

CEST 81 Course Outline as of Summer 2009**CATALOG INFORMATION**

Dept and Nbr: CEST 81 Title: CIVIL ENGINEERING DESIGN

Full Title: Civil Engineering Design/ Drafting

Last Reviewed: 4/13/2015

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	17.5	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: CONS 81

Catalog Description:

Design and drafting techniques applied to engineering drawings of site and grading plans, underground utilities, highways, structures, and concrete and structural detailing. Includes use of standard detail sheets.

Prerequisites/Corequisites:**Recommended Preparation:**

Course Completion of CEST 85 (or CET 85)

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

Description: Design and drafting techniques applied to engineering drawings of site and grading plans, underground utilities, highways, structures, and concrete and structural detailing. Includes use of standard detail sheets. (Grade Only)

Prerequisites/Corequisites:

Recommended: Course Completion of CEST 85 (or CET 85)

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 2021
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Certificate Applicable Course

COURSE CONTENT

Outcomes and Objectives:

Upon completion of this course, students will be able to:

1. Prepare plan, profiles, typical detail sheets, working drawings, site map, and grading plans for site construction and drainage.
2. Apply civil engineering design principles to problem solving situations such as parking lot layout, flexible pavement design, hydrology and hydraulic computations, fire protection system design, concrete retaining walls design, and storm drain design.
3. Interpret and apply zoning, fire and storm water regulations and California construction codes to solve civil engineering design problems.

Topics and Scope:

- I. Basic Civil Engineering principles as applied to
 - A. Highway design
 - B. Site development and drainage
 - C. Storm water management
 - D. Fire protection impacts
- II. Research of regulatory documents
 - A. local design, construction and zoning standards
 - B. California design and construction codes, including building and fire regulations
- III. Design and documentation of civil engineering projects incorporating regulatory requirements
 - A. Typical cross section for roadway computations
 - B. Plan and profile for storm drain, including details and necessary calculations
 - C. Working drawing for concrete retaining wall including all details and tables
 - D. Site and grading plan including quantity estimates

E. Working drawings for hydrology and hydrolics of storm drain design and parking lot design

Assignment:

1. Read approximately one chapter of the instructor prepared lab manual per week
2. Weekly lab assignments using CAD technology
3. Weekly homework assignments including Civil Engineering computations
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 problems including Civil Engineering computations

Problem solving
15 - 25%

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

Weekly lab assignments using CAD technology

Skill Demonstrations
40 - 60%

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

Multiple choice, true/false, matching items, completion: quizzes

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:

Instructor provided lab manual.