

ADVANCED MANUFACTURING

Fundamentals (150 hrs.) 101

1. Safety
2. Shop Mathematics / Blueprints
3. Measuring equipment
4. Support Tools
5. Workplace Methodologies

This Course covers basic safety measures observed while working in a manufacturing environment. Students will cover common shop calculations and how to read a part print. Associated measuring equipment that is required to check final fitment of the part against the print will be introduced as well. Finally, a look at workplace methodologies and work flow inside a modern manufacturing facility



Course #	Start	Days	Hours	Location	Cost
101	Oct. 4	M-T-W-Th	6:00-9:00	Hackensack Room 108	\$1500



Image by Robert Wilkos from Pixabay



Mill Basic (150 hrs.) 102

1. Anatomy of the Mill
2. Operation
3. Cartesian Coordinates
4. Feeds and Speed
5. Materials

Students will be introduced to a milling machine and its anatomy, along with a thorough review of the machine parts and how they work. A fundamental understanding of the cartesian coordinates and how feeds and speed effect materials and accuracy of a part. The operation with be covered at an introductory level to be built on in later courses.

Lathe Basic (150 hrs.) 103

1. Anatomy of the Lathe
2. Operation
3. Cartesian Coordinates
4. Feeds and Speeds
5. Materials

Students will be introduced to a lathe and its anatomy, along with a thorough review of the machine parts and how they work. A fundamental understanding of the cartesian coordinates and how feeds and speed effect materials and accuracy of a part. The operation with be covered at an introductory level to be built on in later courses.

CNC / CadCam Intro (250 hrs.) 104

1. What is CNC
2. Introduction to CNC machine tools
3. G-code programing
4. Cad/Cam (Computer aided design/ Computer aided machining)
5. Set up
6. Operation

Students will be taught an introduction into basic parametric modeling and how a solid model is designed with machining in mind. We will cover what a computer numerical control machine is and how it works as well as the specific computer language used to drive the motion. Computer Aided Machining will be covered so the student may link the CAD/CAM relationship to the CNC machine and how they all work in harmony.

Sources: <https://www.toolingu.com/>
 Machinist Handbook
 Career Development Course work USAF
<https://www.autodesk.com/>
<https://academy.titansofcnc.com/>

Late Fee: Students registering for the first time, or current students signing for classes on or after the first day of class will be charged \$50 for late registration.

Course start dates, location, and nights are subject to change. Please check website for updates or call 201-343-6000, ext. 2289.