

CATALOG INFORMATION

Dept and Nbr: CEST 50B

Title: PLANE SURVEYING

Full Title: Plane Surveying

Last Reviewed: 1/26/2015

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: CET 50B

Catalog Description:
Theory and practice of plane surveying, including measurement of distance and angles, use and care of instruments, error analysis, field problems and office computations.

Prerequisites/Corequisites:
CEST 50A (formerly CET 50A) or equivalent with grade of "C" or better.

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Theory and practice of plane surveying, including measurement of distance and angles, use and care of instruments, error analysis, field problems and office computations.
(Grade Only)
Prerequisites/Corequisites: CEST 50A (formerly CET 50A) or equivalent with grade of "C" or better.
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:	Fall 2017
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Certificate Applicable Course

COURSE CONTENT

Outcomes and Objectives:

The students will:

1. Define and give illustrative examples of various maps and their application to surveying, engineering and/or construction.
2. Plot a topographic map from data collected in the field.
3. Demonstrate their knowledge and objectives of the public land survey system.
4. Identify the appropriate use of horizontal and vertical curves as they apply to road construction.
5. Calculate the necessary data and demonstrate how to successfully stake-out both horizontal and vertical curves.
6. Demonstrate how to slope-stake for cuts and fills, determine earth volumes.
7. Calculate and set-up the appropriate field notes to stake-out pipelines and building structures.
8. Demonstrate knowledge and use of State Plane Coordinates and direction of lines by solar/polaris observation.

Topics and Scope:

1. Types of maps and their uses for surveying, engineering and construction.
2. Topographic maps, location methods.
3. Procedures used in collecting field data to develop various maps.
4. Surveys of the public land and boundary surveys.
5. Types and uses of horizontal and vertical curves.
6. Calculations used to stake-out horizontal and vertical curves.
7. Slope-staking to determine cuts and fills.
8. Construction surveys including pipelines, buildings, and other engineering structures.

9. State Plane Coordinates.
10. Direction of line by solar/polaris observation.

Assignment:

1. Reducing and plotting stadia survey for topographic maps.
2. Developing contour lines.
3. Types of ties used in mapping.
4. Boundary and public land surveys.
5. Types of geometric road alignments.
6. Calculating methods used in staking-out horizontal and vertical curves.
7. Methods of slope-staking to locate cuts and fills for roads.
8. Types of construction layouts and their applications.
9. Determining the grade rates and rods for pipeline construction.
10. Calculating horizontal and vertical control to locate building and engineering construction.
11. Calculate State Plane Coordinates from latitude/longitude.
12. Determine direction from solar/polaris observation.

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 problems, Field work, Lab reports, Exams

Problem solving
15 - 25%

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

Field work, 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:

ELEMENTARY SURVEYING, 9th edition, by Wolf/Brinkers; Harper Row, 1994