

**J. Sargeant Reynolds Community College  
Course Content Summary**

**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