

TOOL AND DIE MAKING

Overview

Tool and Die Making Technical Diploma

Program Code: 32-439-1

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

A tool and die maker's craft is an exacting one; the parts they make enable machines to produce various products for different industries. In this program, use state-of-the-art equipment to learn complex and conventional machining, computer numerical control machining and grinding operations. Develop skills in precision work, and make molds/dies.

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

Core Courses = C

General Studies 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. CNC Setup Technician Technical Diploma 23
2. Machine Tool Operation Technical Diploma 33
3. Tool and Die Making Technical Diploma 60

Related Certificate that can be earned along the way.

- CNC Operator Technical Certificate (<https://catalog.wctc.edu/programs/cnc-operator/>)

Learning Outcomes

Program Outcomes

1. Apply advanced safety practices in the machine shop.
2. Interpret advanced industrial/engineering drawings.
3. Apply precision measuring methods to part inspection.
4. Perform advanced machine tool equipment set-up and operation.
5. Perform advanced programming, set-up and operation of CNC Machine Tools.
6. Perform advanced tool, die, and mold 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

Listed below are the required courses for the program. To view the recommended sequence for taking courses click on the plan of study tab(s) above. See your Academic Advisor to design a full-time or part-time plan that works for you!

View your **Program Matrix** to find out when each course will be offered (term and time of day).

Code	Title	Credits
Core Courses		
420-126	Machine Tool Theory	1
Approved Substitute: 420-326		
420-127	Machine Tool Theory 2	1
Approved Substitute: 420-128		
420-130	Industrial Blueprint Reading 1	2
Approved Substitute: 420-330		
420-186	CNC Machining Ctr Programming	2
Approved Substitute: 420-386		
420-316	CNC Machining Center Operation	2
420-317	CNC Turning Center Operation	2
420-320	Machine Tool Operation 1	4
420-321	Machine Tool Operation 2	4
420-323	Machine Tool Operation 3	4
420-324	Machine Tool Operation 4	4
420-387	CNC Turning Center Programming	2
420-388	Computer Assist Prog/CNC	2
420-399	Wire EDM Fundamentals	1
439-181	SolidWorks for Tool Design 1	2
Approved Substitute: 420-331 or 439-380		
439-314	Mold Design	1
439-324	Die Design	1
439-331	Tool and Die Moldmaking 1	5
439-332	Tool and Die Moldmaking 2	5
439-341	Tool and Die Stamping 1	5
439-342	Tool and Die Stamping 2	5
General Studies		
804-107	College Mathematics	3
Approved Substitutes: 804-115 OR 804-116 OR 804-118 OR 804-195 OR 804-198 OR (804-304 AND 804-305)		
801-311	Communication in the Workplace	2
Approved Substitutes: 801-136 OR 801-196		
Total Credits		60

Full-time Plan

First Year

Summer Term Credits

804-107	College Mathematics	3
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	Credits	3
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Fall Term 1

420-130	Industrial Blueprint Reading 1 <small>This course will run 16 weeks.</small>	2
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420-320	Machine Tool Operation 1	4
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420-126	Machine Tool Theory	1
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	Credits	7
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Fall Term 2

420-316	CNC Machining Center Operation	2
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420-321	Machine Tool Operation 2	4
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	Credits	6
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Spring Term 1

420-186	CNC Machining Ctr Programming <small>This course will run 16 weeks.</small>	2
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420-127	Machine Tool Theory 2	1
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420-323	Machine Tool Operation 3	4
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	Credits	7
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Spring Term 2

420-317	CNC Turning Center Operation	2
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420-324	Machine Tool Operation 4	4
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	Credits	6
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Second Year

Summer Term

439-181	SolidWorks for Tool Design 1	2
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420-387	CNC Turning Center Programming	2
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	Credits	4
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Fall Term 1

420-388	Computer Assist Prog/CNC <small>This course will run 16 weeks.</small>	2
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439-331	Tool and Die Moldmaking 1	5
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439-314	Mold Design	1
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	Credits	8
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Fall Term 2

420-399	Wire EDM Fundamentals	1
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439-332	Tool and Die Moldmaking 2	5
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	Credits	6
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Spring Term 1

439-341	Tool and Die Stamping 1	5
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439-324	Die Design	1
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	Credits	6
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Spring Term 2

439-342	Tool and Die Stamping 2	5
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801-311	Communication in the Workplace	2
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	Credits	7
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	Total Credits	60
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