Sinclair Community College
444 E. Third St.
Dayton, OH 45402

Master Syllabus

EGV 2151 - Solar Thermal Systems

Division: Science, Mathematics and Engineering

Department: Engineering Technology Design

Credit Hour Total: 3.0 **Lecture Hrs:** 2.0 **Lab Hrs:** 2.0

Date Revised: June 2014

Course Description:

This course covers some of the basic cognitive materials needed to install and maintain solar thermal systems. Designed to help individuals better prepare for the North American Board of Certified Energy Practitioner (NABCEP) Solar Thermal Installer examination but does not provide all of the materials needed to complete the certification examination. Two classroom, two lab hours per week.

General Education Outcomes:

- Written Communication Competency
- Critical Thinking/Problem Solving Competency

Course Outcomes:

Solar energy fundamentals
Define and describe solar energy fundamentals.

Assessment Method: Locally developed exams
Performance Criteria: 70% or better on exams

Mechanical/electrical installation
Describe the installation and operation requirements for mechanical/plumbing equipment and electrical control systems.

Assessment Method: Locally developed exams
Performance Criteria: 70% or better on exams

System components
Identify and describe the components of a solar thermal energy systems.

Assessment Method: Locally developed exams
Performance Criteria: 70% or better on exams

Site assessment
Conduct a site assessment for installation of a solar thermal energy system.

Assessment Method: Portfolios
Performance Criteria: 70% or more of available points.

System installation
Describe the installation techniques for solar collectors, water heaters and storage tanks.

Assessment Method: Locally developed exams
Performance Criteria: 70% or better on exams

Maintenance and troubleshooting
Describe maintenance and troubleshooting requirements for solar thermal systems.

Assessment Method: Locally developed exams
Performance Criteria: 70% or better on exams

Outline:

Working safely with solar thermal systemsIdentifying systems and their componentsAdapting a system design Conducting a site assessmentInstalling solar collectorsInstalling water heaters and storage tanksInstalling pipingInstalling mechanical/plumbing equipmentInstalling electrical controlsInstalling operational and identification tags and labelsPerforming a system checkoutMaintaining and troubleshooting a solar thermal system