

MANUFACTURING TECHNOLOGY- CERTIFICATE OF ACHIEVEMENT

PROGRAM DESCRIPTION

Manufacturing Technology is a program of courses designed to prepare the student for an entry level position in the workforce and to be a continuing education requires fabrication of products based on industrial blueprints and/or product specifications in industrial technology. The program will provide students with a broad range of skills including; industrial safety, fabrication, hydraulics and pneumatics, industrial electricity, basic machining, and blueprint reading. Students completing the program will have the manufacturing skills to solve technical challenges and work in the production trades.

FOR MORE INFORMATION, CONTACT: Albert Graham 831-755-6088, agraham@hartnell.edu, Alisal Campus B-123

PROGRAM LEARNING OUTCOMES

Upon successful completion of the Manufacturing Technology Program, a student will be able to:

- Demonstrate the ability to adhere to personal, industry, and OSHA safety standards in all projects.
- Analyze and solve manufacturing problems and applications using a variety of fabrication and basic machining processes.
- Explain, identify and troubleshoot applications of hydraulics and pneumatics as it pertains to manufacturing.
- Communicate effectively, both orally and in writing, using appropriate technical language
- Explain, identify, and troubleshoot applications of industrial electricity as it pertains to manufacturing.
- Read, interpret, and compare industrial blueprints.

In all certificate programs, it is required that at least of the required number of units be taken at Hartnell College. A grade of "C" or better must be maintained in all certificate-applicable units.

✓	REQUIRED MAJOR COURSES: Emphasis: Manufacturing Technology	Course No.	Course Title	Units
	Required Major Course	CMA-74	Industrial Drawing and Print Reading	3.0
	Required Major Course	MFGT-70	Introduction to Mechanized Agriculture	3.0
	Required Major Course	MFGT-130	Introduction to Metal Fabrication	3.0
	Required Major Course	MFGT-140	Introduction to Industrial Hydraulics and Pneumatics	2.0
	Required Major Course	MFGT-150	Introduction to Industrial Electricity	2.0
	Required Major Course	MFGT-169	Hazmat and Industrial Safety	2.0
	Required Major Course	MFGT-180	Industrial Workplace Skills	1.0
	Required Major Course	WLD-150	Basic Welding	2.0
			SUBTOTAL UNITS (=18.0)	
✓	RESTRICTED MAJOR ELECTIVES (Select a minimum of 2.0 units from the following)	Course No.	Course Title	Units
	Required Major Course	MFGT-131	Intermediate Metal Fabrication	3.0
	Required Major Course	MFGT-141	Intermediate Industrial Hydraulics and Pneumatics	2.0
	Required Major Course	MFGT-151	Intermediate Industrial Electricity	2.0
			SUBTOTAL UNITS (≥ 2.0)	
✓	RESTRICTED MAJOR ELECTIVES (Select a minimum of 4.0 units from the following)	Course No.	Course Title	Units
	Required Major Elective	CMA-81	Computer Aided Drafting and Design I	3.0
	Required Major Elective	CMA-76	Computer - Aided Mechanical Drafting and Detailing	3.0
	Required Major Elective	CMA-75	Engineering Drawing with Solidworks	3.0
	Required Major Elective	MFGT-71	Agricultural and Industrial Equipment Operation	3.0
	Required Major Elective	MFGT-75	Agriculture Machinery and Management	3.0
	Required Major Elective	MFGT-132	Advanced Metal Fabrication	3.0
	Required Major Elective	WLD-52	Sheet Metal Fabrication	2.0
	Required Major Elective	WLD-151	Introduction to Tig Welding	2.0
			SUBTOTAL UNITS (≥ 4.0)	
	OTHER REQUIRED COURSES	Course No.	Course Title	Units
	Required course	ENG-101* or ELS-101*	Intermediate Composition and Reading Or Academic Writing & Reading II	(3.0) (5.0)
	Required course	MAT-151L1, L2, and L3**	Technical Mathematics Levels 1, 2, and 3	3.0
			TOTAL UNITS (24)	

*Eligibility for ENG-1A fulfills this requirement.

**Eligibility for MAT-123 or completion of any math in which MAT-121 is a prerequisite with a grade of "C" or better or a score of 70% or greater on the mathematics competency exam fulfills this requirement.