

Advanced Manufacturing Technology - AAS (Engineering Technician and Multicraft Trades Option)



2023-24

Program map for Advanced Manufacturing Technology Associate in Applied Science (AAS), Engineering Technician and Multicraft Trades option

Manufacturing industries are in need of skilled production operators and technicians with up-to-date, 21st century skills. Industries that make products from metal, plastics, wood and other materials, as well as those producing solar panels, biofuels, energy, petrochemicals, pharmaceuticals, food, semiconductors, and a host of other traditional and “green” products need employees capable of running and servicing sophisticated machinery. In addition, workers in these industries must understand and practice principles aimed at maintaining safety, improving quality, eliminating waste, and reducing or eliminating the impact of operations on the environment.

This option includes earning Engineering Technician and Multicraft Trades certificates.

See also: (lowercolumbia.edu/programs/trades)

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

- COLL 101: College Success 101 (2 credits)
- MFG 105: Industrial Safety (3 credits)

- MATH 106: Industrial Mathematics (5 credits)
- CS 110: Introduction to Microcomputer Applications (3 credits)
 - *Ability to use a keyboard**

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

Second Quarter

- BLPT 150: Machinist Blueprint Reading (5 credits)
- ENGR& 121: Engineering Graphics I (3 credits)
- 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**

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

Third Quarter

- MASP 111: Machine Shop I (2-10 credits)
- ENGR& 122: Engineering Graphics II (3 credits)
 - *ENGR& 121 or instructor permission**
- ENGL 110: Industrial Communication (5 credits)

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

Fourth Quarter

- WELD 105: Related Welding (1-6 credits)
- ENGR 123: Engineering Graphics III (3 credits)
 - *ENGR& 121, ENGR& 122 or Instructor permission**
- TECH 100: Advanced Principles of Technology (5 credits)
 - *1 yr of HS Prin of Tech-TECH 90 or MATH 106**

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

Fifth Quarter

- COLL 289: Employment Portfolio Seminar (1 credit)
 - *Formal admission to a specific program**
- BLPT 160: Blueprint Reading for Welders (5 credits)
 - *MATH 106 or higher or instructor permission**
- BUS 144: Management of Human Relations: DIV (5 credits)
- MFG 130: Material Science (5 credits)

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

Sixth Quarter

- MFG 288: Cooperative Work Experience (5 credits)
 - *Instructor or Cooperative Education Coordinator permission Concurrent requirements: COLL 289 or BTEC 294 or BUS 294 or IT 294 must be taken prior to or concurrent with this course**
- MFG 230: Computer Integrated Manufacturing (4 credits)
 - *MASP 221 or MASP 222**
- DHET 240: Fluid Power/Electrical Theory and Design (5 credits)
 - *Math 78/79*
- HLTH 105: First Aid, CPR and Bloodborne Pathogens (1 credit)

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

Detailed Class Sequence

1. College Success 101

COLL 101 (2 credits)

2. Industrial Safety

MFG 105 (3 credits)

3. Industrial Mathematics

MATH 106 (5 credits)

4. Introduction to Microcomputer Applications

CS 110 (3 credits)

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

5. Machinist Blueprint Reading

BLPT 150 (5 credits)

6. Engineering Graphics I

ENGR& 121 (3 credits)

7. Introduction to Spreadsheets

BTEC 131 (5 credits)

Pre- and 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

8. Machine Shop I

MASP 111 (2-10 credits)

9. Engineering Graphics II

ENGR& 122 (3 credits)

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

10. Industrial Communication

ENGL 110 (5 credits)

11. Related Welding

WELD 105 (1-6 credits)

12. Engineering Graphics III

ENGR (3 credits)

Pre- and/or co-requisite(s): ENGR& 121/ENGR& 122 or Instructor permission

13. Advanced Principles of Technology

TECH 100 (5 credits)

Pre- and/or co-requisite(s): 1 yr of HS Prin of Tech-TECH 90 or MATH 106

14. Employment Portfolio Seminar

COLL 289 (1 credit)

Pre- and/or co-requisite(s): Formal admission to a specific program

15. Blueprint Reading for Welders

BLPT 160 (5 credits)

Pre- and/or co-requisite(s): MATH 106 or instructor permission

16. Management of Human Relations: DIV

BUS 144 (5 credits)

17. Material Science

MFG 130 (5 credits)

18. Cooperative Work Experience

MFG 288 (5 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 must be taken prior to or concurrent with this course

19. Computer Integrated Manufacturing

MFG 230 (4 credits)

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

20. Fluid Power/Electrical Theory and Design

DHET 240 (5 credits)

Pre- and/or co-requisite(s): Math 78/79

21. First Aid, CPR and Bloodborne Pathogens

HLTH 105 (1 credit)



Program Maps for Manufacturing, Trades and Transportation (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 \(BAS-OLTM Option\) \(lowercolumbia.edu/program-maps/trades/AAS-T-BAS-OLTM-Option \)](http://lowercolumbia.edu/program-maps/trades/AAS-T-BAS-OLTM-Option)
- [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)
- **Diesel/Heavy Equipment Preventative Maintenance - COP** (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)
- **Diesel/Heavy Equipment Technology - AAS-T (BAS-OLTM Option)** (lowercolumbia.edu/program-maps/trades/AAS-T-Diesel-Heavy-Equipment-to-BAS-OLTM)
- **Engineering Technician - COP** (lowercolumbia.edu/program-maps/trades/COP-Engineering-Technician)
- **Machine Trades - AAS** (lowercolumbia.edu/program-maps/trades/AAS-Machine-Trades)
- **Machine Trades - AAS-T (BAS-OLTM Option)** (lowercolumbia.edu/program-maps/trades/AAS-T-Machine-Trades-to-BAS-OLTM)
- **Machinist - COP** (lowercolumbia.edu/program-maps/trades/COP-Machinist)
- **Multicraft Trades - COP** (lowercolumbia.edu/program-maps/trades/COP-Multicraft-Trades)
- **Production Technician - COP** (lowercolumbia.edu/program-maps/trades/COP-Production-Technician)
- **Welding - AAS** (lowercolumbia.edu/program-maps/trades/AAS-Welding)
- **Welding - COP** (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)