

# TOOL AND DIE APPRENTICESHIP

## Overview

### Tool and Die Apprenticeship

**Program Code: 50-439-3**

For more information: [wctc.edu/tool-appr](http://wctc.edu/tool-appr) (<http://www.wctc.edu/tool-appr/>)

Tool and die makers create precision tools or dies that are used to form, cut and shape metal and other materials. They make jigs and fixtures, which hold metal while it is bored, stamped or drilled, along with gauges and other devices. Receive high-quality, hands-on classroom instruction that complements on-the-job apprenticeship training critical for success in the industrial trades.

**The minimum required course grades and program grade point average (GPA) for students under this catalog are:**

Core Courses = C  
Program GPA = 2.0

**Build your degree along a career pathway.** Start with a couple of courses or an entry-level credential to enter the job market in your area of interest, then continue with higher credentials on your educational path for job advancement and higher wages.

## Career Pathway

1. Tool and Die Apprenticeship
2. Technical Studies - Journeyworker

Additional details regarding Associated Builders and Contractors (ABC) apprenticeships:

- Contact Associated Builders and Contractors, Inc. (ABC) of Wisconsin, 5330 Wall Street, Madison, WI 53718; [www.abcwi.org/apprenticeship](http://www.abcwi.org/apprenticeship) (<http://www.abcwi.org/apprenticeship/>).
- Complete the ABC application packet, which will include qualifying test information.
- After application approval, a list of potential employers will be provided.
- Obtain employment for apprenticeship training.

Application to WCTC is not necessary by the student.

## Learning Outcomes

### Program Outcomes

1. Inspect parts and materials.
2. Operate milling machines, including manual and/or CNC controlled.
3. Operate drilling machines, including manual and/or CNC controlled.
4. Operate turning machines, including manual and/or CNC controlled.
5. Operate precision grinding machines, including manual and/or CNC controlled.
6. Operate cut-off machines, including manual and/or CNC controlled.
7. Apply metallurgical principles to materials and work process.

8. Assemble parts according to specifications.
9. Design jigs and fixtures.
10. Produce dies for a variety of machining and manufacturing operations.

## Critical Life Skills

To help our students prepare for success in a workplace and society that is **increasingly global, multicultural and collaborative**, we provide curricular and co-curricular opportunities to develop critical life skills. WCTC is committed to teaching all students the following skills:

- **Communication:** Demonstrate appropriate communication.
- **Critical Thinking/Problem Solving:** Demonstrate critical thinking skills to analyze situations and solve problems.
- **Relationships:** Demonstrate effective interpersonal skills.
- **Self-management:** Demonstrate responsible and respectful behavior.

## Required Courses

Code	Title	Credits
<b>Core Courses</b>		
420-504	Safety Machine Tool Apprentice	0.5
420-505	OSHA Machine Trade Apprentices	0.5
420-551	Engineering Drawings Appr	1
Approved Substitutes: 420-520, 420-520A		
420-552	Machine Process 1 Apprentices	1
Approved Substitutes: 420-520, 420-520B		
420-553	Machine Tool Theory 1 Appr	1
Approved Substitutes: 420-520, 420-520C		
420-554	GD&T Apprentices	1
Approved Substitutes: 420-521, 420-521A		
420-555	Machine Process 2 Appr	1
Approved Substitutes: 420-521, 420-521B		
420-556	Machine Tool Theory 2 Appr	1
Approved Substitute: 420-521, 420-521C		
439-561	Solidworks Tool & Die Appr	1.75
Approved Substitutes: 439-575, 439-575B		
439-562	Die Design	1.75
Approved Substitutes: 439-570, 439-570B		
439-563	Comp Assist Prog T&D Appr	1.75
Approved Substitutes: 439-570, 439-570A		
439-564	Moldmaking	1.75
Approved Substitutes: 439-575, 439-575A		
<b>General Studies</b>		
804-504	Industrial Math I	1
Approved Substitutes: 804-304 OR 804-107 OR 804-113 OR 804-114 OR 804-115		
804-505	Industrial Math II	1
Approved Substitutes: 804-305 OR 804-107 OR 804-113 OR 804-114 OR 804-115		
<b>Total Credits</b>		<b>16</b>

## Full-time Plan

### First Year

Fall Term 1		Credits
420-551	Engineering Drawings Appr	1
420-552	Machine Process 1 Apprentices	1
420-553	Machine Tool Theory 1 Appr	1
804-504	Industrial Math I	1
<b>Credits</b>		<b>4</b>

### Spring Term 1

804-505	Industrial Math II	1
420-554	GD&T Apprentices	1
420-555	Machine Process 2 Appr	1
420-556	Machine Tool Theory 2 Appr	1
<b>Credits</b>		<b>4</b>

### Second Year

#### Fall Term 1

420-504	Safety Machine Tool Apprentice	0.5
439-561	Solidworks Tool & Die Appr	1.75
439-562	Die Design	1.75
<b>Credits</b>		<b>4</b>

#### Spring Term 1

420-505	OSHA Machine Trade Apprentices	0.5
439-563	Comp Assist Prog T&D Appr	1.75
439-564	Moldmaking	1.75
<b>Credits</b>		<b>4</b>
<b>Total Credits</b>		<b>16</b>