

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

Course Prefix and Number: CIV 256

Credits: 3

Course Title: Global Positioning Systems for Land Surveying

Course Description: Introduces principles of satellite-based surveying and presents Global Positioning System (GPS) as it is utilized in land surveying and the various components of the GPS technology and the techniques through which the GPS technology may be used in land surveys. Utilizes field surveys using the GPS equipment as part of the laboratory activities. Covers the same content as GIS 256. Credit will not be granted for both courses. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

General Course Purpose: This course will be required for students pursuing the Geospatial Information and Positioning Specialist Career Studies Certificate and can be used as an elective for those individuals enrolled in the Geospatial and Environmental Engineering Technologies specialization of the Architectural and Engineering Technology AAS program. Course will also offer professionals in the geospatial profession hands-on training in the use of state-of-the-art GPS technology and contemporary practices in professional surveying.

Course Objectives:

Upon completing the course, the student will be able to

- a. Utilize both hand-held and antenna-type GPS hardware devices;
- b. Perform differential corrections in receiver receptions;
- c. Perform "way point" field mapping; and
- d. Transpose field data to desktop GIS mapping applications.

Major Topics to Be Included:

- a. Fundamentals of global positioning system methodology
- b. Electronic surveying
- c. Area calculations
- d. Advance traverse
- e. Topographic surveying via GPS
- f. Highway curve and construction survey practices
- g. GPS-GIS data translation

Effective Date of Course Content Summary: August 13, 2013