Advanced Manufacturing Technology - AAS (Production Technician and Engineering Technician Option)

2023-24

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

- CS 110: Introduction to Microcomputer Applications (3 credits)
  - *Ability to use a keyboard**
- MFG 105: Industrial Safety (3 credits)

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

Second Quarter

- MFG 130: Materials Science (5 credits)
- BLPT 150: Machinist Blueprint Reading/BLPT 160: Blueprint Reading for Welders (5 credits)
  - *MATH 106 or instructor permission**
- ENGR& 121: Engineering Graphics I (3 credits)
- HLTH 105: First Aid, CPR and Bloodborne Pathogens (1 credit)

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

Third Quarter

- ENGR& 122: Engineering Graphics II (3 credits)
  - *ENGR& 121 or instructor permission**
- 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**
- MFG 230: Computer Integrated Manufacturing (4 credits)
  - *MASP 221 or MASP 222**
- ENGL 110: Industrial Communication (5 credits)

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

Fourth Quarter (Fall)

- MFG 140: Applied Hydraulics (4 credits)
  - *MATH 091 or higher or instructor permission**
- PMFG 150: Electrical and Electronic Fundamentals (5 credits)
  - *MATH 78/79 or higher or instructor permission**
- PMFG 151: Process Control Equipment (5 credits)
  - *MATH 087 or 088/Tech 088 or higher**
- ENGR& 123: Engineering Graphics III (3 credits)
  - *ENGR& 121/ENGR& 122 or Instructor permission**

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

Fifth Quarter

- PMFG 110: Industrial and Predictive Maintenance Fundamentals (5 credits)
- PMFG 201: Electrical Control Equipment (3 credits)
  - *PMFG 150 or instructor permission**
- PMFG 154: Fundamentals of Instrumentation and PLCs (5 credits)
  - *PMFG 150/PMFG 151 or Instructor permission**
- BUS 144: Management of Human Relations: DIV (5 credits)

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

Sixth Quarter

- PMFG 210: Advanced Industrial Maintenance (5 credits)
  - *PMFG 110 or instructor permission**
- PMFG 202: Electric Motors (2 credits)
  - *PMFG 201 or instructor permission**
- MFG 120: Quality Assurance (4 credits)
- COLL 289: Employment Portfolio Seminar (1 credit)
  - *Formal admission to a specific program**
- 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**

**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. Introduction to Microcomputer Applications

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

4. Industrial Safety

MFG 105 (3 credits)

5. Materials Science

MFG 130 (5 credits)

6. Machinist Blueprint Reading/Blueprint Reading for Welders

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

7. Engineering Graphics I

ENGR& 121 (3 credits)

8. First Aid, CPR and Bloodborne Pathogens

HLTH 105 (1 credit)

9. Engineering Graphics II

ENGR& 122 (3 credits)
Pre- and/or co-requisite(s): ENGR& 121 or instructor permission

10. Introduction to Spreadsheets

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**

11. Computer Integrated Manufacturing

MFG 230 (4 credits)
Pre- and/or co-requisite(s): MASP 221 or MASP 222

12. Industrial Communication

ENGL 110 (5 credits)

13. Applied Hydraulics

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

14. Electrical and Electronic Fundamentals

PMFG 150 (5 credits)
Pre- and co-requisite(s): MATH 087 or 088/Tech 088 or higher

15. Process Control Equipment

PMFG 151 (5 credits)
Pre- and/or co-requisite(s): MATH 087 or 088/Tech 088 or higher

16. Engineering Graphics III

ENGR& 123 (3 credits)

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

17. Industrial and Predictive Maintenance Fundamentals

PMFG 110 (5 credits)

18. Electrical Control Equipment

PMFG 201 (3 credits)

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

19. Fundamentals of Instrumentation and PLCs

PMFG 154 (5 credits)
Pre- and/or co-requisite(s): PMFG 150/PMFG 151 or Instructor permission

20. Management of Human Relations: DIV

BUS 144 (5 credits)

21. Advanced Industrial Maintenance

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

22. Electric Motors

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

23. Quality Assurance

MFG 120 (4 credits)

24. Employment Portfolio Seminar

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

25. 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

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)**