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

Master Syllabus

EGV 2201 - Electrical Lighting & Motors

Division: Science, Mathematics and Engineering

Department: Engineering Technology Design

Credit Hour Total: 2.0 **Lecture Hrs:** 1.0 **Lab Hrs:** 2.0

Prerequisite(s): EET 1120 AND EGV 1251 AND PHY 1100 OR PHY 1131 OR PHY 1141 OR PHY 2201

Date Revised: March 2012

Course Description:

This course covers components of lighting systems, control strategies, current technologies and electric motors. Energy efficiency opportunities and environmental impacts are identified and analyzed. One classroom, two lab hours per week.

General Education Outcomes:

- Written Communication Competency
- Critical Thinking/Problem Solving Competency

Course Outcomes:

Lighting and motor systems
Describe the basic operation of lighting and motor systems.

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

Instrument use
Demonstate proper use of various required analytical instruments, including the multimeter and light meter.

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

Frequency drives
Explain the operation and application of variable speed and variable frequency drives and their impact on energy consumption.

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

Energy use
Estimate energy use of lighting systems and motors.

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

Energy efficiency
List and describe energy efficiency opportunties for lighting and motors.

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

Outline:

Motors and safety review: ammeter, voltmeter, ohmmeter, lightmeter
Motor and lighting electrical circuit configurations; schematic, pictorial, and installation diagrams
Power distribution and voltage systems
Electrical circuits and circuits components for lighting systems and motors
Sizing motors, including energy efficient motors
Components for electric motors
Variable speed drives
Operational costs,potential savings and environmental impact