



PRECISION Machining Institute

Ohio Registration # 12-07-1996T

38228 Western Parkway

Willoughby, Oh 44094

(440) 951-2824

www.learntomachine.com

2023

WELCOME TO PRECISION MACHINING INSTITUTE

Precision Machining Institute is located in The Heisler Tool Company at 38228 Western Parkway, Willoughby Ohio where classes and lab projects will be conducted.

The Institute has partnered with the NTMA to offer the most comprehensive 16 week precision machining course in the country.

Each student will be enrolled in NTMA-U for the on-line classroom courses combined with hands on machining for the goal of the student attaining an entry level/class "C" machinist position.

Upon completion of the course each student will receive a machinist tool box, micrometers, dial calipers, 6 inch scale, edge finder and much more.

All items the student makes in the lab portion will be theirs to keep, such as grinding vise, parallels, 1-2-3 blocks, etc..

Finally, the student will have the opportunity to continue the NTMA-U online classes at a discounted price.

The complete course from NTMA-U is worth twenty one (21) credit hours at the University of Akron.

Precision Machining Institute is registered with the State Board of Career Colleges and Schools Registration # 12-07-1996T.

Precision Machining Institute is a member of the NTMA and The Ohio Association of Career Colleges and Schools.

SCHEDULE OF FEES

COURSE: GENERAL/CONVENTIONAL MACHINING

Clock Hours: 352 (16 Weeks)

Registration Fee:	\$ 50.00
Course Tuition:	\$6,950.00
Books/Supplies:	(Included)
Total:	\$7,000.00

Payment Terms: Payment in full prior to class starting

Restart charges may apply for a student who dropped or was dismissed from a previous class and enrolls in a new class. Charges may be pro-rated on an individual basis. Credit may be given for training completed in the prior class at The Precision Machine Institute.

NOTE! There will be a \$35.00 charge for any check returned NSF.

PROGRAM START DATES AND SCHOOL CALENDAR

PRECISION MACHINING INSTITUTE

MORNING CLASSES

Monday thru Thursday 8am – 12:00 NOON

January 3, 2023 thru April 27, 2023

May 1, 2023 thru August 24, 2023

September 5, 2023 thru December 28, 2023

**All dates and times subject to change without notice

Precision Machining Institute will observe the following holidays:

2023

New Years
Good Friday
Memorial Day
Independence Day
Labor Day
Thanksgiving
Christmas Eve
Christmas
New Years Eve

NOTE! On scheduled training weeks where a holiday falls on Monday thru Thursday, that class may be made up. Dates to be determined.

OHIO STATE BOARD OF CAREER COLLEGES AND SCHOOLS
ENROLLMENT AGREEMENT (CLOCK HOUR PROGRAMS)

Precision Machining Institute
38228 Western Parkway
Willoughby, Oh 44094
(440) 951-2824

Student: _____ Date: _____

Address: _____ City: _____ State: _____ Zip: _____

Phone Number: _____ S.S. Number: _____

Email Address: _____

I am hereby enrolling in the following academic program and my enrollment is subject to the terms and conditions stated in this enrollment agreement.

Program Name: GENERAL/CONVENTIONAL MACHINING Start Date _____

Program length: 352 Clock Hours. This program is normally completed in 16 calendar weeks

Tuition and Fees for Current Term:

Registration Fee.....	\$ 50.00
Book Fee.....	\$ -0-
Laboratory Fee.....	\$ -0-
Tuition.....	\$ <u>6,950.00</u>
Total Cost.....	\$ <u>7,000.00</u>

Payment:

All tuition and fees are payable for one quarter, semester or school term only. Payment is due prior to the start of classes each term.

Total projected cost of program at current tuition and fee rates: \$7,000.00

Tuition and fee charges are subject to change at the schools discretion. Any tuition or fee increases will become effective for the school term following student notification of the increase.

Cancellation and Settlement policy

This enrollment agreement may be canceled within five calendar days after the date of signing provided that the school is notified of the cancellation in writing. If such cancellation is made, the school will promptly refund in full all tuition and fees paid pursuant to the enrollment agreement and the refund shall be made no later than thirty days after cancellation. This provision shall not apply if the student has already started academic classes.

Refund Policy

If the student is not accepted into the training program, all monies paid by the student shall be refunded. Refunds for books, supplies and consumable fees shall be made in accordance with Ohio Administrative Code section 3332-1-10.1. There is one (1) academic term for this program that is 352 clock hours in length. Refunds for tuition and refundable fees shall be made in accordance with following provisions as established by Ohio Administrative Code section 3332-1-10:

OHIO STATE BOARD OF CAREER COLLEGES AND SCHOOLS
ENROLLMENT AGREEMENT

- (1) A student who withdraws before the first class and after the 5-day cancellation period shall be obligated for the registration fee.
- (2) A student who starts class and withdraws before the academic term is 15% completed will be obligated for 25% of the tuition and refundable fees plus the registration fee.
- (3) A student who starts class and withdraws after the academic term is 15% but before the academic term is 25% completed will be obligated for 50% of the tuition and refundable fees plus the registration fee.
- (4) A student who starts class and withdraws after the academic term is 25% complete but before the academic term is 50% completed will be obligated for 75% of the tuition and refundable fees plus the registration fee.
- (5) A student who starts class and withdraws after the academic term is 50% completed will not be entitled to a refund of the tuition and fees.

The school shall make the appropriate refund within thirty days of the date the school is able to determine that a student has withdrawn or has been terminated from a program. Refunds shall be based upon the last date of a student's attendance or participation in an academic school activity.

Complaint or Grievance Procedure

All student complaints should be first directed to the school personnel involved. If no resolution is forthcoming, a written complaint shall be submitted to the director of the school. Whether or not the problem or complaint has been resolved to his/her satisfaction by the school, the student may direct any problem or complaint to the Executive Director, State Board of Career Colleges and Schools, 30 East Broad Street, Suite 2481, Columbus, Ohio, 43215, Phone 614-466-2752; toll free 877-275-4219.

I acknowledge that I have received a school catalog and agree with the school policies and procedures stated. I acknowledge that I have received and read a copy of this enrollment agreement.

Applicant signature: _____ Date: _____

Parent or Guardian (if applicable): _____ Date: _____

School representative: _____ Date: _____

COURSE SCHEDULE

WEEK 1 AND 2

SAWS – Horizontal and Vertical Ban Saws using tape measure and six (6) inch scale

CLEAN AND DEBURR PARTS - using belt sanders

LAYOUT ANGLES AND RADII – Saw cut and belt sand – Dykem for layout

DRILL PRESS – Layout, drill, counter sink, tap using tapping head

Note! All work will be performed on a variety of materials, i.e. Steel, CRS and HRS, Aluminum, Tool Steel, Stainless Steel and Plastic.

WEEK 3, 4, AND 5

BRIDGEPORT

- Clean and lubricate
- Indicate head
- Stone and clean table and vise
- Indicate vise
- Use edge finder, dials on machine and digital readouts
- Use center drill, drill, tap, ream, counter bore and counter sink
- Use end mill for milling with O.D. and end
- Use fly cutter
- Use inserted cutters

WEEK 6 AND 7

SURFACE GRIND

- Clean machine, lubricate
- Mount and balance wheel – ring wheel
- Dress wheel – bottom and sides
- Grind on chuck – flat pieces, plunge grind and oscillate
- Grind parts in vise
- Side wheel grinding
- Use cut off wheel
- Dress angle
- Dress radius – concave and convex

WEEK 8

INSPECTION

- Clean surface plate
- Inspection equipment
 - Indicators, Height Stands, Cadillac Gage, Comparators, Micrometers inside and outside, Groove, Flange, Electronic Indicator, Radius Gages, Plug Gages, and JO Blocks
- Squareness and parallelism
- Center distance

WEEK 9, 10, AND 11

LATHE

- Clean and lubricate
- Set tools, mount chuck, collet
- Bore and turn jaws
- Face, turn, chamfer, groove I.D. and O.D. and face
- Drill, bore, tap and ream
- I.D. and O.D. form
- I.D. and O.D. thread
- Single point thread
- Knurl

WEEK 12, 13, 14, AND 15

REVIEW

- Weeks 1 thru 11

WEEK 16

ASSEMBLY

PREPARE

- Projects
- Resume
- Tool boxes
- Folders with documentation

ADDITIONAL CURRICULUM

Students start cutting, drilling, tapping, milling, turning, and threading practice material

FIELD TRIPS

- To be determined

DOCUMENTATION

- Metric conversion
- Metric tolerances shafts, bores
- Fractions
- Decimals
- Drill chart – Tap chart

PRECISION MACHINING INSTITUTE

COURSE DESCRIPTIONS WITH CLOCK HOURS

96 Class Hours/256 Lab Hours

COURSE	COURSE TITLE	CLASS HOURS	LAB HOURS
101	Intro to Shop Math	26	
102	Intro to Blue Print	26	
103	Machine Tool Technology	36	
104	Job Planning, Review	8	
201	Saws, Deburring		28
301	Milling Machines		72
401	Drill Press		8
501	Lathe		50
601	Surface Grind		44
701	Hone		4
801	Bench		20
901	Inspection		30



GENERAL EDUCATION

SEMESTER 1 – 96 Hours of training (6.0 hours per week x 16 weeks)

MACHINE TOOL TECHNOLOGY ESSENTIALS

Intro to shop MATH (approx 26 hours)

Intro to Blueprint (approx 26 hours)

MACHINE TOOL TECHNOLOGY THEORY (approx 36 hours)

Section 1 Introduction to Machining

Unit 1 Introduction to Machining

Unit 1 Introduction to Safety

Unit 2 Careers in Machining

Unit 2 Measurement Systems and Machine Tool Math Overview

Unit 3 Workplace Skills

Unit 3 Semi-Precision Measurement

Unit 4 Precision Measurement

Section 2 Measurement, Materials and Safety (*NIMS Measurement, Material and Safety)

Unit 5 Quality Assurance, Process Planning and Quality Control

Unit 6 Metal Composition and Classification

Unit 7 Heat Treat of Materials

Unit 8 Maintenance, Lubrication and Cutting Fluid Overview

Section 3 Job Planning, Bench work and Layout (*NIMS Job Planning, Bench Work and Layout)

Unit 1 Understanding Drawings, only a few chapters of the NTMA Blue Print Book-Beginner

Unit 2 Layout

Unit 3 Hand Tools

Unit 4 Saws and Cutoff Machines

Unit 5 Offhand Grinding

Unit 6 Drilling, Threading, Tapping and Reaming

Section 4 Drill Press (*NIMS Drill Press Skills Level I)

Unit 1 Introduction to the Drill Press

Unit 2 Tools, Tool-holding and Work-holding for the Drill Press

Unit 3 Drill Press Operation



**NATIONAL TOOLING
AND MACHINING ASSOCIATION
OFFICIAL COURSE OUTLINE**

SUBJECT AREA TITLE	APPLIED INDUSTRIAL TECHNOLOGY
COURSE TITLE	MANUFACTURING SKILLS I
SUBJECT AREA CODE-COURSE NUMBER	ATMT-1100
COURSE CREDIT HOURS	00

I. DESCRIPTION OF COURSE:

A. CATALOG DESCRIPTION:

A study that stresses the relationship of engineering drawings as related to the manufacture of a working part. Communication of idea's or fact as related to the manufacturing environment, which includes the process of delivering those ideas in an understandable manner to your peers. Topics of study include lines, views, dimensioning, calculating cutting planes, fraction to decimal conversion, constructing a sketch of a workable engineering drawing, freehand lettering, freehand sketching, auxiliary sections, symbols, and broken lines.

B. LECTURE HOURS:	44
C. LABORATORY HOURS:	00
D. OTHER REQUIRED HOURS:	00
E. COURSE SEMESTER	01

II. PERFORMANCE OBJECTIVES:

Upon successful completion of ATMT 1100 BASIC MANUFACTURING SKILLS I, the student should be able to be proficient in specific job planning related operations in particular:

- Understand Engineering Drawings as a universal language.
- Practice industrial communication practices used to prepare hard copy drawings and sketches.
- Identify National engineering room standards.
- Demonstrate common elements used to master drawing standards and principals as well as their application.
- Define engineering drawing reproduction processes and print types by sketches.
- Demonstrate the characteristics and features of linear measurements and basic units of measurements.
- Understand the required number of views that provides adequate information and produce a working part.

III. TOPICAL OUTLINE:**A. Drafting Basics**

1. Sketching and Layout
2. Manufacturing a shop sketch
3. Construction and arrangement of three views
4. Title box content

B. Shop calculations

1. Calculating coordinates
2. Calculations using decimal fractions
3. Calculation of roots, Powers, and percentages
4. Size & location dimensions
5. Calculating job lead-time
6. Percentage calculations and metric conversions

C. Dimensioning

1. Baseline datum dimensioning
2. Metric dimensions and views
3. Special dimension representation

D. Quality Control Management

1. JIT inventory (Just In Time)
2. Precision, and simple measuring devices
3. Tolerancing

E. Blue Print Construction

1. Creating and manipulating data details and assembly drawings.
2. Orthographic, Oblique, and Isometric views
3. Cutting planes, full, half, and partial sections
4. Construction and arrangement of one & two views
5. Auxiliary views

IV. METHODS OF EVALUATION:

- A. Weekly programs
- B. Class participation
- C. Midterm Exam
- D. Final Exam

V. RESOURCES:

Basic Blueprint Reading and Sketching, NTMA