

# COURSE SYLLABUS

<b>LAST REVIEW</b>	Fall 2022
<b>COURSE TITLE</b>	Advanced Survey Concepts
<b>COURSE NUMBER</b>	SURV 0204
<b>DIVISION</b>	Career and Technical Education
<b>DEPARTMENT</b>	SURV
<b>CIP CODE</b>	15.1102
<b>CREDIT HOURS</b>	3
<b>CONTACT HOURS/WEEK</b>	Class: 3                      Lab: X
<b>PREREQUISITES</b>	SURV 0104 and SURV 0202

**COURSE PLACEMENT** Students must meet the correct placement measure for this course. Information may be found at:  
<https://www.kckcc.edu/admissions/information/mandatory-evaluations-placement.html>

## COURSE DESCRIPTION

This course covers various aspects of surveying that are covered in other courses, but which advances those topics to make the student ready for professional practice. The material covers writing and interpreting legal descriptions, principles of subdivision design, use of plane coordinate systems including understanding the theory of plane projection systems, and advanced error analysis

## Program Learning Outcomes

1. PLO #1
2. PLO #2

## TEXTBOOKS

<http://kckccbookstore.com/>

## METHODS OF INSTRUCTION

A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

## **COURSE OUTLINE**

- I. Legal Descriptions
  - A. Writing principles
  - B. Interpreting and applying legal principles of land surveying boundaries
  - C. Applying principles of description interpretation for lands conveyed with sequential conveyances
  - D. Applying principles of description interpretation for lands conveyed with simultaneous conveyances including conveyances that are aliquot parts of the USPLSS
- II. Principles of Subdivision Design
  - A. Planning and zoning concepts
  - B. Local, county and state level statutes and regulations on subdivision design
  - C. Achieving aesthetic design
  - D. Layout of streets and lots to achieve objectives
  - E. Street horizontal and vertical layout
  - F. Easement facilitation
  - G. Title block and survey notes requirements
- III. Use of State Plane Coordinate Systems
  - A. General discussion of projection systems
  - B. Kansas State Plane Coordinate System
  - C. Universal Transverse Mercator System
  - D. Kansas Regional Coordinate System
- IV. Surveying Errors Analysis
  - A. Error combination in linear and area applications
  - B. Classes of typical systematic and random errors that occur with use of various types of surveying instrumentation including automatic levels, total stations, GNSS, LiDAR and unmanned airborne systems
  - C. Least squares – understanding the principles so that software can be correctly used
  - D. Analysis of individual measurements
  - E. Analysis of surveys
  - F. Survey Design

## **COURSE LEARNING OUTCOMES AND COMPETENCIES**

Upon successful completion of this course, the student will:

- A. CLO 1
  - 1. Competency #1
  - 2. Competency #2
- B. CLO 2
  - 3. Competency #3
  - 4. Competency #4
  - 5. Competency #5

## **ASSESSMENT OF COURSE LEARNING OUTCOMES AND COMPETENCIES**

Student progress is evaluated through both formative and summative assessment methods. Specific details may be found in the instructor's course information document.

## **COLLEGE POLICIES AND PROCEDURES**

*Student Handbook*

<https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-of-conduct.pdf>

*College Catalog*

<https://www.kckcc.edu/academics/catalog/index.html>

*College Policies and Statements*

<https://www.kckcc.edu/about/policies-statements/index.html>

*Accessibility and Accommodations*

<https://www.kckcc.edu/academics/resources/student-accessibility-support-services/index.html>.