

# Engineering Technician - COP



**2023-24**

## Program map for Engineering Technician Certificate of Proficiency (COP)

An engineering technician provides technical support to an engineer, and may work in the fields of mechanical, industrial, civil, electrical, aerospace, computer, or environmental engineering. They assist engineers with research and development, computer aided drafting, quality control or design. They may also work alongside scientists or as quality assurance inspectors. Engineering technicians need the ability to work well on a team, and have strong analytical and problem-solving skills. In this program students learn to use math and science skills to assist engineers with creating products, improving manufacturing methods and maintaining assembly systems.

**See also:** ( [lowercolumbia.edu/programs/trades](https://lowercolumbia.edu/programs/trades) )

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

*Please note that many course sequences only begin in fall quarter. Please check with your program advisor for more information.*

*Please review both the "By Quarter Overview" and "Detailed Class Sequence" tabs below.*

## By Quarter Overview

### First Quarter

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- CS 110: Introduction to Microcomputer Applications (3 credits)
  - *Ability to use keyboard\**
- HLTH 105: First Aid, CPR and Bloodborne Pathogens (1 credit)
- MATH 106: Industrial Mathematics (5 credits)
  - *MATH 079 or TECH 079 with a C or better or instructor permission\**
- COLL 101: College Success 101 (2 credits)

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

## Second Quarter

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- BLPT 150: Machinists Blueprint Reading OR BLPT 160: Blueprint for Welders (5 credits)
  - *For BLPT 160: MATH 106\**
- MFG 130: Material Science (5 credits)
- ENGL 110: Industrial Communication (5 credits)
- ENGR& 121: Engineering Graphics I (3 credits)

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

## Third Quarter

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- BTEC 131: Introduction to Spreadsheets (5 credits)
  - *BTEC 104 or CS 110, and BUS 104 or MATH 88 or MATH 97, with a C or higher, or instructor permission\**
- ENGR& 122: Engineering Graphics II (3 credits)
  - *ENGR& 121 or instructor permission\**
- MFG 230: Computer Integrated Manufacturing (4 credits)
  - *MASP 221 OR MASP 222\**
- COLL 289: Employment Portfolio Seminar (1 credit)

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

## Fourth Quarter (Fall)

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- ENGR& 123: Engineering Graphics III (3 credits)
  - *ENGR& 121 and ENGR& 122 or instructor permission\**
- MFG 105: Industrial Safety (3 credits)
- BUS 144: Management of Human Relations: DIV (5 credits)
- MFG 288: Cooperative Work Experience (2 credits)
  - *Instructor or Cooperative Education Coordinator permission. Concurrent requirements: COLL 289 or BTEC 294 or BUS 294 or IT 294\**

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

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## Detailed Class Sequence

### 1. Introduction to Microcomputer Applications

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CS 110 (3 credits)

Pre- and/or co-requisite(s): Ability to use keyboard

### 2. First Aid, CPR and Bloodborne Pathogens

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HLTH 105 (1 credit)

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### 3. Industrial Mathematics

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MATH 106 (5 credits)

*Pre- and/or co-requisite(s): MATH 079 or TECH 079*

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### 4. College Success 101

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COLL 101 (2 credits)

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### 5. Machinists Blueprint Reading OR Blueprint for Welders

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BLPT 160 OR BLPT 160 (5 credits)

*Pre- and/or co-requisite(s): for BLPT 160: MATH 106*

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### 6. Material Science

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MFG 130 (3 credits)

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### 7. Industrial Communication

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ENGL 110 (5 credits)

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### 8. Engineering Graphics

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ENGR& 121 (3 credits)

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### 9. Introduction to Spreadsheets

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BTEC 131 (5 credits)

*Pre- and/or co-requisite(s): BTEC 104 or CS 110, and BUS 104 or MATH 88 or MATH 97, with a C or higher, or instructor permission*

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### 10. Engineering Graphics II

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ENGR& 122 (3 credits)

*Pre- and/or co-requisite(s): ENGR& 121*

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### 11. Computer Integrated Manufacturing

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MFG 230 (4 credits)

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

## 12. Employment Portfolio Seminar

COLL 289 (1 credit)

## 13. Engineering Graphics III

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ENGR& 123 (3 credits)

*Pre- and/or co-requisite(s): ENG& 121, ENG& 122 or instructor permission*

## 14. Industrial Safety

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MFG 105 (3 credits)

## 15. Management of Human Relations: DIV

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BUS 144 (5 credits)

## 16. Cooperative Work Experience

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MFG 288 (2 credits)

*Pre- and/or co-requisite(s): Instructor or Cooperative Education Coordinator permission. Concurrent requirements: COLL 289 or BTEC 294 or BUS 294 or IT 294*



## Program Maps for Manufacturing, Trades and Transportation ( [lowercolumbia.edu/program-maps/trades](http://lowercolumbia.edu/program-maps/trades) )

- **Advanced Manufacturing Technology - AAS (Engineering Technician and Multicraft Trades Option) ( [lowercolumbia.edu/program-maps/trades/AAS-Advanced-Manufacturing-Technology-Engineering-Tech-Multicraft-Trades](http://lowercolumbia.edu/program-maps/trades/AAS-Advanced-Manufacturing-Technology-Engineering-Tech-Multicraft-Trades) )**
- **Advanced Manufacturing Technology - AAS (Multicraft Trades and Production Technician Option) ( [lowercolumbia.edu/program-maps/trades/AAS-Advanced-Manufacturing-Technology-Multicraft-Trades-Production-Tech](http://lowercolumbia.edu/program-maps/trades/AAS-Advanced-Manufacturing-Technology-Multicraft-Trades-Production-Tech) )**
- **Advanced Manufacturing Technology - AAS (Production Technician and Engineering Technician Option) ( [lowercolumbia.edu/program-maps/trades/AAS-Advanced-Manufacturing-Technology-Production-Tech-Engineering-Tech](http://lowercolumbia.edu/program-maps/trades/AAS-Advanced-Manufacturing-Technology-Production-Tech-Engineering-Tech) )**
- **Advanced Manufacturing for BAS-OLTM - AAS-T (Transfer Option) ( [lowercolumbia.edu/program-maps/trades/AAS-T-Advanced-Manufacturing-for-BAS-OLTM](http://lowercolumbia.edu/program-maps/trades/AAS-T-Advanced-Manufacturing-for-BAS-OLTM) )**
- **Automotive Technology - AAS ( [lowercolumbia.edu/program-maps/trades/AAS-Automotive-Technology](http://lowercolumbia.edu/program-maps/trades/AAS-Automotive-Technology) )**

- **Automotive Technology - AAS-T (BAS-OLTM Option) ( [lowercolumbia.edu/program-maps/trades/AAST-Automotive-Technology-to-BAS-OLTM](http://lowercolumbia.edu/program-maps/trades/AAST-Automotive-Technology-to-BAS-OLTM) )**
- **Automotive Technology - COP ( [lowercolumbia.edu/program-maps/trades/COP-Automotive-Technology-Maintenance-Light-Repair](http://lowercolumbia.edu/program-maps/trades/COP-Automotive-Technology-Maintenance-Light-Repair) )**
- **Commercial Truck Driving - COC ( [lowercolumbia.edu/program-maps/trades/COC-Commercial-Truck-Driving](http://lowercolumbia.edu/program-maps/trades/COC-Commercial-Truck-Driving) )**
- **Computer Numerical Control - COP ( [lowercolumbia.edu/program-maps/trades/COP-Computer-Numerical-Control](http://lowercolumbia.edu/program-maps/trades/COP-Computer-Numerical-Control) )**
- **Diesel/Heavy Equipment Preventative Maintenance - COP ( [lowercolumbia.edu/program-maps/trades/COP-Diesel-Heavy-Equipment-Preventative-Maintenance](http://lowercolumbia.edu/program-maps/trades/COP-Diesel-Heavy-Equipment-Preventative-Maintenance) )**
- **Diesel/Heavy Equipment Technology - AAS ( [lowercolumbia.edu/program-maps/trades/AAS-Diesel-Heavy-Equipment](http://lowercolumbia.edu/program-maps/trades/AAS-Diesel-Heavy-Equipment) )**
- **Diesel/Heavy Equipment Technology - AAS-T (BAS-OLTM Option) ( [lowercolumbia.edu/program-maps/trades/AAST-Diesel-Heavy-Equipment-to-BAS-OLTM](http://lowercolumbia.edu/program-maps/trades/AAST-Diesel-Heavy-Equipment-to-BAS-OLTM) )**
- **Engineering Technician - COP ( [lowercolumbia.edu/program-maps/trades/COP-Engineering-Technician](http://lowercolumbia.edu/program-maps/trades/COP-Engineering-Technician) )**
- **Machine Trades - AAS ( [lowercolumbia.edu/program-maps/trades/AAS-Machine-Trades](http://lowercolumbia.edu/program-maps/trades/AAS-Machine-Trades) )**
- **Machine Trades - AAS-T (BAS-OLTM Option) ( [lowercolumbia.edu/program-maps/trades/AAST-Machine-Trades-to-BAS-OLTM](http://lowercolumbia.edu/program-maps/trades/AAST-Machine-Trades-to-BAS-OLTM) )**
- **Machinist - COP ( [lowercolumbia.edu/program-maps/trades/COP-Machinist](http://lowercolumbia.edu/program-maps/trades/COP-Machinist) )**
- **Multicraft Trades - COP ( [lowercolumbia.edu/program-maps/trades/COP-Multicraft-Trades](http://lowercolumbia.edu/program-maps/trades/COP-Multicraft-Trades) )**
- **Production Technician - COP ( [lowercolumbia.edu/program-maps/trades/COP-Production-Technician](http://lowercolumbia.edu/program-maps/trades/COP-Production-Technician) )**
- **Welding - AAS ( [lowercolumbia.edu/program-maps/trades/AAS-Welding](http://lowercolumbia.edu/program-maps/trades/AAS-Welding) )**
- **Welding - COP ( [lowercolumbia.edu/program-maps/trades/COP-Welding](http://lowercolumbia.edu/program-maps/trades/COP-Welding) )**
- **Welding for BAS-OLTM - AAS-T (Transfer Option) ( [lowercolumbia.edu/program-maps/trades/AAS-T-Welding-for-BAS-OLTM](http://lowercolumbia.edu/program-maps/trades/AAS-T-Welding-for-BAS-OLTM) )**