

Master Syllabus

CAT 2531 - Advanced 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): CAT 1501 AND MAT 1290 OR MAT 1470 OR MAT 2270 OR MAT 1580

Date Revised: December 2016

Course Description:

Utilization of surveying equipment and Computer Aided Drafting (CAD) software to perform field data collection and produce civil engineering drawings. Two classroom, three lab hours per week.

General Education Outcomes:

- Critical Thinking/Problem Solving Competency

Course Outcomes:

Field Data Collection

Perform field data collection to capture positions of natural and cultural features.

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 exams

Highway Curves

Compute horizontal and vertical curves used in highway design.

Assessment Method: Locally developed exams

Performance Criteria:

70% or higher correct responses on written exams

Base Drawings

Utilize CAD software for surveying applications and base drawings.

Assessment Method: Locally developed exams

Performance Criteria:

70% or higher correct responses on written exams

Assessment Method: Portfolios

Performance Criteria:

Score at least a "7" out of 10 based on a performance rubric

Horizontal and Vertical Control Networks

Utilize surveying equipment to establish and adjust horizontal and vertical control networks.

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 exams

Outline:

Vertical control network

Horizontal control network

Data collection

Preliminary mapping

Route geometry

Design drawings