

CATALOG INFORMATION

Dept and Nbr: CEST 62                      Title: SOILS & MAT TESTING  
Full Title: Soils & Materials Testing  
Last Reviewed: 1/30/1995

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:                      CET 62

**Catalog Description:**  
Characteristics and properties of engineering and construction materials and standard means of testing soils and building materials.

**Prerequisites/Corequisites:**  
Course Completion of APTECH 90B ( or CET 90B) OR Course Completion of MATH 27 ( or MATH 57)

**Recommended Preparation:**

**Limits on Enrollment:**

**Schedule of Classes Information:**  
Description: Characteristics & properties of engineering & construction materials & standard means of testing soils & building materials. (Grade Only)  
Prerequisites/Corequisites: Course Completion of APTECH 90B ( or CET 90B) OR Course Completion of MATH 27 ( or MATH 57)  
Recommended:  
Limits on Enrollment:

Transfer Credit: CSU;  
Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>			Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>			Effective:	Inactive:
<b>IGETC:</b>	<b>Transfer Area</b>			Effective:	Inactive:
<b>CSU Transfer:</b>	Transferable	Effective:	Spring 1982	Inactive:	Summer 2008
<b>UC Transfer:</b>		Effective:		Inactive:	

### **CID:**

**Certificate/Major Applicable:**  
Certificate Applicable Course

## **COURSE CONTENT**

### **Outcomes and Objectives:**

The students will:

1. Classify and define the engineering properties of wood, steel, concrete and soils.
2. Demonstrate the appropriate test methods to determine the engineering properties of wood, steel, concrete and soils as they apply to design and construction of engineering works.
3. Prepare a complete standard laboratory report on all tests conducted on wood, steel, concrete, and soils.
4. Interpret the results of all laboratory reports and summarize the results.
5. Identify and list the responsibilities of construction inspection.

### **Topics and Scope:**

1. Properties of wood, steel, concrete, soils, and other engineering and construction materials.
2. Methods of measuring engineering properties of wood, steel, concrete, and soils.
3. Standard laboratory and field tests for identification, quality control and adherence to specifications for various building materials.
4. Standard laboratory and field tests of soils to determine characteristics and properties of subsoils.
5. Methods of field inspection and inspection reports.

### **Assignment:**

Reading and laboratory reports.

1. Structure of wood and tree classification.

2. Structural properties of wood.
3. Determining moisture content, bending and shearing stresses of selected woods.
4. Structural elements of metals.
5. Classification steel and nonferrous metals.
6. Standard tests to determine engineering properties of structural steels.
7. Classification of aggerates for various cement mixes.
8. Standard laboratory test to determine size, shape, and other properties of aggerate.
9. Standard design mixes for concrete.
10. Standard tests of concrete design mixes.
11. Textural soil classification chart.
12. Standard testing methods to determine:
  - A. Types of soil.
  - B. Moisture content and particle size.
  - C. Liquid limit of soils.
  - D. Specific gravity.
  - E. Field density.
13. Other standard tests as needed.

### 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, Lab reports, Exams

Problem solving  
30 - 40%

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

Performance exams, LAB REPORTS

Skill Demonstrations  
20 - 40%

**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
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Other Category 0 - 10%
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**Representative Textbooks and Materials:**  
Instructor provided lab manual.