Manufacturing Career Cluster

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.

Regional Program of Study: Electronics Technology Approved in ESC Regions 6, 10, 11, 12, and 13

The list of approved ESC regions is updated every school year. Be sure to check the CTE regional program of study website for updates.

The Electronics Technology program of study focuses on occupational and education opportunities associated with the development of engineered products, voltage installation and testing, electrical schematics, semiconductors, millwrights, avionics, and electrical repairers. It includes exploration of a variety of electrical uses throughout residential and commercial applications such as chip making troubleshooting electrical lines from audio video production to commercial buildings. This program of study addresses how to troubleshoot, create, repair, and read electrical blueprints, technical drafting, and the applied mathematics of electricity throughout industry.

Secondary Courses for High School Credit

Level 1	• Principles of Manufacturing • Principles of Applied Engineering • Blueprint Reading for Manufacturing Applications
Level 2	• AC/DC Electronics
Level 3	• Digital Electronics • Solid State Electronics
Level 4	• Applied Mathematics for Technical Professionals • Practicum in Manufacturing • Practicum in Manufacturing + Extended Practicum in Manufacturing • Career Preparation for Programs of Study • Career Preparation for Programs of Study + Extended Career Preparation

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	• Intern at a chip manufacturing company • Intern at a millwright company • Job shadow an electrician
Expanded Learning Opportunities	• Tour a chip manufacturer • Tour a local electrical company • Participate in SkillsUSA

Aligned Industry-Based Certifications

- C-101 Certified 4.0 Associate I - Basic Operations
- C-200 Certified Industry 4.0 Automation Systems Specialist I - 201 Electrical Systems 1
- C-200 Certified Industry 4.0 Automation Systems Specialist I - 202 Electric Motor Control Systems 1
- Certified Manufacturing Associate (CMfgA)
- Commercial Electrician
- Core
- Electrical Apprenticeship Certificate Level 1
- Certified Industry 4.0 Associate Fundamentals
- Fundamentals of Electricity - AC/DC
- HBI Pre-Apprenticeship Certificate Training (PACT), Basic Electrical
- Industrial Millwright
- Introduction to Electronics
- Millwright Level I
- Millwright Level II
- Tosa Certification for Autodesk AutoCAD (Advanced or Expert)
- TRIO Electrical Pre-Apprenticeship (EPP) Certification

Example Postsecondary Opportunities

Associate Degrees
- Electromechanical Technology
- Electronic Controls Technology
- Electronics Technician Specialization

Bachelor's Degrees
- Electrical Engineering
- Engineering Technology

Master's, Doctoral, and Professional Degrees
- Electrical Engineering
- Master of Science in Engineering with a major in semiconductor science and engineering

Additional Stackable IBCs/Licenses
- Semiconductor Technician Advanced Rapid Start
- Semiconductor Manufacturing Operator

Example Aligned Occupations

Electrical and Electronics Repairers
Median Wage: $73,756
Annual Openings: 857
10-Year Growth: 18%

Electrical and Electronic Engineering Technologists and Technicians
Median Wage: $64,216
Annual Openings: 825
10-Year Growth: 14%

Semiconductor Processing Technicians
Median Wage: $35,963
Annual Openings: 592
10-Year Growth: 10%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024.

For more information visit:
https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/m-electronics-technology-extendedpptx.pdf

Successful completion of the Electronics Technology program of study will fulfill requirements of the Business and Industry endorsement.

Texas Education Agency

Electronics Technology

Manufacturing Career Cluster

Regional Program of Study: Electronics Technology

Course Information

Level 1

Course	Prerequisites | Corequisites	Career Clusters
Principles of Manufacturing* 13032200 (1 credit)	**Prerequisites:** None **Corequisites:** None **Recommended Prerequisites:** Algebra I or Geometry **Recommended Corequisites:** None	
Principles of Applied Engineering* 13036200 (1 credit)	**Prerequisites:** None **Corequisites:** None **Recommended Prerequisites:** None **Recommended Corequisites:** None	
Blueprint Reading for Manufacturing Applications* N1303684 (1 credit)	**Prerequisites:** None **Corequisites:** None **Recommended Prerequisites:** Algebra I, Geometry, and Principles of Construction **Recommended Corequisites:** None	

Level 2

Course	Prerequisites | Corequisites	Career Clusters
AC/DC Electronics 13036800 (1 credit)	**Prerequisites:** None **Corequisites:** None **Recommended Prerequisites:** Principles of Applied Engineering **Recommended Corequisites:** None	

Level 3

Course	Prerequisites | Corequisites	Career Clusters
Digital Electronics* 13037600 (1 credit)	**Prerequisites:** Algebra I and Geometry **Corequisites:** None **Recommended Prerequisites:** None **Recommended Corequisites:** None	
Solid State Electronics* 13036900 (1 credit)	**Prerequisites:** AC/DC Electronics **Corequisites:** None **Recommended Prerequisites:** None **Recommended Corequisites:** None	

** Indicates course is included in more than one program of study in this career cluster.*

Electronics Technology

For additional information on the **Manufacturing** career cluster, contact cte@tea.texas.gov or visit https://tea.texas.gov/cte

Manufacturing Career Cluster

Regional Program of Study: Electronics Technology

Level 4

Course Information

Course	Prerequisites | Corequisites	Career Clusters
Applied Mathematics for Technical Professionals 12701410 (1 credit)	**Prerequisites:** None **Corequisites:** None **Recommended Prerequisites:** Algebra I and Geometry **Recommended Corequisites:** None	
Practicum in Manufacturing* First Time Taken: 13033000 (2 credits) Second Time Taken: 13033010 (2 credits)	**Prerequisites:** None **Corequisites:** None **Recommended Prerequisites:** None **Recommended Corequisites:** None	
Practicum in Manufacturing + Extended Practicum in Manufacturing* First Time Taken: 13033005 (3 credits) Second Time Taken: 13033015 (3 credits)	**Prerequisites:** None **Corequisites:** None **Recommended Prerequisites:** None **Recommended Corequisites:** None	
Career Preparation for Programs of Study* First Time Taken: 12701121 (2 credits)	**Prerequisites:** At least one Level 2 or higher CTE course **Corequisites:** None **Recommended Prerequisites:** None **Recommended Corequisites:** None	
Career Preparation for Programs of Study + Extended Career Preparation* First Time Taken: 12701141 (3 credits)	**Prerequisites:** At least one Level 2 or higher CTE course **Corequisites:** None **Recommended Prerequisites:** None **Recommended Corequisites:** None	

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Electronics Technology

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