



Principles of Manufacturing

**Level 1**

Manufacturing Engineering Technology I

**Level 2**

Diversified Manufacturing I

**Level 3**

Manufacturing Engineering Technology II

Diversified Manufacturing II

Robotics I

**Level 4**

Practicum in Manufacturing

Robotics II

Practicum in Manufacturing II

| 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                |
| MSSC Certified Production Technician<br><br>NCCER Industrial Maintenance Mechanic | 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:                                   |
|--|---|
| Participate in SkillsUSA and local STEM events | Apprenticeship at a local business or industry<br>TX-FAME Program |

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

| COURSE NAME                             | SERVICE ID   | PREREQUISITS (PREQ)<br>COREQUISITES (CREQ)   | Grade |
|---|--|--|-------|
| Principles of Manufacturing             | 13032200 (1 credit)  | None   | 9-12  |
| Manufacturing Engineering Technology I  | 13032900 (1 credit)  | None   | 10-12 |
| Robotics I                              | 13037000 (1 credit)  | None   | 9-10  |
| Manufacturing Engineering Technology II | 13032950 (1 credit)  | PREQ: Manufacturing Engineering Technology I | 11-12 |
| Robotics II                             | 13037050 (1 credit)  | PREQ: Robotics I                             | 10-12 |
| Practicum in Manufacturing              | 13033000 (2 credits)<br>13033005 (3 credits)<br>13033010 (2 credits)<br>13033015 (3 credits) | None   | 12    |
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FOR ADDITIONAL INFORMATION ON THE MANUFACTURING CAREER CLUSTER, PLEASE CONTACT:

Jennifer Bullock | Jennifer.Bullock@tea.texas.gov

<https://tea.texas.gov/cte>

(District) offers career and technical education programs in (types of programs offered). Admission to these programs is based on (admission standards). It is the policy of (District) not to discriminate on the basis of race, color, national origin, sex or handicap in its vocational programs, services or activities as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; and Section 504 of the Rehabilitation Act of 1973, as amended. It is the policy of (District) not to discriminate on the basis of race, color, national origin, sex, handicap, or age in its employment practices as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; the Age Discrimination Act of 1975, as amended; and Section 504 of the Rehabilitation Act of 1973, as amended. (District) will take steps to assure that lack of English language skills will not be a barrier to admission and participation in all educational and vocational programs. For information about your rights or grievance procedures, contact the Title IX Coordinator at (physical address of Coordinator) (email address of Title IX Coordinator), (phone number of Title IX Coordinator), and the Section 504 Coordinator at (physical address of Coordinator), (email address of Section 504 Coordinator), (phone number of Section 504 Coordinator)