

COURSE SYLLABUS

LAST REVIEW	Fall 2022
COURSE TITLE	Surveying II
COURSE NUMBER	SURV 0102
DIVISION	Career and Technical Education
DEPARTMENT	SURV
CIP CODE	15.1102
CREDIT HOURS	3
CONTACT HOURS/WEEK	Class: 2 Lab: 2
PREREQUISITES	SURV 0101

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 teaches the theory and practice of traverse computation. Topics introduced include mathematics and concepts used in route surveying, elementary concepts of project 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 class has a laboratory component where the student builds on the instrument use and surveying operations learned in Surveying I.

PROGRAM ALIGNMENT

This course is part of a program aligned through the Kansas Board of Regents and Technical Education Authority. For more information, please visit:

https://kansasregents.org/workforce_development/program-alignment

PROGRAM LEARNING OUTCOMES

1. Prepare students with a holistic education for a long-term career as a responsible licensed professional in land surveying with educational content that includes: the science of making measurements; proper use of technology; ability to perform analysis on and adjust surveying measurements; understand the legal aspects of boundary surveying including retracement of original surveys; interpret, write and survey land descriptions; and understand the basic principles of managing a surveying business.
2. Have an active, engaged professional advisory committee that aligns the educational objectives such that the program reflects changes in technology, regulatory laws, rules and regulations and complies with professional standards of conduct.

3. Partner with professionals, service companies and technology providers in the surveying industry as well as government entities to enable student internships, employment opportunities, engagement with the public, and student scholarships and grants.
4. Graduates will, upon graduation, be prepared to take and pass the NSPS Level I Certified Survey Technician exam.

TEXTBOOKS

<http://kckccbookstore.com/>

METHOD 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. Learn commonly accepted safety rules to perform basic survey operations.
- II. Use total stations while performing several different surveying techniques.
- III. Apply accuracy standards and appropriate adjustments.
- IV. Introductory GIS, GNSS, and State Plane Coordinate System concepts.
- V. Analyze and adjust a traverse using the compass rule.
- VI. Concepts of boundary surveying and information about various aspects of a site such as volumes, areas, and the shape of the land.
- VII. Basic analysis and computation of horizontal circular curves, survey and create topographic maps, plans and profiles, develop an understanding of some of the procedures used in construction surveying, and route surveying.
- VIII. Introduction to the Principles of the PLSS Survey System used in Kansas.

COURSE LEARNING OUTCOMES

Upon successful completion of this course, the student will:

- A. Perform traverse calculations including adjusting traverse data for the error in the survey.
- B. Calculate coordinates of traverse points and side shots.
- C. Calculate the area of figures, given bearings/azimuths and distances, balanced latitudes and departures or coordinates.
- D. Calculate components of a circular curve, stations and basic setting out functions.
- E. Calculate elements of equal tangent vertical curves including elevations on the curve and station and station of high/low points.
- F. Understand the concepts of boundary surveying and how to conduct elementary field operations.
- G. Understand the concepts of topographic mapping and be able to manually create contour maps.
- H. Understand the concepts of construction surveying, related surveying operations and calculations of volumes.
- I. Have an elementary understanding of the concepts of GIS & GNSS.

J. Have an elementary understanding of the Public Land Surveying System used in Kansas.

ASSESSMENT OF COURSE LEARNING OUTCOMES

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>.