SURV 53 Course Outline as of Fall 2015

CATALOG INFORMATION

Dept and Nbr: SURV 53 Title: ROUTE SURVEYING & DESIGN
Full Title: Route Surveying & Design
Last Reviewed: 12/13/2021

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	4.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	4.00	Lab Scheduled	3.00	17.5	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	6.00		Contact Total	105.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00 Total Student Learning Hours: 210.00

Title 5 Category:	AA Degree Applicable
Grading:	Grade Only
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	CEST 53

Catalog Description:
Route surveying and design. Geometric design and construction staking of transportation routes. Use of electronic surveying equipment, computers, data collectors. Introduction to photogrammetry and global positioning systems.

Prerequisites/Corequisites:
Course Completion of SURV 51 and CEST 51

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Route surveying and design. Geometric design and construction staking of transportation routes. Use of electronic surveying equipment, computers, data collectors. Introduction to photogrammetry and global positioning systems. (Grade Only)
Prerequisites/Corequisites: Course Completion of SURV 51 and CEST 51
Recommended:
Limits on Enrollment:

Transfer Credit: CSU;
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**	Effective:	Inactive:
CSU GE:	**Transfer Area**	Effective:	Inactive:
IGETC:	**Transfer Area**	Effective:	Inactive:

CSU Transfer:	Transferable	Effective:	Fall 1981	Inactive:
UC Transfer:		Effective:		Inactive:

CID:

Certificate/Major Applicable:
Certificate Applicable Course

COURSE CONTENT

Outcomes and Objectives:
Upon completion of this course, the students will be able to:
1. Develop a route location for a transportation project.
2. Summarize the proper use of the total station and data collector software and hardware.
3. Perform a field survey for control, topographic and planimetric surveys.
4. Prepare maps, plats and drawings from field data.
5. Prepare a photogrammetric surveying layout.
6. Perform complex computations related to photogrammetric surveys, right of way acquisition surveys, roadway alignments, earthwork volumes, slope staking, and global positioning surveys.
7. Design and lay out roadways using civil and surveying CAD software/hardware and surveying equipment.
8. Perform a field survey to slope stake a roadway.
9. Compute earthwork and other construction volumes.
10. Prepare route surveying documentation for different types of projects.

Topics and Scope:

I. Route Location Process
II. Control Surveys
III. Data Collectors
IV. Photogrammetry
V. Highway Geometrics
VI. Highway Design and Layout
VII. Determining Construction Quantities
VIII. Slope Staking
IX. Introduction to GPS (Global Positioning System)

Assignment:

1. Read approximately one chapter of the textbook per week
2. Homework: 6 to 10 problem sets
3. Weekly field exercises
4. Midterm exams: 4
5. Final exam

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problem sets, Field work exeercises and reports	Problem solving 25 - 35%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Field exercises, Performance exams	Skill Demonstrations 30 - 40%

Exams: All forms of formal testing, other than skill performance exams.

Multiple choice, Matching items, Completion, Computational	Exams 25 - 35%

Other: Includes any assessment tools that do not logically fit into the above categories.

Class Participation	Other Category 0 - 10%

Representative Textbooks and Materials:
Surveying with Construction Applications, 8th Edition, Kavanaugh, Prentice Hall, 2014
Instructor prepared materials