

Associate in Applied Science (AAS)

Advanced Manufacturing Technology

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.

Degree Requirements

- **Communications:**
5 credits – ENGL& 101 English Composition I OR ENGL 110 Industrial Communication (ENGL 110 recommended)
- **Quantitative Skills:**
5 credits – MATH 106 Industrial Mathematics
- **Natural Sciences:**
5 credits – DHET 240 Fluid Power/Electrical Theory and Design OR TECH 100 Advanced Principles of Technology OR MFG 130 Materials Science OR choose from the Distribution List
- **Diversity / Human Relations:**
5 credits – BUS 144 Management of Human Relations: DIV

Core Program Requirements

HLTH 105	First Aid, CPR and Bloodborne Pathogens	1
MFG 105	Industrial Safety	3
COLL 289	Employment Portfolio Seminar	1
CS 110	Introduction to Microcomputer Applications	3

In addition to the core program requirements, students must select two options from the following areas of study:

Production Technician (39 credits)

MFG 120	Quality Assurance	4
MFG 140	Applied Hydraulics	4
PMFG 110	Industrial and Predictive Maintenance Fundamentals	5
PMFG 150	Electrical and Electronic Fundamentals	6
PMFG 151	Process Control Equipment	5
PMFG 154	Fundamentals of Instrumentation and PLCs	5
PMFG 201	Electrical Control Equipment	3
PMFG 202	Electric Motors	2
PMFG 210	Advanced Industrial Maintenance	5

Multicraft Trades (33 credits)

BLPT 150 OR BLPT 160	Machinists Blueprint Reading OR Blueprint Reading for Welders	5
MASP 107 AND/OR MASP 111	Machining for Related Occupations AND/OR Machine Shop I (2-10 variable for a combined total of 10 credits)	10
MFG 115	Manufacturing Processes	5
MFG 288	Cooperative Work Experience	2*
TECH 100	Advanced Principles of Technology	5
WELD 105	Related Welding	6

Engineering Technician (30 credits)

BLPT 150 OR BLPT 160	Machinists Blueprint Reading OR Blueprint Reading for Welders	5
BTEC 131	Introduction to Spreadsheets	5
ENGR& 121	Engineering Graphics I	3
ENGR& 122	Engineering Graphics II	3
ENGR& 123	Engineering Graphics III	3
MFG 130	Materials Science	5
MFG 230	Computer Integrated Manufacturing	4
MFG 288	Cooperative Work Experience	2*

*MFG 299 Independent Study may be substituted for MFG 288 with faculty program advisor permission.

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Total credits required to earn this degree: minimum of 91-100 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

Students completing this program should acquire the following skills and abilities:

- Communicate professionally in writing and speaking as appropriate to an industrial technology work environment (GS Communication).
- Apply objective, valid methods of inquiry and problem solving to draw rational, ethical, and coherent conclusions (GS Critical Thinking).
- Apply mathematical information to perform tasks in industrial technology (GS Numeracy/Quantitative Literacy).
- Interact effectively with individuals and groups (GS Interpersonal Relations).
- Display work appropriate behavior including positive attitude, timeliness and teamwork.
- Apply industry standard safety and hazardous material handling guidelines.
- Apply knowledge of computer programs to create professional, academic, or business documents following current industry standards.
- Describe a variety of manufacturing techniques and components common to manufacturing systems.
- Perform basic machining and welding techniques.
- Interpret blueprints, diagrams and schematics associated with various manufacturing processes.
- Describe basic concepts related to mechanical, hydraulic/pneumatic, instrumentation and electrical systems

- Describe basic process control strategies.
- Perform entry-level maintenance tasks common in manufacturing operations.
- Demonstrate competency in documenting and communicating work performed using trade specific language.
- Apply knowledge of the properties of industrial influence and the selection of primary materials and conversion into useful products.
- Describe various approaches used to ensure quality in manufacturing operations.

Revised April 2021 (Effective Fall 2021)

Notes:

Program planning is based on information available at the time of preparation. It is the student's responsibility to meet with their LCC advisor and with an advisor at the college to which they plan to transfer for specific requirements. Consult the LCC catalog for LCC graduation requirements.