

Program Name: Solar/Wind Energy Installation Certificate	Outcomes	AET 102 Introduction to Alternative Energy	AET 106 Photovoltaic Installation	AET 108 Wind Energy Installation	INT 110 Fundamentals of Electricity	INT 104 Facilities Safety and Compliance	INT 101 Introduction to Industrial Technology	AET 269 Internship	AET 240 Capstone
Outcome #1	Distinguish between renewable and non-renewable energy sources.	Identify and differentiate alternative energy systems							
Outcome #2	Identify energy inefficiencies in residential and business structures.	Understand energy efficiency in building design					Explain the concepts and importance of proactive/predictive maintenance	X	X
Outcome #3	Understand specifications for solar energy systems.	Identify applications for use of alternative and renewable energy Understand basic electrical load	Specify and install a typical photovoltaic system. Calculate basic electrical load		Students will be able to describe the characteristics and differences between conductors and insulators	Identify the function of each code/agency and the areas of facility operation over which they preside		X	X
Outcome #4	Understand specifications for wind energy systems.	Understand basic electrical load		Specify and install a typical wind energy system	Students will be able to explain the concepts of current flow, AC/DC circuits and Ohms law.	Identify the function of each code/agency and the areas of facility operation over which they preside	Identify mechanical fasteners, power transmission, bearing and coupling components.	X	X
Outcome #5	Perform test procedures (start-up) of renewable energy systems.		Start up a photovoltaic system	Start up a wind energy system	Students will be able to explain the operation and application of common components such as AC and DC motors, relays, switches, power supplies, overload devices and lighting.		Locate and use online technical resources for the application and maintenance of industrial and commercial components	X	X
Outcome #6	Perform data collection and evaluate renewable energy systems.	Conduct and evaluate data collection from alternative energy systems	Collect and evaluate data from a solar photovoltaic system.	Collect and evaluate data from a wind energy system	Students will be able to recognize and use common test equipment to evaluate electrical circuits.		Recognize signs and causes of failure of power transmission components	X	X
Outcome #7	Maintain and troubleshoot Solar and Wind Energy systems.	Understand basic electrical load	Maintain and trouble-shoot a photovoltaic system	Maintain and trouble-shoot a wind energy system.	Students will be able to trouble-shoot basic electrical circuits using schematic diagrams		Follow basic troubleshooting procedures for common mechanical systems and processes	X	X
Outcome #8	Recognize standard safety and compliance procedures in the workplace.		Work safely and efficiently	Work safely and efficiently	Students will be able to identify hazards of electrical circuits and be able to work safely	Identify codes and regulatory authorities and their governing agencies. Work safely within the renewable energy industry	Learn how to work safely in a team environment using standard OSHA specified procedures	X	X