

## Master Syllabus

### CAT 2561 - Route Surveying with Construction Applications

**Division:** Science, Mathematics and Engineering

**Department:** Civil Engineering Technology

**Credit Hour Total:** 2.0

**Lecture Hrs:** 1.0 **Lab Hrs:** 2.0

**Prerequisite(s):** CAT 1501

**Date Revised:** January 2015

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#### Course Description:

Solving complex surveying problems for construction layout of buildings, sites and roads using appropriate mathematical calculations and surveying equipment. One classroom, two lab hours per week.

#### General Education Outcomes:

- Critical Thinking/Problem Solving Competency

#### Course Outcomes:

##### Horizontal and vertical control

Establish horizontal and vertical control networks to determine the boundaries of a construction site.

**Assessment Method:** Behavioral observations

**Performance Criteria:**

70% or higher based on a performance checklist

**Assessment Method:** Locally developed exams

**Performance Criteria:**

70% or more correct responses on written exams

##### Software

Utilize software to prepare construction drawings and perform calculations for layout.

**Assessment Method:** Locally developed exams

**Performance Criteria:**

70% or more correct responses on written exams

**Assessment Method:** Portfolios

**Performance Criteria:**

70% or more of available points on prepared drawings

##### Mathematical calculations

Perform proper mathematical calculations for construction layout.

**Assessment Method:** Behavioral observations

**Performance Criteria:**

70% or higher based on performance checklist

**Assessment Method:** Locally developed exams

**Performance Criteria:**

70% or more correct responses on written exams

##### Construction project layout

Complete the layout of construction projects.

**Assessment Method:** Behavioral observations

**Performance Criteria:**

70% or higher based on performance checklist

**Assessment Method:** Locally developed exams

**Performance Criteria:**

70% or more correct responses on written exams

#### Outline:

Surveying calculations

Horizontal and vertical control networks

Route surveying geometry

Construction plan interpretation

Integration of civil construction design software  
Construction layout for site development