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

2023-24

Program map for Advanced Manufacturing Technology Associate in Applied Science (AAS), Multicraft Trades and Production Technician 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 Multicraft Trades and Production Technician 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)
- MATH 106: Industrial Mathematics (5 credits)
- MFG 140: Applied Hydraulics (4 credits)
  - *MATH 091 or higher or instructor permission**

- HLTH 105: First Aid, CPR and Bloodborne Pathogens (1 credit)

Pre- and/or co-requisite(s)

Second Quarter

- BLPT 150: Machinist Blueprint Reading or BLPT 160: Blueprint Reading for Welders (5 credits)
  - *MATH 106 or instructor permission**
- PMFG 201: Electrical Control Equipment (3 credits)
- PMFG 110: Industrial and Predictive Maintenance Fundamentals (5 credits)
- CS 110: Introduction to Microcomputer Applications (3 credits)
  - *Ability to use a keyboard**

Pre- and/or co-requisite(s)

Third Quarter

- ENGL 110: Industrial Communication (5 credits)
- MFG 120: Quality Assurance (4 credits)
- PMFG 210: Advanced Industrial Maintenance (5 credits)
  - *PMFG 110 or instructor permission**
- PMFG 202: Electric Motors (2 credits)
  - *PMFG 201 or instructor permission**

Pre- and/or co-requisite(s)

Fourth Quarter (Summer)

- BUS 144: Management of Human Relations: DIV (5 credits)
- TECH 100: Advanced Principles of Technology (5 credits)
  - *1 yr of HS Prin of Tech-TECH 90 or MATH 106**
- MFG 105: Industrial Safety (3 credits)

Pre- and/or co-requisite(s)

Fifth Quarter (Fall)

- PMFG 150: Electrical and Electronic Fundamentals (5 credits)
  - *MATH 78/79 or higher or instructor permission**
- PMFG 151: Process Control Equipment (5 credits)
- MFG 115: Manufacturing Process (5 credits)

Pre- and/or co-requisite(s)

Sixth Quarter

- COLL 289: Employment Portfolio Seminar (1 credit)
  - *Formal admission to a specific program**
- MFG 230: Computer Integrated Manufacturing (4 credits)

- PMFG 154: Fundamentals of Instrumentation and PLCs (5 credits)
  - *PMFG 150 and PMFG 151 or instructor permission**

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

Seventh Quarter

- MFG 288: Cooperative Work Experience (2 credits)
  - *COLL 289 or BTEC 294 or BUS 294 or IT 294 must be taken prior to or concurrent with this course**
- MASP 107: Machining for Related Occupations and/or MASP 111: Machine Shop I (10 credits total)

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

Detailed Class Sequence

1. College Success 101

COLL 101 (2 credits)

2. Industrial Mathematics

MATH 106 (5 credits)

3. Applied Hydraulics

MFG 140 (4 credits)
Pre- and/or co-requisite(s): MATH 091 or higher or instructor permission

4. First Aid, CPR and Bloodborne Pathogens

HLTH 105 (1 credit)

5. Machinist Blueprint Reading or Blueprint Reading for Welders

BLPT 150 or BLPT 160 (5 credits)
Pre- and/or co-requisite(s): MATH 106 or instructor permission

6. Electrical Control Equipment

PMFG 201 (3 credits)

7. Industrial and Predictive Maintenance Fundamentals

PMFG 110 (5 credits)

8. Introduction to Microcomputer Applications

CS 110 (3 credits)
Pre- and/or co-requisite(s): Ability to use a keyboard

9. Industrial Communications

ENGL 110 (5 credits)

10. Quality Assurance

MFG 120 (4 credits)

11. Advanced Industrial Maintenance

PMFG 210 (5 credits)
Pre- and/or co-requisite(s): PMFG 110 or instructor permission

12. Electric Motors

PMFG 202 (2 credits)
*Pre- and/or co-requisite(s): PMFG 201 or instructor permission**

13. Management of Human Relations: DIV

BUS 144 (5 credits)

14. 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

15. Industrial Safety

MFG 105 (3 credits)

16. Electrical and Electronic Fundamentals

PMFG 150 (5 credits)
Pre- and/or co-requisite(s): MATH 78/79 or higher or instructor permission

17. Process Control Equipment

PMFG 151 (5 credits)

18. Manufacturing Process

MFG 115 (5 credits)

19. Employment Portfolio Seminar

COLL 289 (1 credit)
Pre- and/or co-requisite(s): Formal admission to a specific program

20. Computer Integrated Manufacturing (Natural Science)

MFG 230 (4 credits)

21. Fundamentals of Instrumentation and PLCs

PMFG 154 (5 credits)

Pre- and/or co-requisite(s): PMFG 150 and PMFG 151 or instructor permission

22. Cooperative Work Experience

MFG 288 (2 credits)
Pre- and/or co-requisite(s): COLL 289 or BTEC 294 or BUS 294 or IT 294 must be taken prior to or concurrent with this course

23. Machining for Related Occupations and/or Machine Shop I

MASP 107 and/or MASP 111 (10 credits total)

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)**

- **Advanced Manufacturing Technology - AAS (Multicraft Trades and Production Technician Option) (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)**
- **Advanced Manufacturing for BAS-OLTM - AAS-T (Transfer Option) (lowercolumbia.edu/program-maps/trades/AAS-T-Advanced-Manufacturing-for-BAS-OLTM)**
- **Automotive Technology - AAS (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)**
- **Automotive Technology - COP (lowercolumbia.edu/program-maps/trades/COP-Automotive-Technology-Maintenance-Light-Repair)**
- **Commercial Truck Driving - COC (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/AAST-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/AAST-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)**