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

Master Syllabus

EGR 1122 - Fundamentals of Remote Sensing in Intelligence

Division: Science, Mathematics and Engineering

Department: Automation and Control Technology

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

Prerequisite(s): MAT 1280

Other Prerequisite(s): AND Approval of Department

Date Revised: March 2014

Course Description:

This course emphasizes the science, technology and applications of remote sensing, bringing together related information in materials science, physics, optics, electronics, computer processing and other disciplines. Students completing this course will be equipped to approach problems ranging from environmental to social to industrial data gathering and interpretation. Two classroom, two lab hours per week.

General Education Outcomes:

- Written Communication
- Critical Thinking/Problem Solving
- Computer Literacy
- Information Literacy

Course Outcomes:

Wave/particle nature of light
Describe dual wave/particle nature of light.

Assessment Method: Locally developed exams
Performance Criteria: 70% or higher correct responses

Assessment Method: Simulations
Performance Criteria: 80% or higher correct answers

History of remote sensing
Describe geometric considerations and interpret visual images; recognize multispectral imagery.

Assessment Method: Performance appraisals
Performance Criteria: 80% or higher correct answers

Thermal infrared imagery
Describe features of thermal infrared imagery.

Assessment Method: Behavioral observations
Performance Criteria: Identify 80% of images correctly

Outline:

Appropriate phenomenology for solution of remote sensing problems - collection and processing of data
Dual wave/particle nature of light
Wavebands of the spectrum of light relevant to remote sensing
Spatial, temporal, spectral, and radiometric characteristics of sources
Energy carried by light from a source to a remote sensor
Photoelectric effect
Elementary photogrammetry
Non-literal multispectral imagery
Variety and utility of remote sensing in our environment
Relate the history of remote sensing from various platforms
Geometric considerations, visual photographic images, non-literal multi-spectral imagery, and thermal infrared imagery