Course Prefix and Number: CIV 172  
Credits: 3

Course Title: Surveying II

Course Description: Introduces surveys for transportation systems, including the preparation and analysis of topographic maps, horizontal and vertical curves, earthwork, and other topics related to transportation construction. Prerequisite: CIV 171 or equivalent. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

General Course Purpose: An introductory course in field surveying specific to transportation projects.

Course Prerequisites/Co-requisites:  
Prerequisite: CIV 171 or equivalent

Course Objectives:  
Upon successful completion of the course, the student will be able to

  Lecture:
  a. Identify the parts of horizontal curves and how to compute horizontal curves, simple, compound, and reverse curves;
  b. Solve problems assigned on horizontal curves;
  c. Solve problems concerning vertical curves;
  d. Demonstrate methods of locating features for maps;
  e. Demonstrate the method of locating by stadia;
  f. Demonstrate the method of plotting contours for plotted field notes;
  g. Demonstrate the calculations needed to make plot plans for building;
  h. Learn method of converting longitude and latitude to state plane coordinates; and
  i. Learn method of computing bearings and azimuths for observation of stars and sun.

  Lab:
  a. Stake out a horizontal curve;
  b. Run a profile for use in computing a vertical curve;
  c. Locate all physical features in and around a traverse by use of stadia for mapping;
  d. Draw contours from spot elevation taken by stadia;
  e. Take proper field notes on each lab exercise;
  f. Review homework problems assigned during lecture periods;
  g. Make computations on state plane coordinate systems;
  h. Make computations on star from observation of star; and
  i. Demonstrate and perform field problems using the Total Station Equipment.

Major Topics to Be Included:
  a. Surveys for maps
  b. Horizontal curves
  c. Vertical curves
  d. Stadia and photogrammetry
  e. Construction surveys

Effective Date of Course Content Summary: February, 2009