Surveying

Curriculum and Class Descriptions

3 Credit(s)
30 50-min. periods of Lecture
45 50-min. periods of Applied Lab

CVT 240 Surveying I

This course teaches basic surveying principles, mathematics, and operations with emphasis on basic computations and operation of equipment including the surveyor's tape, level, and total station. This course has a laboratory component where the student learns basic instrument use and elementary surveying operations through a variety of field exercises.

Requisites **Prerequisite**
CVT 140 with a grade of C or better

Grading System Letter Grade

Objectives Upon completion of this course, students will be able to:
1. Apply basic surveying principles.
2. Evaluate site survey requirements.
3. Plan, conduct, and document various types of survey measurements.
4. Calculate corrections to and adjustment of the initial measurement data.
5. Use several types of surveying instruments and related equipment.

Approved On Date: 03/03/2016
Implementation Date: 05/01/2016

3 Credit(s)
30 50-min. periods of Lecture
45 50-min. periods of Applied Lab

CVT 241 Surveying II

This course teaches the theory and practice of traverse computations. Topics that are introduced include mathematics and concepts used in route surveying; elementary concepts of property boundary surveying, topographic mapping, and volume calculations; and construction surveying. Elementary concepts of Geographic Information Systems (GIS) and Global Positioning Systems (GPS) are also introduced. This course has a laboratory component where the student builds on the instrument use and surveying operations learned in Surveying I.

Requisites **Prerequisite**
CVT 240 with a grade of C or better

Grading System Letter Grade

Objectives Upon completion of this course, students will be able to:
1. Safely perform basic survey operations including topographic, highway, and railroad fieldwork.
2. Use total stations while performing several different surveying techniques.
3. Describe accuracy standards and appropriate adjustments.
4. Describe GIS, GPS, and State Plane Coordinate System concepts.

Approved On Date: 03/03/2016
Implementation Date: 12/01/2016

3 Credit(s)
45 50-min. periods of Lecture

CVT 242 Land Records: Researching and Rules of Construction

This course teaches the fundamental knowledge required to perform land records research with deeds and other related records, survey records, and other land records preparatory to conducting property boundary surveys. The student will examine evidence of ownership, historical information, property descriptions, and legal requirements for reviewing and recording documents. Applications of the applicable portions of the Missouri (and other state) Minimum Standards for Property Boundary Surveys as well as of the standards for land title surveys of the American Land Title Association (ALTA)/National Society of Professional Surveyors (NSPS) will be discussed. Various aspects of professional practice and ethics are also included.

Requisites **Prerequisite**
CVT 241 with a grade of C or better

Grading System Letter Grade

Objectives Upon completion of this course, students will be able to:
1. Analyze deviations between recorded information and found evidence.
2. Correlate technical, legal and administrative facts.
3. Evaluate the reliability of all evidence discovered.
4. Apply prescribed standards and historical values.
5. Provide a reasonable conclusion of title boundary locations of real property.

Approved On Date: 04/04/2016
Implementation Date: 05/01/2016

3 Credit(s)
45 50-min. periods of Lecture

CVT 243 Legal Aspects of Boundary Surveying

This course teaches the legal principles of surveying including topics in boundaries, property law as applied to surveying, monumentation, deed interpretation, and professional liability and ethics. Also discussed are various principles of Missouri survey law, regulations such as the Missouri (and other state) Minimum Standards for Property Boundary Surveys, and the applicable portions of the standards for land title surveys of the American Land Title Association (ALTA)/National Society of Professional Surveyors (NSPS).

Requisites **Prerequisite**
CVT 241 with a grade of C or better

Grading System Letter Grade

Objectives Upon completion of this course, students will be able to:
1. Identify ownership, transfer and descriptions of real property.
2. Determine types of easements and reversions.
3. Evaluate boundary evidence.
4. Discuss the impact of GPS and GIS as it relates to boundary law.
5. Demonstrate appropriate techniques for communicating with clients, the public, and other surveyors.

Approved On Date: 03/03/2016
Implementation Date: 04/01/2016

3 Credit(s)
45 50-min. periods of Lecture

CVT 245 Introduction to Geographic Information Systems (GIS) & Global Navigation Satellite Systems (GNSS)

This course teaches fundamental concepts in the use of GIS and GNSS to prepare students for work in the geospatial industries and professions. Students learn spatial referencing concepts, GIS, and GNSS and also introduced to GIS/GNSS receivers and GIS/GNSS software systems that are used to collect, correct, map, and analyze geospatial data.

Requisites **Prerequisite**
CVT 235 with a grade of C or better
or
CVT 240 with a grade of C or better

Grading System Letter Grade

Objectives Upon completion of this course, students will be able to:
1. Use spatial referencing concepts and GIS/GNSS technology and its applications.
2. Examine the impact that GIS/GNSS has had on the surveying industry.
3. Apply the GIS/GNSS technology to the successful creation and maintenance of a robust GIS database.

Approved On Date: 12/12/2018
Implementation Date: 05/01/2019

3 Credit(s)
45 50-min. periods of Lecture

CVT 255 Advanced Geographic Information Systems (GIS) & Global Navigation Satellite Systems (GNSS)

This course teaches and demonstrates advanced spatial referencing concepts in Geographic Information Systems (GIS) and the Global Navigation Satellite Systems (GNSS). Students will be introduced to advanced GIS/GNSS receivers and GIS/GNSS software systems that are used to collect, correct, map, and analyze geospatial data.

Requisites **Prerequisite**
CVT 245 with a grade of C or better

Grading System Letter Grade

Objectives Upon completion of this course, students will be able to:
1. Use advanced spatial referencing concepts and GIS/GNSS technology and its applications.
2. Examine the impact that GIS/GNSS has had on the surveying industry.
3. Create and maintain a robust GIS database while applying advanced GIS/GNSS technology.

Approved On Date: 12/12/2018
Implementation Date: 05/01/2019