深開挖設計與分析

Deep Excavation Analysis and Design

| 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)<br>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><br>1. NTU has not set an upper limit on the percentage of A+ grades.<br>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 |