

Program Name: Alternative Energy Technology Geothermal Certificate	Outcomes	AET 102 Introduction to Alternative Energy	AET 104 Geothermal Installation	INT 110 Fundamentals of Electricity	INT 107 Introduction to HVAC	INT 104 Facilities Safety and Compliance	INT 101 Introduction to Industrial Technology	INT 105 Plumbing and Pipefitting	INT 113 Instrumentation and Process Control 1	AET 269 Internship	AET 240 Capstone
<b>Outcome #1</b>	Identify energy inefficiencies in residential and business structures.	Understand energy efficiency in building design			Understand SEER and COP energy ratings		Explain the concepts and importance of proactive/predictive maintenance			X	X
<b>Outcome #2</b>	Understand specifications for Geothermal energy systems.	Identify applications for use of alternative and renewable energy	Understand typical Geothermal applications and design		Understand HVAC/R system components and how they work	Identify the function of each code/agency and the areas of facility operation over which they preside		Demonstrate effective installation of common plumbing fixtures	Specify and install instrumentation equipment required to accomplish needed results in a control system	X	X
<b>Outcome #3</b>	Perform test procedures (start-up) of a Geothermal energy system.	Understand basic electrical load	Perform Geo-thermal installation and testing Start up a geothermal 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.	Understand refrigeration theory Understand HVAC/R system components and how they work					X	X
<b>Outcome #4</b>	Perform data collection and evaluate a Geothermal energy system.	Conduct and evaluate data collection from alternative energy systems	Collect and evaluate operational data	Students will be able to recognize and use common test equipment to evaluate electrical circuits.		Identify the function of each code/agency and the areas of facility operation over which they preside.	Recognize signs and causes of failure of power transmission components		Collect data from an instrumentation system Set-up and test an installed instrumentation system	X	X
<b>Outcome #5</b>	Maintain and troubleshoot a Geothermal energy system.	Understand basic electrical load	Identify problems and take corrective action. Identify routine and preventive maintenance requirements and perform such task.	Students will be able to trouble-shoot basic electrical circuits using schematic diagrams	Understand evacuation, leak testing, and charging procedures		Follow basic troubleshooting procedures for common mechanical systems and processes	Assess basic plumbing troubleshooting skills	Provide routine maintenance for an instrumentation system. Troubleshoot common instrumentation systems	X	X
<b>Outcome #6</b>	Recognize standard safety and compliance procedures in the workplace.		Follow safe work practices.	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.	Learn how to work safely in a team environment using standard OSHA specified procedures	Develop safe and effective application skills from cognitive learning		X	X