Instructor:	**Instructor:**
Email:	**Email:**
Classroom Hours: Mon-Fri 9:00 am-2:00 pm	***Total Class/Lab Hours: 300***

Course Objectives:

This course is designed to prepare students for middle-skilled to multi-middle-skilled manufacturing careers.

Course Description:

This 15-week, 300-hour course provides hands-on training in manufacturing readiness, forklift (hi-lo) operation, CNC (Computer Numerical Control) machining, industrial robotics, and welding. IMTP also provides foundational training in Technical Mathematics, Blueprint Reading, Financial Literacy, Industrial Safety, Computer Aided Drafting, Advanced Manufacturing Theory, and Soft Skills Training. Participants gain a broad skill set and earn certifications that open doors to various opportunities, such as apprenticeships, further education, skilled trade entry-level positions, and other manufacturing-related careers.

Course Materials (provided):

- Tooling U Curriculum
- Jack Martin – Pre Apprenticeship Curriculum and Textbook set
- SME CMFgA Curriculum

Grading Scale:

90 –100 = excellent
80 – 89 = exceeds expectations
70 – 79 = meets expectations
69 or below: below expectations

The final grade is based on cumulative total of exams, quizzes, homework, labs, and student professionalism.

Grading Policy:

Professionalism (includes attendance, teamwork, dress code, etc.):	20% of Final Grade
Labs & Hands-on Assignments & Projects:	30% of Final Grade
Homework & Quizzes:	10% of Final Grade
Exams:	40% of Final Grade

Student must maintain 70% in all their classes. If a student's academic performance falls below 70%, an academic warning will be issued. If the academic performance continues to fall below 70%, then the student will be placed on a one-week academic probation. At the end of the academic probation, the student must have achieved 70% or be terminated.

Attendance

Absent students will receive no credit for the day. Students are responsible for viewing the class recording for the missed time and completing any assignments/labs. Professionalism points will also be deducted for late/tardy students. Students whose absence is due to valid family, legal, or medical reasons notify their specialist and instructor as early as possible. Proper written documentation must be provided in a timely fashion when applicable. Students who are absent for three consecutive days will be terminated.

The following is a tentative schedule for the course. The instructor reserves the right to make schedule changes based on the needs of the students in

Program Learning Outcomes
By the end of the program, participants will be able to:

- Demonstrate safe work practices in industrial environments.
- Operate industrial forklifts and other material-handling equipment.
- Set up, adjust, and operate CNC machines and robotic systems.
- Read blueprints and follow specifications to produce parts.
- Use precision measuring instruments (micrometers, calipers, templates, fixtures).
- Perform machining operations using lathes and milling machines.
- Apply welding techniques in multiple positions using GMAW (MIG) equipment.
- Demonstrate employability skills including resume writing, financial literacy, and workplace professionalism.

Curriculum Modules

Module 1: Professional Development (8 hours)

- Workplace professionalism, communication, and teamwork
- Resume writing and job readiness skills

Module 2: Financial Literacy (8 hours)

- Budgeting and money management
- Understanding credit and financial planning

Module 3: Safety & Compliance (32 hours)

- **Forklift Operator Training (20 hours)**
  - Safe forklift operation and certification requirements
  - Hands-on practice in industrial environments
  - **Certification:** Forklift Operator
- **OSHA 10-Hour General Industry (12 hours)**
  - Introduction to OSHA standards
  - Workplace safety regulations and hazard awareness
  - **Certification:** OSHA 10

Module 4: Manufacturing Foundations (100 hours)

- **Introduction to Manufacturing (50 hours)**
  - Overview of industrial manufacturing processes and careers
  - Materials, tools, and basic shop practices
- **Shop Math (50 hours)**
  - Arithmetic, fractions, decimals, and percentages
  - Measurement conversions and applied geometry
  - Precision measurement tools (calipers, micrometers)

Module 5: Advanced Technical Training (148 hours)

- **CNC Machining (70 hours)**
  - Setup, programming, and operation of CNC lathes and mills
  - Tool alignment and sequencing
  - Measurement and quality checks
- **Robotics (48 hours)**
  - Fundamentals of robotic systems in manufacturing
  - Programming and troubleshooting robotic operations
- **Welding (30 hours)**
  - Safety and setup of welding equipment
  - Hands-on practice with gas metal arc welding (MIG)
  - Welding in flat, vertical, and overhead positions