CEST 51 Course Outline as of Fall 2004

CATALOG INFORMATION

Dept and Nbr: CEST 51 Title: CIVIL DRAFTING TECH
Full Title: Civil Drafting Technology
Last Reviewed: 10/24/2022

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	2.00	17.5	Lecture Scheduled	35.00
Minimum	3.00	Lab Scheduled	3.00	4	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	5.00		Contact Total	87.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 70.00 Total Student Learning Hours: 157.50

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 51

Catalog Description:
Theory and practice of civil engineering drafting and mapping. An introduction to computer-aided design/drafting software for civil, surveying and land development disciplines. Topics include mapping scales and symbols, civil and surveying fundamentals, location and direction of lines, plan, profile, and cross section drawings, topographic mapping, boundary and legal description plats.

Prerequisites/Corequisites:
Course Completion of SURV 50 (or CEST 50A or CET 50A)

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Theory and practice of civil engineering drafting and mapping. An introduction to computer-aided design/drafting software for civil, surveying and land development disciplines. (Grade Only)
Prerequisites/Corequisites: Course Completion of SURV 50 (or CEST 50A or CET 50A)

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:
Both Certificate and Major Applicable

COURSE CONTENT

Outcomes and Objectives:
Upon successful completion of this course, the student will be able to:
1. Implement theory of graphical representation in the production of drawings, maps, and plats used in civil, surveying and land development.
2. Identify the types of drawings, maps and plats used in civil, surveying and land development.
3. Summarize and identify the proper scales, symbols and conventions for the types of drawings, maps and plats used in civil, surveying and land development.
4. Summarize and identify the necessary skills in surveying fundamentals for types of drawings, maps and plats used in civil, surveying and land development.
5. Create plan, profile and cross section views from survey data using civil, surveying and land development software.
6. Prepare and interpret legal descriptions of properties.
7. Develop highway designs and generate highway design documents.
8. Prepare topographic maps from survey data and information.

Topics and Scope:

I. Introduction to Civil Drafting Technology
A. theory of graphical representation in civil engineering, surveying, and development projects
   1. scale
   2. symbol
   3. convention
   4. orientation
   5. display

B. types of maps and drawings used in civil engineering
C. mapping requirements
D. civil drafting techniques
E. intro to CAD
II. Mapping Scales and Symbols
A. numerical scale
B. graphic scales
C. verbal scale
D. metric scales
E. civil engineering symbols
F. civil engineering line types
G. civil engineering text types
III. Surveying Fundamentals in civil drafting
A. earth's geometry
B. elevation measurements
C. distance measurements
D. angular measurements
IV. Location and Direction of Lines
A. by state plane coordinates
B. by latitude and longitude
V. Contours
A. from field data
B. building a surface
VI. Profiles and Cross sections
A. profiles and cross sections from a surface
B. profiles and cross sections from a file
C. profiles and cross sections from field notes
VII. Highway Layout
A. tangents
B. horizontal curves - simple, compound and reverse
C. vertical curves - sag and summit
D. layout
E. stationing
VIII. Earthwork
A. cross sectional area
B. volumes by average end methods
IX. Legal Descriptions and Plot Plans
A. types of legal descriptions
B. elements of a legal description
C. interpreting legal writings
D. plotting legal descriptions and plot plans

Assignment:

1. Identify the different types of civil engineering drawings, maps, and documents and how they are used in the civil engineering and mapping disciplines.
2. Identify and use proper mapping scales and symbols.
3. Compute the distance and direction of lines and location of points on engineering drawings and maps.
4. Prepare a topographic map.
5. Prepare plan, profile and cross-section drawings used in improvement

plans.
6. Produce highway layout plans.
7. Prepare earthwork diagrams and compute earthwork volumes using spreadsheets.
8. Prepare legal descriptions and plot plans.
10. Chapter reading assignments from text, approx. 40 - 50 pages per week.
11. Three to five exams, including the final.

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	Problem solving 15 - 25%

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

Performance exams, Drawings	Skill Demonstrations 40 - 60%

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:
Civil Drafting Technology, 5th edition. Madsen/Shumaker. Prentice Hall, 2004.