

Revised by: G. Clarke
Reviewed by: K. Bandy
Text update: Spring 2019
C & G Ed approval: March 7, 2019
Board approval: April 10, 2019
Semester effective: Fall 2019

Occupational Safety and Health (OSH) 1055 Excavation, Trenching and Soil Mechanics (1.25 Units)
[formerly Industrial Education Safety 55 and Industrial Education Safety (IES) 1055]

Prerequisite: None

Total Hours: 20 hours lecture

Catalog Description: This course focuses on Occupational Safety and Health Administration (OSHA) and California (Cal) OSHA standards and on the safety aspects of excavation and trenching. The course addresses practical soil mechanics and its relationship to the stability of shored and unshored slopes and walls of excavations. Various types of shoring (wood timbers and hydraulic) are covered. Testing methods are demonstrated and the use of instruments such as penetrometers, torvane shears, and engineering rods. This course is offered on a Pass/No Pass basis with the option to receive a letter grade. Not open to students with credit in IES 1055.

Type of Class/Course: Degree Credit

Textbook:

29 CFR 1926 OSHA Construction Industry Regulations & Standards. Mancoom, 2018.

Cal/OSHA Construction & Electrical Safety Orders. Mancoom, 2018.

Additional Required Materials: None

Course Objectives:

By the end of the course, a successful student will be able to

1. explain basic concepts of soil mechanics and how environmental factors affect soil stability,
2. identify hazards related to excavations and excavating equipment,
3. describe sloping and shoring requirements and the use of trench shields,
4. identify the slope of trench walls to ensure employees receive protection,
5. demonstrate various field test of soil, including the pocket penetrometers and torvane shear methods,
6. list duties of competent person as defined by OSHA,
7. identify excavation standards, and
8. document excavation inspections.

Course Scope and Content:

Unit I Scope and Definitions

- A. 29 Code of Federal Regulations (CFR) 1926.650
- B. California Code of Regulations (CCR) §§1539 thru 1542

Unit II Soil Mechanics and Soil Classification

- A. OSHA Subpart P
- B. Cal-OSHA Permit Requirements §1539
- C. Methods of Protection

Learning Activities Required Outside of Class: None



Methods of Instruction:

1. Lecture
2. Group exercises in class
3. Workshops

Methods of Evaluation:

1. Written final exam
2. Performance observation

Supplemental Data:

TOP Code:	095670: Indus Occupational Safe Health
SAM Priority Code:	C: Clearly Occupational
Distance Education:	Online; Offline
Funding Agency:	Y: Not Applicable(funds not used)
Program Status:	1: Program Applicable
Noncredit Category:	Y: Not Applicable, Credit Course
Special Class Status:	N: Course is not a special class
Basic Skills Status:	N: Course is not a basic skills course
Prior to College Level:	Y: Not applicable
Cooperative Work Experience:	N: Is not part of a cooperative work experience education program
Eligible for Credit by Exam:	Yes
Eligible for Pass/No Pass:	C: Pass/No Pass
Taft College General Education:	NONE
Discipline:	Industrial Safety