

# MACHINE TECHNOLOGIES

## Associate of Applied Science Degrees

Advanced Manufacturing Center- Manufacturing Pathway  
CCD.edu/Machining

### CNC Manufacturing

This program prepares you with the entry-level skills necessary to perform tasks of developing 3D programming to operate a Computer Numerical Controlled (CNC) machining center.

#### PROGRAM ADMISSION REQUIREMENTS

You must meet the minimum assessment scores or prerequisites required for general education courses in the program. Refer to the course descriptions section of this catalog for course prerequisites. You may take individual courses, if the course prerequisites are met, prior to being accepted into this program.

#### COURSE MAP

##### Certificates

Advanced Manufacturing Center- Manufacturing Pathway  
CCD.edu/Machining

Community College of Denver currently offers four certificates in machine technologies.

- Basic Machining
- Manual Machining
- CNC Machine Tool Operator
- Machining/Welding Tech

### Basic Machining

The basic machining certificate instructs students in the basics of shop safety, drill presses, machine shop math, basic CNC mill, and lathes. This certificate is the logical starting point for the more comprehensive certificates and degrees in the machine technologies program.

#### PROGRAM ADMISSION REQUIREMENTS

Meet minimum assessment scores or prerequisites required for general education courses in the program. You may take individual courses, if the course prerequisites are met, prior to being accepted into this program.

*\*\*This program is not eligible for federal student aid.\*\**

#### COURSE MAP

Code	Title	Credits
MAC 1000	Machine Shop Safety	1
MAC 1020	Introduction to Milling Machine	3
MAC 1010	Introduction to Engine Lathe	3
MAC 1002	Print Reading for Machinists	3
<b>Total Credits</b>		<b>10</b>

### Manual Machining

The manual machining certificate prepares you with the job-entry skills necessary to perform most operations on the vertical mill, horizontal mill, lathe and grinder/shaper. This certificate is the second logical step for the more comprehensive certificates and degrees in the machine technologies program.

#### PROGRAM ADMISSION REQUIREMENTS

Meet minimum assessment scores or prerequisites required for general education courses in the program. You may take individual courses, if the course prerequisites are met, prior to being accepted into this program.

Course	Title	Credits
<b>First Semester</b>		
MAC 1000	Machine Shop Safety	1
MAC 1020	Introduction to Milling Machine	3
MAC 1010	Introduction to Engine Lathe	3
MAT 1150	Technical Mathematics	4

MAC 1002	Print Reading for Machinists	3
<b>Subtotal</b>		<b>14</b>
<b>Second Semester</b>		
MAC 1011	Intermediate Engine Lathe	3
MAC 1021	Intermediate Milling Machine	3
<b>Subtotal</b>		<b>6</b>
<b>Total Credits</b>		<b>20</b>

### CNC Machine Tool Operator

The computer numeric control (CNC) machine tool operator certificate prepares you with the job-entry skills necessary to perform most operations on the vertical mill, horizontal mill, lathe, grinder/shaper, CNC mill and CNC lathe. You will be prepared to enter positions as a CNC machine tool operator. All credits within this certificate apply toward the Associate of Applied Science in machining technologies degree with an emphasis in CNC machining technologies manufacturing.

#### PROGRAM ADMISSION REQUIREMENTS

Meet minimum assessment scores or prerequisites required for general education courses in the program. You may take individual courses, if the course prerequisites are met, prior to being accepted into this program.

#### COURSE MAP

Course	Title	Credits
<b>First Semester</b>		
MAC 1000	Machine Shop Safety	1
MAT 1150	Technical Mathematics	4
CAD 2464	Fusion/AutoDesk	3
MAC 1002	Print Reading for Machinists	3
MAC 2005	Introduction to CNC Milling Operations	3
<b>Subtotal</b>		<b>14</b>
<b>Second Semester</b>		
MAC 2006	CNC Milling Operations II	3
MAC 2001	Introduction to CNC Turning Operations	3
MAC 2002	CNC Turning Operations II	3
MAC 2050	Advanced Inspection Techniques	3
MAC 2040	CAD/CAM 2D	3
<b>Subtotal</b>		<b>15</b>
<b>Total Credits</b>		<b>29</b>

### Machining/ Welding Tech

This certificate is designed to provide a rounded understanding of the entry-level skills in computer aided drafting, machining and welding. This set of skills will allow you to enter the field of manufacturing equipment servicing and repair.

#### PROGRAM ADMISSION REQUIREMENTS

Meet minimum assessment scores or prerequisites required for general education courses in the program. You may take individual courses, if the course prerequisites are met, prior to being accepted into this program.

Course	Title	Credits
<b>First Semester</b>		
MAC 1000	Machine Shop Safety	1
MAC 1002	Print Reading for Machinists	3
MAC 1010	Introduction to Engine Lathe	3
MAC 1020	Introduction to Milling Machine	3
<b>Subtotal</b>		<b>10</b>
<b>Second Semester</b>		
WEL 1000	Safety for Welders	1
WEL 1001	Allied Cutting Processes	4
Choose One Elective Course		4
WEL 1002	Oxyacetylene Joining Processes	
WEL 1003	Basic Shielded Metal Arc I	
WEL 1024	Introduction to Gas Tungsten Arc Welding	
WEL 1025	Introduction to Gas Metal Arc Welding	

Choose One Elective Course	4
WEL 1002 Oxyacetylene Joining Processes	
WEL 1003 Basic Shielded Metal Arc I	
WEL 1024 Introduction to Gas Tungsten Arc Welding	
WEL 1025 Introduction to Gas Metal Arc Welding	
<b>Subtotal</b>	<b>13</b>
<b>Total Credits</b>	<b>23</b>