

CE 381

Engineering Properties of Soils and their Measurements

(Required for a BSCE degree)

Instructor : Prof. Abdullah I. Al-Mhaidib
Room # : 2A56
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Prerequisite

CE 281 (Introduction to Geotechnical Engineering)

Topics Covered

1. Introduction
2. Moisture Density relationships
3. Classification and Identification of Soils
4. Compaction
5. Permeability
6. Seepage

Course learning Objectives

Students completing this course successfully will be able to

- a. Understand basic properties of soil.
- b. Use standards methods to classify soils.
- c. Conduct laboratory experiments and field test to measure engineering properties of soil.
- d. Write technical reports for laboratory and field test.
- e. Use simple computer programs to present the test results.
- f. Improve the communication skills, including reading, writing, oral presentations.

Class/ tutorial Schedule

One lecture session and two Laboratory sessions per week(50 minute each session)

Computer Applications

Utilization of MS Word, Excel, Grapher computer programs.

Contribution of Course to Meeting the Professional Component

1. Students learn how to use international soil classification systems.
2. Students improve their writing, communication and presentation skills.
3. Students recognize the role of professional societies in developing specification requirements and control tests.

Relationship of Course to Program Outcomes

1. Students identify and classify soil.
2. Students apply principles of soil mechanics.
3. Students are able to apply knowledge in mathematics, physics, and engineering science to civil and engineering problems.

4. Students are able to design experiments and analyze data.
5. Students are able to prepare technical report.
6. Students are able to identify and formulate an engineering problem and to develop a solution.
7. Students are able to understand and apply specification requirements and control tests
8. Students are encouraged to improve their writing, communication and presentation skills.

Textbook(s) and/or Other Required Material

- 1- Engineering Properties of Soil and Their Measurement. by Bowells ,J.E.,McGraw-Hill
- 2- Principles of Geotechnical Engineering by Das, B.M., PWS-Kent.

Grade Distribution

Mid Term Exam	25%
Laboratory reports	15%
Homework and Attendance	10%
Final Exam	50%
Total	100%