

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 Communications (ENGL 110 recommended)
- **Quantitative/Symbolic Reasoning Skills:**
5 credits – MATH 106 Industrial Mathematics
- **Human Relations/ Social Science/Diversity:**
5 credits – BUS 144 Management of Human Relations:DIV meets all three of these requirements and is recommended.
- **Natural Sciences:**
5 credits – DHET 240 Fluid Power/Electrical Theory & Design OR TECH 100 Advanced Principles of Technology OR MFG 130 Materials Science OR choose from the Distribution List.

Core Program Requirements

MFG 100	Foundational Skills for the Trades	3
MFG 105	Industrial Safety	3
HLTH 105	First Aid, CPR and Bloodborne Pathogens	1

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

Production Technician

CS 110	Intro to Microcomputer Applications	3
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

BLPT 150 OR	Machinists Blueprint Reading OR	5
BLPT 160	Blueprint Reading for Welders	
MASP 107 AND/OR	Machining for Related Occupations (2-6 variable)	10
MASP 111	Machine Shop I (2-10 variable for a combined total of 10 credits)	
MFG 288	Cooperative Work Experience	2
MFG 289	Employment Portfolio Seminar	1
TECH 100	Advanced Principles of Technology	5
WELD 105	Related Welding	6

Engineering Technician

BLPT 150 OR	Machinists Blueprint Reading OR	5
BLPT 160	Blueprint Reading for Welders	
BTEC 131	Introduction to Spreadsheets	5
CS 110	Intro to Microcomputer Apps	3
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 289	Employment Portfolio Seminar	1

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 90 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 May 2019 (Effective Summer 2019)

Planner

The distribution lists are in the LCC Catalog. If you are online, click on the links below:

[Diversity Course List](#)

[Distribution List](#)

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MULTICRAFT TRADES/PRODUCTION TECHNICIAN

Fall Quarter			Winter Quarter			Spring Quarter			Summer Quarter		
√	Courses	Crs	√	Courses	Crs	√	Courses	Crs	√	Courses	Crs
	CS 110 (A)	3		BLPT 150/ BLPT 160 (W)	5		MASP 111 (A)	5			
	MATH 106 (A)	5		MASP 107 (A)	5		MFG 120 (Sp)	4			
	MFG 100 (A)	3		PMFG 201 (W)	3		PMFG 210 (Sp)	5			
	MFG 105 (A)	3		PMFG 110 (W)	5		PMFG 202 (Sp)	2			
	Total:	14		Total:	18		Total:	16		Total:	

Fall Quarter			Winter Quarter			Spring Quarter			Summer Quarter		
√	Courses	Crs	√	Courses	Crs	√	Courses	Crs	√	Courses	Crs
	MFG 140 (F)	4		HLTH 105 (A)	1		BUS 144 (A)	5			
	PMFG 150 (F)	5		MFG 289 (A)	1		ENGL 110 (A)	5			
	PMFG 151 (F)	5		PMFG 154 (W)	5		MFG 288 (A)	2			
				WELD 105 (A)	6		TECH 100 (A)	5			

Fall Quarter			Winter Quarter			Spring Quarter			Summer Quarter		
√	Courses	Crs	√	Courses	Crs	√	Courses	Crs	√	Courses	Crs
Total:		14	Total:		13	Total:		17	Total:		
									TOTAL 92 CREDITS EARNED		

PRODUCTION TECHNICIAN/ENGINEERING TECHNICIAN

Fall Quarter			Winter Quarter			Spring Quarter			Summer Quarter		
√	Courses	Crs	√	Courses	Crs	√	Courses	Crs	√	Courses	Crs
	MATH 106 (A)	5		BLPT 150/ BLPT 160 (W)	5		BUS 144 (A)	5			
	MFG 100 (A)	3		CS 110 (A)	3		BTEC 131 (A)	5			
	MFG 130 (F,W)	5		ENGL 110 (A)	5		ENGR& 122 (A)	3			
				ENGR& 121 (A)	3		MFG 230 (SP)	4			
				MFG 105 (A)	3						
Total:		13	Total:		19	Total:		17	Total:		

Fall Quarter			Winter Quarter			Spring Quarter			Summer Quarter		
√	Courses	Crs	√	Courses	Crs	√	Courses	Crs	√	Courses	Crs
	ENGR& 123 (A)	3		HLTH 105 (A)	1		MFG 120 (SP)	4			
	MFG 140 (F)	4		MFG 289 (A)	1		MFG 288 (A)	2			
	PMFG 150 (F)	5		PMFG 110 (W)	5		PMFG 202 (Sp)	2			
	PMFG 151 (F)	5		PMFG 154 (W)	5		PMFG 210 (Sp)	5			
				PMFG 201 (W)	3						
Total:		17	Total:		15	Total:		13	Total:		

Fall Quarter		Winter Quarter		Spring Quarter		Summer Quarter	
√	Courses Crs	√	Courses Crs	√	Courses Crs	√	Courses Crs
					TOTAL 94 CREDITS EARNED		

ENGINEERING TECHNICIAN/MULTICRAFT TRADES

Fall Quarter		Winter Quarter		Spring Quarter		Summer Quarter	
√	Courses Crs	√	Courses Crs	√	Courses Crs	√	Courses Crs
	CS 110 (A) 3		BLPT 150 (W) 5		ENGR& 122 (A) 3		
	MATH 106 (A) 5		BTEC 131 (A) 5		MASP 111 (A) 10		
	MFG 100 (A) 3		ENGR& 121 (A) 3		DHET 240 5		
	MFG 105 (A) 3						
Total: 14		Total: 13		Total: 18		Total:	

Fall Quarter		Winter Quarter		Spring Quarter		Summer Quarter	
√	Courses Crs	√	Courses Crs	√	Courses Crs	√	Courses Crs
	ENGR& 123 (A) 3		BLPT 160 (W) 5		ENGL 110 (A) 5		
	TECH 100 (A) 5		BUS 144 (A) 5		HLTH 105 (A) 1		
	WELD 105 (F) 6		MFG 130 (F,W) 5		MFG 230 (SP) 4		
			MFG 289 (A) 1		MFG 288 (A) 5		
Total: 14		Total: 16		Total: 15		Total:	
					TOTAL 90 CREDITS EARNED		

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.

Legend:

- A - Course usually offered all quarters.
- F - Course usually offered Fall Quarter.
- W - Course usually offered Winter Quarter.
- Sp - Course usually offered Spring Quarter.
- S - Course usually offered Summer Quarter.

ARCHIVE