

Industrial Technology, Certificate

Plan 990

Purpose

Industrial operations need highly skilled personnel to build and maintain equipment and systems that are controlled by electrical, hydraulic, pneumatic, and mechanical devices. The industrial technology curriculum is designed to prepare students to build equipment, install machinery and maintain or repair electrical wiring and fixtures, hydraulic and pneumatic devices, programmable logic controlled systems, and heating and air conditioning systems found in institutional, industrial, and commercial settings.

This curriculum integrates training from a variety of disciplines: electrical, mechanical, hydraulics and pneumatics, welding, drafting and design, and heating, ventilation, and air conditioning. These technical courses are supported by a solid core of general education courses that will aid students in developing important practical business application skills. This broad-based interdisciplinary training prepares students to be competent industrial technicians who are adaptable to multiple industrial environments. Modern industry refers to these individuals as multi-craft technicians.

Program Requirements and Special Conditions

Students must meet ESCC admission requirements. Students must also complete placement tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, ESCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

Program Learning Outcomes

Students will be able to:

- Identify typical tools and proper use of a variety of devices including precision measurement.
- Read and interpret blueprints in the welding industry.
- Perform data collection and evaluation for equipment used in the industrial environment.

Program Curriculum and Suggested Sequence of Courses

1st Semester	Credits	Course Details
AIR 121 Air Conditioning and Refrigeration I	3	
AIR 276 Refrigerant Usage EPA Certification	2	
DRF 175 Schematics and Mechanical Diagrams	2	
IND 103 Industrial Methods	2	
MTH 111 or MTH 130 (Basic Technical Mathematics or Fundamentals of Reasoning)	3	
SAF 130 Industrial Safety – OSHA 10	1	
SDV 101 or SDV 100 (Orientation to Engineering & Technologies or College Success Skills)	1	
<i>Total Credits</i>	<i>13</i>	
2nd Semester	Credits	Course Details
ENG 111 or ENG 115 (College Composition I or Technical Writing)	3	
IND 145 Introduction to Metrology	3	
HLT 106 First Aid and Safety	2	
WEL 150 Welding Drawing and Interpretation	3	
<i>Total Credits</i>	<i>11</i>	
3rd Semester	Credits	Course Details
ELE 118 Practical Electricity	2	
MEC 211 Machine Design I	4	
WEL 123 Shielded Metal Arc Welding (Basic)	4	

<i>Total Credits</i>	<i>10</i>	
4th Semester	Credits	Course Details
ELE 149 Wiring Methods in Industry	3	
MEC 165 Applied Hydraulics, Pneumatics and Hydrostatics	3	
WEL 124 Shielded Metal Arc Welding (Advanced)	4	
<i>Total Credits</i>	<i>10</i>	
Total Credits For Program	44	

Certifications

Courses in this program may help students attain the following license(s) or certification(s):

- EPA Section 608 Technician Certification, U.S. Environmental Protection Agency
- 10-hour Construction Safety and Health, Occupational Safety and Health Administration