

CEST 85 Course Outline as of Fall 2014**CATALOG INFORMATION**

Dept and Nbr: CEST 85 Title: CAD CIVIL SURV LAND DEV

Full Title: CAD for Civil, Surveying & Land Development

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	6	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 85

Catalog Description:

Computer-aided design drafting for civil engineering, surveying and land development technicians. Industry standard civil engineering software program will be utilized in this course. Areas covered include input of surveying data for boundary and topography. Creation of a digital terrain model, roadway alignments, earthwork, grading plan, plan view, profile view and cross section drawings as they relate to the civil engineering, surveying and land development profession. Petition is required to repeat the course.

Prerequisites/Corequisites:**Recommended Preparation:**

Course Completion of CEST 51

Limits on Enrollment:**Schedule of Classes Information:**

Description: Computer-aided design drafting for civil engineering, surveying and land development technicians. Industry standard civil engineering software program will be utilized in this course. Areas covered include input of surveying data for boundary and topography.

Creation of a digital terrain model, roadway alignments, earthwork, grading plan, plan view, profile view and cross section drawings as they relate to the civil engineering, surveying and land development profession. Petition is required to repeat the course. (Grade Only)

Prerequisites/Corequisites:

Recommended: Course Completion of CEST 51

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 1995	Inactive:
UC Transfer:		Effective:	Inactive:

CID:

Certificate/Major Applicable:

Certificate Applicable Course

COURSE CONTENT

Outcomes and Objectives:

Upon completion of this course, the student will:

1. Start and set up a new drawing or open an existing drawing utilizing civil engineering software.
2. Create, edit and manage point data.
3. Import and export point data from field surveys and external files.
4. Create and properly label lines and curves for civil engineering projects.
5. Perform subdivision computations for area and boundary information.
6. Create a digital terrain model surface of the existing ground from point, contour, fault and break line data.
7. Create a finish grade or design surface.
8. Create, label and edit contours from digital terrain model surface data.
9. Create horizontal and vertical alignments for roadways.
10. Create profiles and cross sections of roadways from alignments or survey data.
11. Draw and define roadway assemblies.
12. Compute earthwork volumes using alignments, profiles, cross sections and corridors.
13. Create a set of improvement plans, including plan, profile, cross sections and details, using civil engineering software.

Topics and Scope:

Lecture and Laboratory

1. An overview of CAD in civil engineering, surveying and land development.
2. Drawing set up.

3. Creating points and point management.
4. Creating lines and curves.
5. Creating line and curve labels and tables.
6. Parcel computations and labeling.
7. Terrain surface modeling and contours.
8. Creating alignments with stationing.
9. Creating profile and cross section views.
10. Volume computations.
11. Creating assemblies.
12. Creating improvement plans for civil engineering and land development projects.

Assignment:

1. Read approximately one chapter of the textbook per week
2. Lab exercises: weekly assignments using CAD technology
3. Homework: Analytic computation assignments (3-6 per semester)
4. Quizzes: 4-8
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: Computational analysis assignments

Problem solving
10 - 25%

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

Lab exercises

Skill Demonstrations
40 - 60%

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

Multiple choice, True/false, Matching items, Completion, Analytical Computations

Exams
30 - 50%

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

None

Other Category
0 - 0%

Representative Textbooks and Materials:
An Introduction to Civil 3D, Geoffrey J. Coleman, P.E., SDC Publications, 2014.