I.T.C. Energy Systems Industrial Maintenance Mechanic

Student Outcomes:

1. Describe and conduct safe work practices in laboratory and industrial environments.

2. Identify and apply societal and regulatory codes and standards.

3. Select appropriate test equipment to troubleshoot and analyze mechanical systems and electrical, electronic, and motor control related circuits.

4. Describe fundamental mechanical principles, fluid mechanics, thermodynamics, material science, and equipment design.

5. Conduct maintenance, troubleshooting and repair of common industrial mechanical systems.

6. Interpret and utilize technical documentation related to mechanical, electrical and motor control systems.

7. Demonstrate basic structural welding.

8. Demonstrate basic computer-aided drafting and design.

9. Conduct commissioning practices for equipment setup and alignment.

10. Recognize specific equipment applications for reactive, preventive, predictive, and proactive maintenance.

Program Admission Requirements

Placement Test	Math
SAT	360
ACT	14
ALEKS	14

Major Requirements

Code	Title	Credits
Choose two credits from the following:		**2**
ESET 1100 & 1100L	Engineering Technology Orientation and Introduction to an Industrial Environment Laboratory	
or ESET 1162	Industrial Safety and Regulations	
Choose from the following:		**2-3**
ESET 1117 & 1117L	Introduction to Industrial Thermal Systems and Introduction to Industrial Thermal Systems Lab	
or ESET 2220	Thermal Cycles and Heat Transfer	
ESET 1118	Industrial Maintenance Mechanic I	2
ESET 1118L	Industrial Maintenance Mechanic Lab I	1
ESET 1119	Industrial Maintenance Mechanic II	2
ESET 1119L	Industrial Maintenance Mechanic Lab II	1
ESET 1121	Basic Electricity and Electronics	4
ESET 1121L	Basic Electricity and Electronics Laboratory	3
ESET 1122	Electrical Systems and Motor Control Theory	3
ESET 1122L	Electrical Systems and Motor Control Theory Laboratory	1
ESET 1123	Mechanical Power Transmission I	2
ESET 1123L	Mechanical Power Transmission Laboratory I	2
ESET 1125	Introduction to Structural Welding	1
ESET 1126	Introduction to Mechanical Drafting and Computer Aided Design	1
ESET 1127	Mechanical Power Transmission II	2
ESET 1127L	Mechanical Power Transmission Laboratory II	2
Choose from the following:		**5**
ESET 1140	Applied Technical Intermediate Algebra	
MATH 1143 & MATH 1144	Precalculus I: Algebra and Precalculus II: Trigonometry	
MATH 1147	Precalculus	
ESET 2243	Hydraulic and Pneumatic Power	2
ESET 2243L	Hydraulic and Pneumatic Power Laboratory	2
ESET 2246	Materials and Metallurgy	2
Total Credits		**42-43**