

College of Engineering

Department of Civil Engineering



CE 380 Soil Mechanics Laboratory

Credit and Contact hours	1/ 0(Lectures), 0 (Tutorials), 2 (Laboratory)								
Required, or Elective	Required for a BSCE degree								
Course Description	Moisture content. Liquid, plastic and shrinkage limits. Specific gravity. Sieve analysis. Hydrometer test. Compaction test. Field Density. Permeability test. Total sulfate and chloride content of soil. pH value and organic content. Direct shear test. Unconfined compression test. Consolidation test. Conventional triaxial test.								
Prerequisites or Co-requisites	Prerequisite: Mechanics of Materials (CE 302) Co-requisite: Geotechnical Engineering-I (CE 382)								
Course Learning Outcomes	Students completing this course successfully will be able to <table border="1" data-bbox="438 1115 1444 1525"><thead><tr><th>Course Learning Outcomes</th><th>Related Student Outcomes (SO)</th></tr></thead><tbody><tr><td>CLO1. Interpret the soil experiments results to draw conclusions on soil physical properties.</td><td>SO6</td></tr><tr><td>CLO2. Analyze the soil experiments results to evaluate strength properties of the soil.</td><td>SO6</td></tr><tr><td>CLO3. Demonstrate soil test results and soil behavior to students and lab staff in a professional manner.</td><td>SO3</td></tr></tbody></table>	Course Learning Outcomes	Related Student Outcomes (SO)	CLO1. Interpret the soil experiments results to draw conclusions on soil physical properties.	SO6	CLO2. Analyze the soil experiments results to evaluate strength properties of the soil.	SO6	CLO3. Demonstrate soil test results and soil behavior to students and lab staff in a professional manner.	SO3
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Student Outcomes related to this Course	SO3. an ability to communicate effectively with a range of audiences. [ABET 3] SO6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions [ABET 6]								

Topics Covered	List of Topics	Related CLOs								
	1. Introduction.	CLO1								
	2. Moisture content.	CLO1								
	3. Liquid, plastic and shrinkage limits.	CLO1								
	4. Specific gravity.	CLO1								
	5. Sieve analysis.	CLO1								
	6. Hydrometer test.	CLO1								
	7. Compaction test.	CLO1								
	8. Field density.	CLO1								
	9. Permeability test.	CLO1								
	10. Total sulfate and chloride content of soil. Ph value and organic content.	CLO1								
	11. Direct shear test.	CLO2								
	12. Unconfined compression test.	CLO2								
	13. Consolidation test.	CLO2								
	14. Conventional triaxial test.	CLO2								
Textbook(s) and Other Required Material	Engineering properties of Soil and their Measurements by J.E., Bowells, McGraw-Hill, Latest Edition									
Grading System	<table border="0"> <tr> <td>Mid-term Exam</td> <td>30 %</td> </tr> <tr> <td>Attendance</td> <td>10%</td> </tr> <tr> <td>Reports</td> <td>20%</td> </tr> <tr> <td>Final Exam:</td> <td>40%</td> </tr> </table>		Mid-term Exam	30 %	Attendance	10%	Reports	20%	Final Exam:	40%
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Instructors	Prof. Abdullah I. Almuheidib (2A56), email; muheidib@ksu.edu.sa									
Date of Review	November, 2020									