

# Industrial Technology

## Certificate (CERT)

### 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, 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:

- Identify typical tools and proper use of a variety of devices including precision measurement.
- Be able to 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

1 <sup>st</sup> Semester	Credits	Course Options
AIR 121 Air Conditioning and Refrigeration I	3	
DRF 175 Schematics and Mechanical Diagrams	2	
IND 103 Industrial Methods	2	
MTH 111 Basic Technical Mathematics	3	See Note 2
SAF 130 Industrial Safety – OSHA 10	1	
SDV 101 Orientation to Engineering and Technologies	1	
<i>Total Credits</i>	<i>12</i>	
2 <sup>nd</sup> Semester	Credits	Course Options
AIR 276 Refrigerant Usage EPA Certification	1	
ENG 111 College Composition I	3	ENG 115
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>12</i>	
3 <sup>rd</sup> Semester	Credits	Course Options
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>	
4 <sup>th</sup> Semester	Credits	Course Options

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>	
<b>Total Credits For Program</b>	<b>44</b>	

**Notes and Additional Curriculum Options**

1. Part-time students should consult their faculty advisors regarding appropriate course sequences.
2. Students who have completed MTH 103 have satisfied this requirement.