

# CTE - CIP Course Details Catalog

## Cluster: Manufacturing

**CIP: 47.0105 - Industrial Electronics Technology/Technician. (Non Traditional - Female)**

**Minimum Carnegie Units: 2.00**

**Status:** Open    **Start Year:** 2011    **End Year:**

**Group 1**

**Minimum Course Selection:** School: 1    ACC: 0    Regional: 0

State Course ID	State Course Title	Max Carnegie Units	Start SY	End SY
20101A001	Energy Utilization Technology	1.00	2011	
11002A001	Communication Technology	1.00	2011	
13052A001	Production Technology	1.00	2011	
21052A002	Introduction to Technology and Engineering (Industrial)	1.00	2011	
21052A001	Foundations of Technology	1.00	2014	
20001A001	Transportation Technology	1.00	2018	

**Group 2**

**Minimum Course Selection:** School: 0    ACC: 1    Regional: 1

State Course ID	State Course Title	Max Carnegie Units	Start SY	End SY
17104A001	Industrial Electronics I	3.00	2011	
17104A002	Industrial Electronics II	3.00	2011	
13102A001	Mechatronics	3.00	2011	

**Group 3**

**Minimum Course Selection:** School: 0    ACC: 0    Regional: 0

State Course ID	State Course Title	Max Carnegie Units	Start SY	End SY
22153A001	Cooperative Education	3.00	2011	
21009A001	Robotics	3.00	2015	

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### Course Descriptions

#### **CIP: 47.0105 - Industrial Electronics Technology/Technician.**

**State Course ID:** 20101A001      **Course Title:** Energy Utilization Technology

Energy Utilization Technology is a course designed to foster an awareness and understanding of how we use energy in our industrial technological society. Areas of study include conversion of energy, electrical fundamentals, solar energy resources, alternate energy resources such as wind, water, and geothermal; fossil fuels, nuclear power, energy conservation, and computer uses in energy technology. Students use laboratory experiences to become familiar with current energy technologies.

**State Course ID:** 11002A001      **Course Title:** Communication Technology

Communication Technology is a course designed to foster an awareness and understanding of the technologies used to communicate in our modern society. Students gain experience in the areas of design and drafting, radio and television broadcasting, computers in communication, photography, graphic arts, and telecommunications.

**State Course ID:** 13052A001      **Course Title:** Production Technology

Production Technology is a course designed to foster an awareness and understanding of manufacturing and construction technology. Through a variety of learning activities, students are exposed to many career opportunities in the production field. Experiences in manufacturing include product design, materials and processes, tools and equipment including computers, safety procedures, corporate structure, management, research and development, production planning, mass production, marketing and servicing. In construction, students are exposed to site preparation, foundations, building structures, installing utilities, and finishing and servicing structures.

**State Course ID:** 21052A002      **Course Title:** Introduction to Technology and Engineering (Industrial)

Introduction to Technology & Engineering is comprised of the following areas: Production, Transportation, Communication, Energy Utilization and Engineering Design but is not limited to these areas only. This course will cover the resources, technical processes, industrial applications, material sciences, technological impact and occupations encompassed by that system.

**State Course ID:** 21052A001      **Course Title:** Foundations of Technology

The course employs teaching/learning strategies that enable students to build their own understanding of new ideas. It is designed to engage students in exploring and deepening their understanding of "big ideas" regarding technology and apply technological processes to solve real problems and develop knowledge and skills to design, modify, use and apply technology in the following areas: engineering design, manufacturing technologies, construction technologies, energy & power, information & communication technologies and emerging technologies.

**State Course ID:** 20001A001      **Course Title:** Transportation Technology

Transportation Technology is a course designed to foster an awareness and understanding of the various transportation customs that make up our mobile society. Through laboratory activities, students are exposed to the technologies of and career opportunities involved in material handling, atmospheric and space transportation, marine transportation, terrestrial transportation, and computer uses in transportation technology.

**State Course ID:** 17104A001      **Course Title:** Industrial Electronics I

This course introduces students to the skills needed to service, repair, and replace a wide range of equipment associated with automated or instrument-controlled manufacturing processes. Planned learning activities in this course allow students to become more knowledgeable in the fundamental principles and theories of electrical/electronic and hydraulic/pneumatic equipment as applied to instrumentation devices and digitally encoded radio equipment. Instruction also includes safety principles and practices, semi-conductors and transistor theory, electrical parameters and circuits, electronic component function and identification, and the use and care of related hand tools, power tools, and test equipment.

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### Course Descriptions

#### **CIP: 47.0105 - Industrial Electronics Technology/Technician.**

**State Course ID:** 17104A002      **Course Title:** Industrial Electronics II

This course provides planned learning activities designed to allow students to gain knowledge and skills in testing, maintaining, and repairing electronic equipment and systems used in the manufacturing industry. Learning activities in this course emphasizes the development of more advanced knowledge and skills than those provided in Industrial Electronics I. Skills introduced in this course include instruction in the interpretation of technical sketches, schematics, and circuit diagrams. Additional units of instruction include the identification and causes of equipment malfunctions, the repair and replacement of parts and equipment, the care and use of standard tools, equipment, and specialized instrumentation testing devices.

**State Course ID:** 13102A001      **Course Title:** Mechatronics

Electro-Mechanical Systems courses provide students with instruction and experience in components and equipment that use electricity and the power of physical forces. Students gain an understanding of the principles of electricity and mechanics and their application to gears, including hydraulic/pneumatic equipment, cams, levers, circuits, and other devices used in the manufacturing process or within manufactured goods.

**State Course ID:** 22153A001      **Course Title:** Cooperative Education

Cooperative Education is a capstone course designed to assist students in the development of effective skills and attitudes through practical, advanced instruction in school and on the job through cooperative education. Students are released from school for their paid cooperative education work experience and participate in 200 minutes per week of related classroom instruction. Classroom instruction focuses on providing students with job survival skills and career exploration skills related to the job and improving students' abilities to interact positively with others. For skills related to the job, refer to the skill development course sequences, the task list or related occupational skill standards of the desired occupational program. The course content includes the following broad areas of emphasis: further career education opportunities, planning for the future, job-seeking skills, personal development, human relationships, legal protection and responsibilities, economics and the job, organizations, and job termination. A qualified career and technical education coordinator is responsible for supervision. Written training agreements and individual student training plans are developed and agreed upon by the employer, student and coordinator. The coordinator, student, and employer assume compliance with federal, state, and local laws and regulations.

**State Course ID:** 21009A001      **Course Title:** Robotics

Robotics courses develop and expand students' skills and knowledge so that they can design and develop robotic devices. Topics covered in the course may include mechanics, electrical and motor controls, pneumatics, computer basics, and programmable logic controllers.