

# Program map for Computer Numerical Control Certificate of Proficiency (COP)

2024-25



[Return to Manufacturing, Trades and Transportation Program Maps \(lowercolumbia.edu/program-maps/trades\)](https://lowercolumbia.edu/program-maps/trades)

The Machine Trades certificate program is another route to employment as a machinist, millwright, tool and die maker, or other occupation related to manufacturing. Graduates may work as advanced apprentice machinists, machine operators, or programmers.

[View this program in the LCC Catalog \(lowercolumbia.edu/publications/catalog/programs/Trades-COP-Computer-Numerical-Control\)](https://lowercolumbia.edu/publications/catalog/programs/Trades-COP-Computer-Numerical-Control)

## See also

- [Degree Requirements for Manufacturing, Trades and Transportation programs \(lowercolumbia.edu/programs/trades\)](https://lowercolumbia.edu/programs/trades)
- [Course descriptions in the LCC Catalog \(lowercolumbia.edu/publications/catalog/courses\)](https://lowercolumbia.edu/publications/catalog/courses)
- [Distribution lists in the LCC Catalog \(lowercolumbia.edu/publications/catalog/distribution-lists\)](https://lowercolumbia.edu/publications/catalog/distribution-lists)

**Important:** Many course sequences only begin in fall quarter. Check with your program advisor.

## By Quarter Overview

### First Quarter

- BUS 144: Management of Human Relations: DIV (5 credits)
- MASP 107: Machining for Related Occupations (2-6 credits) AND/OR MASP 111: Machine Shop I (2-10 credits)
- MATH 106: Industrial Mathematics (5 credits)
  - *MATH 079 or TECH 079 with a C or better or instructor permission\**
- MFG 115: Manufacturing Process (5 credits)

*\*Pre- and/or co-requisite(s)*

## Second Quarter

- MASP 107: Machining for Related Occupations (2-6 credits) AND/OR MASP 111: Machine Shop I (2-10 credits)
- MASP 204: CNC Machining Center Fundamentals (3 credits)
- BLPT 150: Machinist Blueprint Reading (5 credits)
- COLL 101: College Success 101 (2 credits)
- ENGL 110: Industrial Communication (5 credits)

## Third Quarter

- MFG 230: Computer Integrated Manufacturing (4 credits)
  - MASP 221 OR MASP 222\*
- MASP 221: CNC Milling (2-10 credits)
  - MASP 204\*
- MASP 205: CNC Turning Center Fundamentals (3 credits)
- HLTH 105: First Aid, CPR and Bloodborne Pathogens (1 credit)

*\*Pre- and/or co-requisite(s)*

## Fourth Quarter

- MFG 105: Industrial Safety (3 credits)
- MASP 222: CNC Turning (2-10 credits)
  - MASP 205\*

*\*Pre- and/or co-requisite(s)*

## Detailed Class Sequence

### 1. Management of Human Relations: DIV

BUS 144 (5 credits)

### 2. Machining for Related Occupations AND/OR Machine Shop I

MASP 107 (2-6 credits) AND/OR MASP 111 (2-10 credits)

### 3. Industrial Mathematics

MATH 106 (5 credits)

*Pre- and/or co-requisite(s): MATH 079 or TECH 079 with a C or better or instructor permission*

### 4. Manufacturing Process

MFG 115 (5 credits)

## **5. Machining for Related Occupations AND/OR Machine Shop I**

*MASP 107 (2-6 credits) AND/OR MASP 111 (2-10 credits)*

## **6. CNC Machining Center Fundamentals**

MASP 204 (3 credits)

## **7. Machinist Blueprint Reading**

BLPT 150 (5 credits)

## **8. College Success 101**

COLL 101 (2 credits)

## **9. Industrial Communication**

ENGL 110 (5 credits)

## **10. Computer Integrated Manufacturing**

MFG 230 (4 credits)

*Pre- and/or co-requisite(s): MASP 221 OR MASP 222*

## **11. CNC Milling**

MASP 221 (2-10 credits)

*Pre- and/or co-requisite(s): MASP 204*

## **12. CNC Turning Center Fundamentals**

MASP 205 (3 credits)

## **13. First Aid, CPR and Bloodborne Pathogens**

HLTH 105 (1 credit)

## **14. Industrial Safety**

MFG 105 (3 credits)

## 15. CNC Turning

MASP 222 (2-10 credits)

*Pre- and/or co-requisite(s): MASP 205*