

Tárgytematika / Course Description

Geotechnical design I.

NGM_SE112_1

Tárgyfelelős neve /

Teacher's name: dr. Ray Richard Paul

Félév / Semester: 2022/23/2

Beszámolási forma /

Assesment: Folyamatos számonkérés

Tárgy heti óraszám /

Teaching hours(week): 2/1/0

Tárgy féléves óraszám /

Teaching hours(sem.): 0/0/0

OKTATÁS CÉLJA / AIM OF THE COURSE

The aim of this course is to enlarge the knowledge acquired on BSC on the scope of geotechnical design.

The subject want to improve the skill and thinking of geotechnical design with the famailiarization and practice of the decision-making techniques, design methods, etc.. The following main topics will be discussed: data and information gathering; techniques of data analysis; design considerations and requirements; techniques of selecting the optimal technical and economical solutions, calculation methods includin both traditional calculations and fem design.

TANTÁRGY TARTALMA / DESCRIPTION

- 1 "Introduction, Philosophy of Geot. Design" "Q & A on course, Program"
- 2 "Documents (soil invest. report, design)" Typical Geotech Reports
- 3 Soil-structure interaction "Explore Elastic, BEF"
- 4 Shallow foundation design Orr Design Walk-thru 1
- 5 Team work - shallow foundation design Team Design
- 6 Pile foundation design Orr Design Walk-thru 2
- 7 Team work - Pile foundation design Team Design
- 8 "Pile load testing, evaluation" Data Spreadsheet
- 9 "Deep excavation - retaining structures design" Performance Data
- 10 FEM modeling I. Excel Code

11 FEM modeling II. Model Results

12 Student Presentations

SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESMENT'S METHOD

There are 3. homework:

HW1: Compiling of a geotechnical task list for a project with the investigation plan

HW2: Shallow foundation analysis with AXIS WM software

HW3: Pile foundation design based on CPT tests

KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

Smoltczyk szerk.: Geotechnical Engineering Handbook Volume 1-3, Ernst and Sohn, 2003.

[Richard P. Ray: Design practice for tieback excavation in the U.S.](#)