

MANUFACTURING TECHNOLOGY

PROGRAM

- **Associate of Science (A.S.)**



**HARTNELL
COLLEGE**

DESCRIPTION

The Manufacturing Technology program is designed to prepare the student for an entry level position in the workforce and to provide continuing education. It focuses on 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.

The Associate of Science in Manufacturing Technology is a Career Technical Education degree with the goal of preparing students for entry level positions in the manufacturing workforce. These opportunities include the fields of manufacturing, fabrication, and maintenance, and some examples of available careers are Industrial Technicians, Machine Tool Operators, and Machine Tool Programmers. In the college's region there is currently a significant gap between the annual demand for a manufacturing workforce and the annual supply.

LEADS TO CAREER OPPORTUNITIES SUCH AS:

- Basic Machinist
- Hydraulics Pneumatics Technician
- Industrial Electricity Technician
- Maintenance Technician
- Metal Fabricator

TRANSFER PREPARATION

Courses that fulfill major requirements for an associate degree may differ from those needed to prepare for transfer. Students who plan to transfer to a four-year college or university should schedule an appointment with a Hartnell College counselor to develop a student education plan before beginning their program.

TRANSFER RESOURCES

www.ASSIST.org – CSU and UC Articulation Agreements and Major Search Engine

CSU System Information -
<http://www2.calstate.edu>

FINANCIAL AID

Paying for the cost of a college education requires a partnership among parents, students and the college. As the cost of higher education continues to rise we want you to know that Hartnell College offers a full array of financial aid programs, federal loan programs, and fee waivers.

<https://www.hartnell.edu/students/fa/net-price-calculator.html>

MANUFACTURING TECHNOLOGY (AS.MFGT)

ASSOCIATE OF SCIENCE

Program Outcomes: Upon successful completion of this 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.

Required Major Courses (19 units)

<input type="checkbox"/> CMA-74 – Industrial Drawing and Print Reading	3.0
<input type="checkbox"/> MFGT-70 – Introduction to Mechanized Agriculture	3.0
<input type="checkbox"/> MFGT-130 – Introduction to Metal Fabrication	3.0
<input type="checkbox"/> MFGT-140 – Introduction to Industrial Hydraulics and Pneumatics	2.0
<input type="checkbox"/> MFGT-150 – Introduction to Industrial Electricity	2.0
<input type="checkbox"/> MFGT-169 – Hazmat and Industrial Safety	2.0
<input type="checkbox"/> MFGT-180 – Industrial Workplace Skills	1.0
<input type="checkbox"/> WLD-150 – Basic Welding	3.0

Major Electives (Complete 2-3 units)

<input type="checkbox"/> MFGT-131 – Intermediate Metal Fabrication	3.0
<input type="checkbox"/> MFGT-141 – Intermediate Industrial Hydraulics and Pneumatics	2.0
<input type="checkbox"/> MFGT-151 – Intermediate Industrial Electricity	2.0

Major Electives (Complete 5-6 units)

<input type="checkbox"/> CMA-75 – Engineering Drawing and Solidworks	3.0
<input type="checkbox"/> CMA-76 – Computer Aided Mechanical Drafting and Detailing	3.0
<input type="checkbox"/> CMA-81 – Computer Aided Drafting and Design I	3.0
<input type="checkbox"/> MFGT-71 – Agricultural and Industrial Equipment Operation	3.0
<input type="checkbox"/> MFGT-75 – Agriculture Machinery and Management	3.0
<input type="checkbox"/> MFGT-132 – Advanced Metal Fabrication	3.0
<input type="checkbox"/> WLD-151 – Introduction to GTAW/TIG Welding	3.0
<input type="checkbox"/> WLD-152 – Sheet Metal Fabrication	2.0

SUBTOTAL: 26-28 UNITS

General Education – Required Courses

Students must complete one of the following General Education Plans:

HCCD GE (see page 68) **MAT-126** or higher

- Natural Sciences Social & Behavioral Sciences Humanities
- Ethnic Groups in the US Language and Rationality

SUBTOTAL: 21 UNITS

Students can double-count required courses and courses for General Education

■ **Electives (Courses Numbered 1-199) required when degree units plus GE units total fewer than 60.**

TOTAL: 60 UNITS