



<b>Level 1</b>	Principles of Manufacturing
	<b>Robotics I</b>
<b>Level 2</b>	
	<b>Robotics II</b>
<b>Level 3</b>	
	<b>Practicum in Manufacturing</b>
<b>Level 4</b>	

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
FANUC Robot Operator 1	Engineer, Professional	Electro-mechanical Engineering/Technology	Electrical Engineering	Electrical Engineering
Mastercam Associate Level Certification	Certified Quality Technician	Certified Quality Technician	Industrial Engineering	Industrial Engineering
	Plant Maintenance Technologist	Industrial Mechanics and Maintenance Technology	Mechanical Engineering	Mechanical Engineering

Occupations	Median Wage	Annual Openings	% Growth
Electro-Mechanical Assemblers	\$30,160	951	9%
Electro-Mechanical Technicians	\$56,555	127	9%
Industrial Machinery Mechanics	\$49,816	3,788	27%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES	
Exploration Activities:	Work Based Learning Activities:
SkillsUSA Industry Tours Guest Speakers	Participate in internships

Additional industry-based certification information is available on the TEA CTE website. For more information on postsecondary options for this program of study, visit TXCTE.org.

The Advanced Manufacturing and Machinery Mechanics program of study focuses on the assembly, operation, maintenance, and repair of electromechanical equipment or devices. CTE learners may work in a variety of mechanical fields, gaining knowledge and experience in robotics, refinery and pipeline systems, deep ocean exploration, or hazardous waste removal. CTE concentrators may work in a variety of fields of engineering.



The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

Successful completion of the Advanced Manufacturing and Machinery program of study will fulfill requirements of the Business and Industry or STEM endorsement if the math and science requirements are met. Revised - July 2020

# COURSE INFORMATION: ADVANCED MANUFACTURING AND MACHINERY MECHANICS (ROBOTICS)

COURSE NAME	SERVICE ID	PREREQUISITES (PREQ)	Grade
Principles of Manufacturing	13032200 (1 credit)	None	9-10
Robotics I	13037000 (1 credit)	None	10-12
Robotics II	13037050 (1 credit)	PREQ: Robotics I	11-12
Practicum in Manufacturing	13033000 (2 credits)	PREQ: Completion of two CTE courses within this program of study	12

FOR ADDITIONAL INFORMATION ON THE ADVANCED MANUFACTURING AND MACHINERY MECHANICS (ROBOTICS) PROGRAM OF STUDY, PLEASE CONTACT YOUR LOCAL COUNSELOR OR VISIT

[HTTPS://AMTECH.AMAISD.ORG](https://amtech.amaisd.org)



# ADVANCED MANUFACTURING AND MACHINERY MECHANICS (ROBOTICS) PROGRAM OF STUDY

## **Principles of Manufacturing**

**Grade Placement: 9–10, Credit: 1**

**Prerequisite: None.**

In Principles of Manufacturing, students are introduced to knowledge and skills used in the proper application of principles of manufacturing. The study of manufacturing technology allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities. Students will gain an understanding of what employers require to gain and maintain employment in manufacturing careers.

**Course #0700**

**CHS, PDHS**

## **Robotics I**

**Grade Placement: 10-12, Credit: 1**

**Prerequisite: None.**

In Robotics I, students will transfer academic skills to component designs in a project- based environment through implementation of the design process. Students will build prototypes or use simulation software to test their designs. Additionally, students will explore career opportunities, employer expectations, and educational needs in the robotic and automation industry.

**Course #0808c**

**AMTECH**

## **Robotics II**

**Grade Placement: 11–12, Credit: 1**

**Prerequisite: Robotics I.**

In Robotics II, students will explore artificial intelligence and programming in the robotic and automation industry. Through implementation of the design process, students will transfer academic skills to component designs in a project-based environment. Students will build prototypes and use software to test their designs.

**Course #0824c**

**AMTECH**

## **Practicum in Manufacturing**

**Grade Placement: 12, Credits: 2**

**Prerequisite: Completion of two CTE courses within this program of study.**

The Practicum in Manufacturing course is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience. The Extended Practicum in Manufacturing course is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience.

**Course #0708c**

**AMTECH**