WILSON TALENT CENTER

EDUCATE. INNOVATE. ACCELERATE.

Our mission is to provide students with the essential knowledge, skills, and work habits to excel in their careers and future learning.

Course	Precision Machining Technology
National Career Cluster:	Manufacturing
Michigan Career Pathway:	Engineering, Manufacturing & Industrial Technology
Instructor:	Rick Castaneda
Instructional Assistant	Randall Easterling
Contact Information	e-mail: rcastaneda@inghamisd.org e-mail: reasterling@inghamisd.org 517-244-1376
Types of Credit	Fourth year math credit Elective Credit *Credit recommended by WTC; awarded by sending school*
Articulation Agreements	Lansing Community College Davenport University Northern Michigan University

Special Requirements/Program Prerequisites

- Good attendance
- Good basic math skills
- First year algebra (suggested)
- Long pants at all Times NO SHORTS
- Safety glasses must be worn
- Hard-soled shoes

Program Description

The opportunities for students in the Precision Machining Technology (PMT) program include: learn to interpret blueprints and learn the skilled craft of precision machining needed not only in the automotive and aircraft industry but also in the manufacturing of medical implants and instruments. Manufacturing is becoming more highly technical and is fast becoming a laboratory environment with employees tracking production, working in quality teams, using sophisticated computer applications, technical reading and academic skills, as well as problem solving, and teamwork skills. Students will learn to operate sophisticated manual and computerized drills, lathes, mills, and grinders using CAM, Computer-Aided Manufacturing software programs. Students can prepare for a career in precision machining and/or continue their education after high school in technical school or college. Students may qualify for college credit and or national machine tool certification through the National Institute for Metalworking Standards.

Career exploration, employability skills, technology skills, and the academic skills necessary to succeed in the workplace and in advanced education are integrated into the program curriculum.

Course Topics (Two Year Program)

- Shop, Personal, and Equipment Safety
- Bench Work, Hand Tools, Fasteners, and Layout
- Blueprint Reading – Includes GD&T
- Machinery's Handbook
- Metrology – Includes SPC
- Machine Maintenance
- Resume/Portfolios
- Metallurgy
- Power Saws
- Grinders
- Drill Press
- Manual Lathe
- Manual Mill
- Surface Grinder
- Quality Assurance
- Shop Floor (Intuitive) Programming
- CNC Programming
- Computer Aided Manufacturing (CAM)
- CNC Lathe
- CNC Mill

Exit Outcomes

- Students will operate sophisticated manual and computerized drills, lathes, mills, and grinders using CAM, Computer-Aided Manufacturing software programs.
- Students prepare for a career in precision machining and/or continue their education after high school in technical school or college.
- Students may qualify for college credit and or national machine tool certification through the National Institute for Metalworking Standards.
- Students will participate in career exploration, learn employability skills, technology skills, and the academic skills necessary to succeed in the workplace and in advanced education are integrated into the program curriculum.
- Students in the PMT program may participate in two student organizations, Skills USA and Michigan Industrial Technical Education Society.

Work Based Learning Opportunities

- Guest speakers
- Field trips
- Job shadow
- Unpaid work experience
- Work Based Learning

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Grading Policy

Item	Points/Percentage
Work Habits (includes attendance)	35%
Academic	32%
Lab	33%
Total:	100%

- *Work Habits: Points based upon your attitude, quality, professionalism, motivation, resources, and attendance.*
- *Academic (Tests, quizzes, and Worksheet grades): Your instructor may choose to give you a grade for all classroom work you take for the program.*
- *Lab (Project Grades): You will be given a grade for every completed project that you work on. This project may be an assignment that you made with hand tools, power tools, machinery, or class group project.*

A = 93-100%	**B = 83-86%**	**C = 73-76%**	**D = 63-66%**
A- = 90-92%	**B- = 80-82%**	**C- = 70-72%**	**D- = 60-62%**
B+ = 87-89%	**C+ = 77-79%**	**D+ = 67-69%**	**E = 59 or below**

Student Code of Conduct

Good student conduct is important for maintaining a healthy course environment. Students enrolled in the Precision Machining/CAM program are expected to:

- Exercise self-control
  - Use courteous language
  - Resolve conflict in a mature manner
  - Be appropriately dressed and groomed
- Demonstrate a positive attitude
  - Take a leadership role
  - Be polite
  - Be cooperative
- Respect the rights and feelings of others
  - Behave in a manner that does not disrupt others
  - Treat others with courtesy and respect (i.e., put oneself in the place of the other person, whether that person is another student, teacher, parent/guardian, community person, administrator, lunchroom or custodial worker, or any other person on campus)
- Take responsibility for school property
  - Respect the building, grounds, and property
  - Conserve resources in the classroom and lab
- Support the learning process
  - Attend all classes regularly and on time
  - Be prepared for class (i.e., bring assignments, books, and supplies)
  - Listen carefully to instructions
  - Participate in class activities

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