土壤力學

Soil Mechanics

Course Information	
Course title	Soil Mechanics
Semester	114-2
Designated for	English-Taught Intelligent Engineering and Technology Undergraduate Program
Instructor	YU-WEI HWANG
Curriculum Number	CIE3026
Curriculum Identity Number	501E36000
Class	02
Credits	3.0
Full/Half Yr.	Half
Required/ Elective	Required
Time	Wednesday 7,8,9(14:20~17:20) Thursday 6(13:20~14:10)
Remarks	Restriction: within this department (including students taking minor and dual degree program) AND Restriction: sophomores The upper limit of the number of students: 40.
Course introduction video	
Table of Core Capabilities and Curriculum Planning	Table of Core Capabilities and Curriculum Planning
Course Syllabus	
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Course Description	以工程之觀點與力學之方法，介紹土壤力學性質之基本概念，及一般工程設施與土壤之相互作用關係，係大地工程之入門基本課程。本課程並著重與土壤力學實驗課程之配合，以增進學生之認知與學習。
Course Objective	1.能對大地工程之內涵及其在土木工程及各項民生相關工程設施所擔任之重要性有所了解。 2.對於土壤做為工程材料及應力傳遞介質之天然特性及物理性質有基本認知。 3.能了解地表下土層與地下水之相對關係及地下水在土壤中之流動條件與行為。

	4.對於土層中之應力與孔隙水壓分佈之認識，尤其著重於有效應力觀念之了解。 5.由有效應力觀念延伸，能了解土壤材料，尤其粘土受力之壓縮行為與特質。 6.能對土壤在承受所施加荷重時之剪應力—剪應變行為與材料之強度特性有所了解。 7.基於對土壤有效應力與材料強度之認知，延伸至了解並應用於土壤所承受之側向土壓力及邊坡土體之穩定。 8.能了解並應用以控制土壤夯實方式滿足材料性質之要求。 9.能對於目前各項環境保護議題中與大地工程相關之項目有初步認知。
Course Requirement	學期成績計算項目及權重標準如下： 期中考 25%,期末考 25% 期末報告 30% 習題及平時 20%
Student Workload (Expected weekly study hours before and/or after class)	
Office Hours	
Designated reading	
References	Principles of Geotechnical Engineering, SI, 9E
Grading	<table><tr><th>No.</th><th>Item</th><th>%</th><th>Explanations for the conditions</th></tr><tr><td>1.</td><td>期中考</td><td>30%</td><td></td></tr><tr><td>2.</td><td>期末報告</td><td>40%</td><td></td></tr><tr><td>3.</td><td>作業與課程參與</td><td>30%</td><td></td></tr></table> 1. NTU has not set an upper limit on the percentage of A+ grades. 2. NTU uses a letter grade system for assessment. The grade percentage ranges and the single-subject grade conversion table in the NATIONAL TAIWAN UNIVERSITY Regulations Governing Academic Grading are for reference only. Instructors may adjust the percentage ranges according to the grade definitions. For more information, see the Assessment for Learning Section.

Progress

Week	Date	Topic
Week 1		Origin of Soil & Grain Size Weight-Volume Relationships
Week 2		Plasticity, & Soil Structure

		Eng. Classification of Soil
Week 3		Eng. Classification of Soil Soil Compaction
Week 4		Permeability
Week 5		Seepage
Week 6		Mid-term Exam
Week 7		In-situ Stress
Week 8		Stresses in a Soil Mass
Week 9		Compressibility of Soil
Week 10		Consolidation
Week 11		Consolidation
Week 12		Shear Strength of Soil
Week 13		Shear Strength of Soil
Week 14		Shear Strength of Soil (software)
Week 15		Final Presentation
Week 16		Final Presentation