Course Prefix and Number: CIV 171  
Credits: 3

Course Title: Surveying I

Course Description: Introduces surveying equipment, procedures, and computations, including adjustment of instruments, distance measurement, leveling, angle measurement, traversing, traverse adjustments, area computations, and introduction to topography. Prerequisite or Co-requisite: MTH 115 or equivalent. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

General Course Purpose: To introduce the student to the fundamentals of field surveying

Course Prerequisites and Co-requisites: 
Prerequisite or Co-requisite: MTH 115 or equivalent

Course Objectives:
Upon completing the course, the student will be able to:
Lecture:
   a. Identify the duties of a surveyor;
   b. Identify the units of measure, computations, accuracy, and precision used by a surveyor;
   c. Make horizontal distance (taping) corrections;
   d. Compute mathematically and check leveling problems;
   e. Adjust angles for closure;
   f. Complete and correct bearings for magnetic declination;
   g. Compute and adjust latitudes and departure of a traverse;
   h. Compute the coordinates of a traverse;
   i. Compute the area of a traverse;
   j. Draw contour lines and other topographic features; and
   k. Demonstrate an understanding of EDM Equipment.

Lab:
   a. Measure distances by pacing;
   b. Measure distances by taping;
   c. Determine elevations by differential leveling;
   d. Determine elevations by profile leveling;
   e. Determine elevations by trigonometric leveling;
   f. Measure direct angles of a closed traverse;
   g. Measure deflection angles of a closed traverse;
   h. Measure vertical angles;
   i. Locate physical features of a closed traverse;
   j. Determine elevation to draw contour lines;
   k. Draw a topographic map;
   l. Record field notes correctly and accurately; and
   m. Traverse measurement using EDM equipment.

Major Topics to Be Included:
   a. Introduction
   b. Measurements and computations
   c. Measuring horizontal distances
   d. Measuring vertical distances
   e. Measuring angles and directions
   f. Horizontal curve surveys
   g. Topographic surveys and maps

Effective Date of Course Content Summary: February, 2009