CEST 86 Course Outline as of Spring 2005

CATALOG INFORMATION

Dept and Nbr: CEST 86 Title: ADV CIVIL ENGR CAD
Full Title: Advanced Civil Engineering Computer-Aided Design
Last Reviewed: 1/4/2005

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:	33 - 3 Enrollments Total
Also Listed As:	
Formerly:	

Catalog Description:
Advanced computer-aided design for civil engineering technicians. The Softdesk civil engineering software program will be utilized. Advanced civil engineering design topics will be covered in the course using the Advanced Design, Digital Terrain Modeling, Earthworks and Survey modules. Advanced design techniques in digital terrain modeling, surface editing, alignment editing, plan, profile, cross sections, earthwork computations and site planning and design.

Prerequisites/Corequisites:
CEST 85 (formerly CET 85) with a grade of "C" or better or equivalent.

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Adv. CAD design for civil engineering technicians. The Softdesk software program will be utilized. Adv. civil engineering design topics will be covered in the course using the Adv. Design, Digital Terrain Modeling, Earthworks and Survey modules. Adv. design

techniques in digital terrain modeling, surface editing, alignment editing, plan, profile, cross sections, earth- work computations and site planning and design. (Grade Only)
Prerequisites/Corequisites: CEST 85 (formerly CET 85) with a grade of "C" or better or equivalent.
Recommended:
Limits on Enrollment:
Transfer Credit: CSU;
Repeatability: 3 Enrollments Total

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:	Spring 2005	Inactive:	Spring 2011
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Not Certificate/Major Applicable

COURSE CONTENT

Outcomes and Objectives:
Upon completion of this course, the students will:
1. Demonstrate an understanding for the Softdesk civil engineering software program as it relates to civil engineering design projects by completion of projects to instructor's satisfaction.
2. Perform advanced civil engineering design methods using the CAD system in civil engineering projects.
3. Create site models.
4. Design roads and lots.
5. Implement hydrology and culvert design techniques with site and road-way design.
6. Perform earthwork computations using DTM surfaces, plan, profile and cross section information.
7. Analyze and edit data using the Survey module.
8. Perform advanced plotting techniques.

Topics and Scope:

1. Course introduction and organization. Facilities operations and hard-ware operations.
2. Review and introduction to the Advanced Design Module applications.
   (a) Urban and Rural Roadway Design
      1. Alignments
      2. Profiles

3. Create Roadway Templates
4. Create Cross-sections
5. Sheet Manager

3. Advanced design methods using the DTM and Advanced Design Modules.
(a) Hydrology Basics
(b) Culvert Design and Layout
(c) Detention Facilities Design
(d) Earthwork Design
1. Roadway Volumes
2. Pond Volumes
3. Site Volumes
(e) Site Design
1. Roads and Lots
2. Creating Site Models

4. Perform earthwork computations using DTM surfaces, plan, profile and cross-section information.
5. Anaylze and edit data using the Survey module.
6. Perform advanced plotting techniques.

Assignment:

1. Reading and written assignments as assigned by the instructor.
2. Computer drawings and plotting.

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.

Quizzes, Exams	Problem solving 10 - 25%

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

Class performances, Performance exams	Skill Demonstrations 40 - 60%

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

Multiple choice, True/false, Matching items, Completion	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:

Required: Softdesk CIVIL 2 Certified Courseware, by Softdesk Technical Resource Team for latest release of Softdesk Software package. Published by OnWord Press. 1996.

Recommended: Softdesk CIVIL 1 Certified Courseware, by Softdesk Technical Resource Team for latest release of Softdesk Software package. Published by OnWord Press. 1996.