

COURSE SYLLABUS AND COURSE REQUIREMENTS

ACADEMIC YEAR 2022/2023 SEMESTER SPRING

Course title	GEOTECHNICS 2. (EARTHWORKS)
Course Code	MSB136AN-EA-00
Hours/Week: le/pr/lab	2 lectures, 1 Practice /week
Credits	2
Degree Programme	B.Sc in Civil Engineering
Study Mode (TVSZ-ben training schedule)	Full-time schedule
Requirements	None
Teaching Period	Semester 6
Prerequisites	None
Department(s)	Civil Engineering
Course Director	
Teaching Staff	Ali Mohamed Mohamed Salem
Hours/Week: le/pr/lab	2 lectures, 1 Practice /week

COURSE DESCRIPTION

Neptun: Instruction/Subjects/Subject Details/Basic data/Subject description

This course is aimed to provide basic and advanced knowledge on the principles and design of the different type of retaining structures. Topics covered by the course include: soil site explorations, Earth pressures, Retaining walls, sheet pile walls, supported deep excavation, and soil improvement.

This course is designed to teach students how classify the soil. Explain different techniques of soil site explorations. Explaining and discussing methods of designing different types of retaining walls. Explaining and discussing methods of designing different types of sheet pile walls. Teaching students different methods of soil improvement, Site Dewatering, and supported deep excavation.

SYLLABUS

Neptun: Instruction/Subjects/Subject Details/Syllabus

1. GOALS AND OBJECTIVES

Neptun: Instruction/Subjects/Subject Details/Syllabus/Goal of Instruction

Students will gain from this course:

- knowledge of soil exploration and lateral earth distribution
- Understanding and Practical knowledge of retaining structures design.
- Knowledge of Ground improvement and supported deep excavation

Furthermore, upon completion of this course, the student will be able to:

- Conduct civil engineering experiments in a team setting,
- Analyse and interpret the resulting data of the experiments.
- Create a complete formal laboratory report describing the particular experiment, summarizing the results and analysing the implications of the test.

2. COURSE CONTENT

Neptun: Instruction/Subjects/Subject Details/Syllabus/Subject content

TOPICS

LECTURE AND PRACTICE

1. Course description. Orientation.
2. Introduction in Geotechnical Engineering
3. Soil investigation
4. Lateral earth pressure (at rest – active – passive)
5. Earth pressure Distribution
6. Practical for Earth pressure Distribution,

7. Types and definition of earth retaining structures Retaining walls (Gravity – cantilever – counterfort)
8. Stability of Retaining walls
9. Practical for Retaining walls
10. Sheet Pile walls (Gravity – anchored – strutted)
11. Practical for Sheet Pile walls
12. Supported deep foundation
13. Ground improvement and dewatering system

DETAILED SYLLABUS AND COURSE SCHEDULE

ACADEMIC HOLIDAYS INCLUDED

LECTURE

week	Topic	Compulsory reading; page number (from ... to ...)	Required tasks (assignments, tests, etc.)	Completion date, due date
1.	Course description. Orientation. Introduction to construction materials.	-----
2.	Introduction in Geotechnical Engineering.	Lecture notes and slides	----	-----
3.	Soil investigation	Lecture notes and slides	Assignment _1	02-03-2023
4.	Lateral earth pressure (at rest – active – passive)	Lecture notes and slides		
5.	Earth pressure Distribution	Lecture notes and slides	Assignment _2	16-03-2023
6.	Types and definition of earth retaining structures Retaining walls (Gravity – cantilever – counterfort)	Lecture notes and slides		23-03-2023
7.	Design of gravity retaining wall	Lecture notes and slides	Assignment _3	30-03-2023
8.	Design of cantilever retaining wall	Lecture notes and slides	Assignment _4	06-04-2023
9.	Spring break	-----	-----	
10.	<i>Midterm 1</i>		<i>Midterm 1</i>	13-04-2023
11.	Sheet Pile walls (Gravity – anchored – strutted)	Lecture notes and slides	Retake <i>Midterm 1</i>	20-04-2023
12.	Design of sheet pile	Lecture notes and slides	Assignment _5	04-05-2023
13.	Supported deep foundation	Lecture notes and slides	Assignment _6	11-05-2023
14.	Ground improvement and dewatering system	Lecture notes and slides		
15.	<i>Midterm 2</i>		<i>Midterm 2</i>	18-05-2023
16.	Retake <i>Midterm 2</i>		Retake <i>Midterm 2</i>	25-05-2023

3. ASSESSMENT AND EVALUATION

(Neptun: Instruction/Subjects/Subject Details/Syllabus/Examination and Evaluation System)

ATTENDANCE

In accordance with the Code of Studies and Examinations of the University of Pécs, Article 45 (2) and Annex 9. (Article 3) a student may be refused a grade or qualification in the given full-time course if the number of class absences exceeds 30% of the contact hours stipulated in the course description.

Method for monitoring attendance (e.g.: attendance sheet / online test/ register, etc.)

attendance sheet

ASSESSMENT

Cells of the appropriate type of requirement is to be filled out (course-units resulting in mid-term grade or examination). Cells of the other type can be deleted.

Course resulting in mid-term grade (PTE TVSz 40§(3))**Mid-term assessments, performance evaluation and their ratio in the final grade**

Type	Assessment	Ratio in the final grade
Attendance	10 points	10%
Assignments	20 points	20%
Midterm Exam	30 points	30%
Final Exam	40 points	40%
Signature requirements: Writing 2 midterm tests with a minimum 40%, submitting 3 homework.		

Opportunity and procedure for re-takes (PTE TVSz 47§(4))

all tests and assessment tasks can be repeated/improved at least once every semester, and the tests and home assignments can be repeated/improved at least once in the first two weeks of the examination period.

Grade calculation as a percentage

based on the aggregate performance according to the following table

Course grade	Performance in %
excellent (5)	85 % ...
good (4)	70 % ... 85 %
satisfactory (3)	55 % ... 70 %
pass (2)	40 % ... 55 %
fail (1)	below 40 %

The lower limit given at each grade belongs to that grade.

Type of examination (written, oral): written

The exam is successful if the result is minimum **40** %.

4. SPECIFIED LITERATURE

In order of relevance. (In Neptun ES: Instruction/Subject/Subject details/Syllabus/Literature)

COMPULSORY READING AND AVAILABILITY

- [1.] Primary compulsory reading and its availability
- [2.] Compulsory literature and its availability
- [3.] - Lecture notes and slides

RECOMMENDED LITERATURE AND AVAILABILITY

- [4.] Joseph E. Bowles, McGraw-Hill 1996 "Foundation Analysis and Design", 5th Ed.by .
- [5.] Braja M. Das Principles of Foundation Engineering, 4th Edition.
- [6]- Farkas, J., Józsa, V., Szendefy J. (2014): Foundation Engineering, elektronikus angol BSc egyetemi jegyzet, BME, Geotechnikai Tanszék p. 97.
- [7] Holtz, R.D. and Kovacs, W.D. (1981): An Introduction to Geotechnical Engineering, Prentice Hall.