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

Master Syllabus

CAT 1501 - Fundamentals of Surveying & Mapping

Division: Science, Mathematics and Engineering

Department: Civil Engineering Technology

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

Prerequisite(s): MAT 1290

Other Prerequisite(s): OR Other appropriate Math placement test score

Date Revised: August 2016

Course Description:

This course uses covers the fundamental principles of distance, elevation and angular measurements used in the practice of engineering surveys. It also includes basic error theory in field observations and mathematical calculations, level circuit and traverse field techniques and basic principles of digital map making. Two classroom, three lab hours per week.

General Education Outcomes:

- Critical Thinking/Problem Solving Competency
- Values/Citizenship/Community Competency

Course Outcomes:

Measurement Techniques
Demonstrate accurate measurement techniques to solve construction related problems.

Assessment Method: Behavioral observations
Performance Criteria:

70% or higher based on performance checklist

Assessment Method: Locally developed exams
Performance Criteria:

70% or higher correct responses on written exam

Surveying Equipment
Demonstrate proper use of surveying equipment.

Assessment Method: Behavioral observations
Performance Criteria:

70% or higher based on a performance checklist

Surveying Mathematics
Apply basic mathematical relationships to the surveying process.

Assessment Method: Locally developed exams
Performance Criteria:

70% or higher correct responses on written exams

Outline:

Area and volume calculations

Error prorogation

Historic surveying units

Field note records

Distance and direction measurement

Differential and trigonometric leveling

Plan, profile, cross-section drawings

Topographic mapping