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

2025-26

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)

See also

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

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- 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)

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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

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MASP 222 (2-10 credits)
Pre- and/or co-requisite(s): MASP 205