

Tárgytematika / Course Description**Seismic design**

NGM_SE113_1

Tárgyfelelős neve /**Teacher's name:** dr. Ray Richard Paul**Félév / Semester:** 2019/20/2**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 provide extensive knowledge on the geotechnical aspects of seismic design based on previous BSc studies. Engineering approach and seismic design overview are aimed to be developed with giving comprehensive knowledge about the topics of soil dynamics, and seismic design. Students should be able to participate in geotechnical seismic design tasks based on their knowledge acquired in this course and their further practice.

TANTÁRGY TARTALMA / DESCRIPTION

Introduction
Origin on earthquakes, plate tectonics, effects of earthquakes
Wave propagation, acceleration records
Describing earthquakes, earthquake risk in Hungary
Dynamics
Structural aspects
Soil dynamics I. - material modeling
Soil dynamics II. - In situ and laboratory measurements
Seismic design based on EC 8-1 and 8-5
Conceptual design considerations
Seismic performance of foundations
Liquefaction, seismic slope stability analysis
HW submission with student presentation
HW submission with student presentation

SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESSMENT'S METHOD

midterm exam and 3 homework assignments and their presentation by students

KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

Compulsory:	Kramer, S. L.: Geotechnical Earthquake Engineering, Prentice Hall, New Jersey, 1996. Charleson, A.: Seismic design for architects, Elsevier, 2008.
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Recommended:	Kramer, S. L.: Geotechnical Earthquake Engineering, Prentice Hall, New Jersey, 1996. Charleston, A.: Seismic design for architects, Elsevier, 2008. Chopra, Anil K: Dynamics of Structures: Theory and Applications to Earthq. Eng., Prentice-Hall, 1995. Das, B. M.: Principles of Soil Dynamics, PWS-Kent Publishing Company, Boston 1993
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