

# Surveying

## Class Descriptions

Online class with  
four Saturday labs on campus.

### **SUR 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** NONE

**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.

Online class with  
four Saturday labs on campus.

**SUR 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**  
SUR 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.

## **SUR 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**

SUR 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.

Online class

### **SUR 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**

SUR 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.