

Course Information	
Course title	Deep Excavation Analysis and Design
Semester	114-2
Designated for	COLLEGE OF ENGINEERING GRADUATE INSTITUTE OF CIVIL ENGINEERING, GEOTECHNICAL ENGINEERING DIVISION
Instructor	HSIEH, HSII-SHENG
Curriculum Number	CIE5136
Curriculum Identity Number	521EU9250
Class	
Credits	3.0
Full/Half Yr.	Half
Required/ Elective	Elective
Time	Thursday 2,3,4(9:10~12:10)
Remarks	Restriction: within this department (including students taking minor and dual degree program) The upper limit of the number of students: 30.
Course introduction video	
Table of Core Capabilities and Curriculum Planning	Association has not been established
Course Syllabus	
Please respect the intellectual property rights of others and do not copy any of the course information without permission	
Course Description	Provide an in-depth overview regarding the analysis and design methods for deep excavation projects.
Course Objective	For students to have a preliminary ability on designing the retaining structure, bracing system, building protection system, instrumentation system and de-watering system for typical deep excavation projects.
Course Requirement	Backgrounds on soil mechanics, foundation engineering and mechanics of

	materials.																
Student Workload (Expected weekly study hours before and/or after class)	3 hours per week, excluding workload from homeworks.																
Office Hours	Appointment required. Note: As an adjunct professor, there is no fixed office hours for me, students can talk to me anytime after class.																
Designated reading	Ou, C.Y. (2021), "Fundamentals of Deep Excavations", CRC Press																
References	Journal papers assigned in the class																
Grading																	
	<table><tr><th>No.</th><th>Item</th><th>%</th><th>Explanations for the conditions</th></tr><tr><td>1.</td><td>Midterm</td><td>30%</td><td></td></tr><tr><td>2.</td><td>Final</td><td>40%</td><td></td></tr><tr><td>3.</td><td>Homeworks</td><td>30%</td><td>5 homework assignments, 6% each.</td></tr></table>	No.	Item	%	Explanations for the conditions	1.	Midterm	30%		2.	Final	40%		3.	Homeworks	30%	5 homework assignments, 6% each.
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	1.	Midterm	30%														
	2.	Final	40%														
3.	Homeworks	30%	5 homework assignments, 6% each.														
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	2/26/2026	Introduction
Week 2	3/5/2026	Excavation schemes
Week 3	3/12/2026	Bracing system
Week 4	3/19/2026	Retaining structure
Week 5	3/26/2026	Selection of soil parameters for excavation design
Week 6	4/2/2026	Stability analyses of deep excavations (1)
Week 7	4/9/2026	Stability analyses of deep excavations (2)
Week 8	4/16/2026	Midterm
Week 9	4/23/2026	Stress analysis of retaining structure
Week 10	4/30/2026	Layout of cross walls and buttress walls
Week 11	5/7/2026	Ground improvement schemes for deep excavations

Week 12	5/14/2026	Instrumentation for deep excavations
Week 13	5/21/2026	Building protection schemes
Week 14	5/28/2026	De-watering design
Week 15	6/4/2026	Case histories of recent excavation projects
Week 16	6/11/2026	Final exam