests who enjoy working with their hands like gaming, manipulating code, robotics, 3D printing are suited for this line of work.

This is a **high skill** and **high wage** program as defined by the [Michigan Community College Network](#).

Description

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Articulation

Eastern Michigan University, BS degree

Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: <https://www.wccnet.edu/learn/transfer-wcc-credits/articulation-agreements.php>.

Admissions Requirements

College Level Reading and Writing levels of 6 and Math Level 2 are required.

Students must reach Math Level 4 prior to enrolling in NCT 121.

Course Requirements

First Semester

Class	Title	Minimum Credits
MEC 101	Blueprint Reading for Manufacturing	2
NCT 100	Foundation Concepts for Manufacturing (CNC)	3
NCT 120	Introduction to 2D CAD CAM Programming and Applications	2
Elective	Math Elective(s)	3
Elective	Art/Human. Elective(s)	3
Total		13

Second Semester

Class	Title	Minimum Credits
MEC 100	Materials and Processes	3
NCT 101	Introduction to Computerized Machining (CNC) - I	2
NCT 110	Introduction to Computerized Machining (CNC) - II	2
Elective	Restricted Elective: Students may choose any ELE, MEC, NCT, ROB course not already listed.	2
Elective	Nat. Sci. Elective(s)	3
Total		12

Third Semester

Class	Title	Minimum Credits
NCT 123	2D CAD CAM CNC Programming for Mills and Lathes	2
Elective	Restricted Elective: Students may choose any ELE, MEC, NCT, ROB course not already listed.	2
Elective	Writing Elective(s)	3
Elective	Speech/Comp. Elective(s)	3
Elective	Soc. Sci. Elective(s)	3
Total		13

Fourth Semester

Class	Title	Minimum Credits
ELE 111	Electrical Fundamentals	4
MEC 201	Mechanisms	2
NCT 121	Manual Programming and NC Tool Operation	4
NCT 201	Geometric Dimensioning and Tolerancing (GD&T)	2
Total		12

Fifth Semester

Class	Title	Minimum Credits
NCT 221	Advanced Manual Programming and NC Tool Operation	4
NCT 244	Advanced Manufacturing Capstone (CNC)	3
WAF 103	Introduction to Gas Tungsten Arc Welding	2
Elective	Restricted Elective: Students may choose any ELE, MEC, NCT, ROB course not already listed.	3
Total		12

Total Credits Required: 62**Footnotes**

Students may elect to take optional courses to meet MTA. Please refer to the WCC MTA Transfer Agreement web page <https://www.wccnet.edu/learn/transfer-wcc-credits/mta.php> for more information.

Accurate as of 12/02/2022 Information is subject to change without notice.