# COURSE SYLLABUS SEMESTER FALL 2020/2021

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| Name of Course | Geotechnics 1. (Soil Mechanics) |
| **Course Code** | **MSB135AN-EA-00** |
| **Allotment of Hours per Week** | **2 lectures, 2 practice /week** |
| **Number of Credits** | **3** |
| **Program** | **B.Sc in Civil Engineering** |
| **Evaluation** | **Midterm- final exams, and Homework** |
| **Semester** | **5 th** |
| **Prerequisites** | **None** |
| **Department** | **Civil Engineering** |
| **Instructor** | **Ali Mohamed Mohamed Salem**  **Office: Boszorkány street 2 C0042**  **E-mail:** [**ali.salem@mik.pte.hu**](mailto:ali.salem@mik.pte.hu) |
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## OBJECTIVES

This course is aimed to provide basic and various aspects of soil mechanics. Topics covered by the course include: soil site explorations, Soil classification, Soil classification, soil consistency, soil compaction, stresses in soil, consolidation, permeability, and shear strength of soil.

Students will gain from this course:

- knowledge of soil exploration and soil classification,

- Providing the Practical meaning of the various aspects of soil mechanics.

- Knowledge of Ground improvement

## CONTENTS

**Short description:**

This course is aimed to provide basic and various aspects of soil mechanics. Topics covered by the course include: soil site explorations, Soil classification, Soil classification, soil consistency, soil compaction, shear strength of soil, and soil improvement.

This course is designed to teach students how to classify the soil. Explain different techniques of soil site explorations. Explaining and discussing methods of soil compaction. Explaining and discussing hydraulic properties of soil and shear strength of soil. Teaching students different methods of soil improvement

**Methodology:**

- Lectures: will give the basis of soil exploration, Soil classification Soil classification, soil consistency, soil compaction, shear strength of soil, and soil improvement.

- Practical class and lab practice: Students will be assigned tasks to complete

- Exams: Accumulated knowledge is tested in two exams: a midterm and a final exam. Both feature multiple-choice, true-false or short essay questions.

**Schedule:**

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| **Week** | **Topic of lecture** |
| Week 1 | Course description. Orientation. |
| Week 2 | Introduction in Geotechnical Engineering |
| Week 3 | Soil investigation |
| Week 4 | Physical properties |
| Week 5 | Grain size distribution |
| Week 6 | Soil Consistency |
| Week 7 | Soil Classification |
| Week 8 | Autumn break |
| Week 9 | **Mid-Term Exam** |
| Week 10 | Soil compaction - Consolidation |
| Week 11 | Hydraulic Properties of soils (Geo – static stress, Permeability) |
| Week 12 | Shear strength of soils |
| Week 13 | Ground improvement and soil reinforcement |
| Week 14 | Final exam. |
| Week 15 | Second exams (only if required). |

## ATTENDANCE AND GRADING

**Attendance:**

Attending is required all classes, and will impact the grade (max. 10%). Unexcused absences will adversely affect the grade, and in case of absence from more than 30% of the total number of lesson will be grounds for failing the class. To be in class at the beginning time and stay until the scheduled end of the lesson is required, tardiness of more than 20 minutes will be counted as an absence. In the case of an illness or family emergency, the student must present a valid excuse, such as a doctor's note.

**Grading:**

10% - Attendance

20% - Assignments

30% - Midterm Exam

40% - Final Exam

**Offered exam grade:**

Evaluation in percents Numeric grade

89%-100% 5

77%-88% 4

66%-76% 3

55%-65% 2

0-54% 1

**Students with Special Needs:**

Students with a disability and needs to request special accommodations, please, notify the Deans Office. Proper documentation of disability will be required. All attempts to provide an equal learning environment for all will be made.

## READINGS AND REFERENCE MATERIALS

- Das, B.M. (1998). Principles of Geotechnical Engineering, 4th edition, PWS Publishing Company.

- Holtz, R.D. and Kovacs, W.D. (1981). An Introduction to Geotechnical Engineering, Prentice Hall

- Lecture notes and slides