

Tárgytematika / Course Description

Case studies in Geotechnics

EKNM_SETA020

Tárgyfelelős neve /

Teacher's name: dr. Ray Richard Paul

Félév / Semester: 2018/19/2

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

Aim of the course is to expand the student's previous knowledge about geotechnics and to provide students with a comprehensive engineering approach through case studies. This will be done by presenting the geotechnical design process as well as the construction of various infrastructure works (bridge, underpass, retaining structure, excavations), with an emphasis on damages or failures connected to geotechnical activity or the soil surrounding. By presenting economical aspects as well as the importance of risk management, the student's complex engineering approach will develop.

TANTÁRGY TARTALMA / DESCRIPTION

The case studies will be focused on the followings.

Embankments, retaining structures, foundations of roadway and railway bridges, underpasses, excavation pits. Presenting the project sequence: importance of geotechnical investigations in the preparation phase, finding the optimal foundation solution, geotechnical structures and technologies. Quality assurance system, monitoring for risk management. Typical design errors and construction mistakes and their effect on the maintenance of the structure.

SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESSMENT'S METHOD

The main focus of the course is researching journal and conference articles on case studies. Therefore the largest portion of grading concerns written reports, presentations and posters on students interpretation of case studies they have chosen to report on.

Grade is based on

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| 1. Attendance and participation in discussion during class | 20 points |
| 2. First case study (failure study), written report | 15 points |
| edited report | 5 points |
| verbal presentation (ppt) | 10 points |
| 3. Second case study (construction monitoring) | |
| written report | 20 points |

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|---------------------------|------------|
| edited report | 10 points |
| verbal presentation (ppt) | 10 points |
| poster | 10 points |
| Total Points | 100 |

Grade Divisions 100-90 pts (5) 80-89 pts (4) 70-79 pts (3) 60-69 pts (2) 0-59 pts (1)

KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

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

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

2. Delatte, N., and Rens, K. (2002). "Forensics and Case Studies in Civil Engineering Education: State of the Art." *J.Perform.Constr.Facil.*, 16(3), 98-109. [http://engagedscholarship.csuohio.edu/encee_facpub?](http://engagedscholarship.csuohio.edu/encee_facpub?utm_source=engagedscholarship.csuohio.edu%2Fencee_facpub%2F37&utm_medium=PDF&utm_campaign=PDFCoverPages)

[utm_source=engagedscholarship.csuohio.edu%2Fencee_facpub%2F37&utm_medium=PDF&utm_campaign=PDFCoverPages](http://engagedscholarship.csuohio.edu/encee_facpub%2F37&utm_medium=PDF&utm_campaign=PDFCoverPages)

3. Seed, R.B. et al New Orleans and Hurricane Katrina. I: Introduction, Overview, and the East Flank *Journal of Geotechnical and Geoenvironmental Engineering*, Vol. 134, No. 5, May 1, 2008 10.1061/(ASCE)1090-0241 (2008) 134:5 (701)