

MANUFACTURING TECHNOLOGY

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 Associate of Science in Manufacturing Technology Degree, 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.

A minimum of **60.0 semester units** with a grade of "C" or better must be maintained in all degree-applicable units. Only courses numbered 1-199 may apply toward the Associate Degree. Courses listed below may have prerequisites that must be completed prior to enrolling. Consult a schedule of classes, college catalog, or a counselor for further information.

□	REQUIRED MAJOR COURSES: Emphasis: Manufacturing Technology	Course No.	Course Title	Units
	Required Major Course	CMA-74	Industrial 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 (=19.0)	
□	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-75	Engineering Drawing with Solidworks	3.0
	Required Major Elective	CMA-78	Computer - Aided Mechanical Drafting and Detailing	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)	

REQUIRED GENERAL EDUCATION COURSES	Course No.	Course Title	Units
Natural Sciences (Select a minimum of 3 units from catalog GENERAL EDUCATION REQUIREMENTS)			3.0
Social & Behavioral Sciences (Select a minimum of 3 units from catalog GENERAL EDUCATION REQUIREMENTS)			3.0
Humanities (Select a minimum of 3 units from catalog GENERAL EDUCATION REQUIREMENTS)			3.0
Ethnic Groups in the United States (Select a minimum of 3 units from catalog GENERAL EDUCATION REQUIREMENTS)			3.0
Language and Rationality (9 Units)			
A. Written Composition	ENG-1A	College Composition and Reading	3.0
B. Communication and Analytical Thinking	MAT-123*	Intermediate Algebra	5.0
Communication and Analytical Thinking			1.0
		General Education	21.0
		Required Major Courses and Restricted Major Electives	24.0
		ELECTIVES (Courses Numbered 1–199) required when GE units plus Degree units total are fewer than 60.0	15.0
		TOTAL UNITS	60.0

**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.

TRANSFER STUDENTS: Completing the AS degree does not meet all the requirements for transfer. Students planning to transfer to a university should follow the requirements of the four-year university. Information on course equivalencies and major preparation requirements for the University of California (UC) and California State University (CSU) systems are available online at [http://www.hartnell.edu/transfer](#). Please consult with a Hartnell College counselor to review transfer requirements.