EARTHWORKS – EKNM_SETA017

Fall - 2018

1. Couse	name:	**Earthworks.**	code: EKNM_SETA017
	hours:	2 lecture + 1 seminar / week	credit: 4
	prerequired:	Civil Engineering BSc	
	grading method:	exam	
2. Students	Specialization:	Civil Engineering - Infrastructure	
	level:	MSc	
3. Instructor	Instructor:	**dr. Koch Edina e. doc.**	
	Co-instructor:	**Hudacsek Péter e.ts, Dr. Richard Ray egy.tanár**	
	Faculty:	Engineering Sciences	
	Department:	Structural and Geotechnical Engineering	
	Office:	Building D, room 407, Geotechnical laboratory	
	e-mail:	koche@sze.hu	

4. Objective

Based on the knowledge of the BSc's geotechnical courses the subject deals with the design, construction, maintenance and reconstruction of the earthworks. We pursue that the graduate students will be able to solve these kind of problems individualy after a few years of practice.

5. Content

Cources Monday 13.05 - 15.35 TIGER room ~40 hours/semester

1.	sept. 03.	Introduction and Historical perspective
2.	sept. 10.	Principles and general matters
3.	*sept. 17.*	Classification of earthwork materials
4.	*sept. 24.*	*Earthworks design*
5.	oct. 01.	Earthworks construction
6.	***oct. 08.***	***No class – Geotechnics 2018 Conference***
7.	oct. 15.	Geosynthetics
8.	***oct. 22.***	***No class - Holiday***
9.	oct. 29.	Retaining systems
10.	nov. 05.	Soil treatment
11.	nov. 12.	Embankment foundation
12.	nov. 19.	Earthworks protection
13.	nov. 26.	Levees
14.	dec. 03.	Students' presentations

Consultation Monday 16.00 – 17.00
course-completion, group and individual test- and homeworks - consultation

Individual, out of course activity home ~80 hours/semester
homeworks: 40 hours studying for exam: 40 hours

6. Class activity

During classes students have to solve and discuss practical problems related to the subject.

7. Homework assignments

HF1 Evaluation of English technical paper, presentation

HF2 Design problem I. (design of earthwork material)

8. ITV Final written exam

Final exam will be offered by 4 occasions through the Neptun system. Examination will be closed books/closed notes.

Two part exam

- Part I consists a 60 minute test of 50 questions
- Part II: Solve and discuss a practical earthworks construction/design problem. (e.g. design embankment foundation for a given site)

9. Course Grade Evaluation

Class activity – 5×5=25 points, HF1 – 5 points, HF2 – 10 points, ITV – 60 points

Grades

0 - 49 points	1	(fail)
50 - 61 points	2	(sufficient)
62 - 73 points	3	(satisfactory)
74 - 85 points	4	(good)
86 - 100 points	5	(excellent)

excellent means: attendance the courses (missing max. 2 classes), excellent homeworks, activity, exam test should be at least 80%,
good means: missing max. 4 classes, good homeworks, medium activity, exam test – min. 70%
fair means: missing max. 6 classes, medium activity, exam test – min. 60 %
satisfactory means: missing max. 8 classes, no activity, exam test – min. 50%
unsatisfactory means: no attandence on the cources, no homeworks, exam test les than 50%

10. Literature

Required

Robert D. Holtz: Guide to Earthwork construction, Transportation Research Board, Washington, D. C. 1990.
U.Smoltzczyk szerk.: Geotechnical Engineering Handbook Volume 1-3, Ernst and Sohn, 2003 (related chapters)
International Levee Handbook, CIRIA, 2013. (related chapters)
Moseley, M. P., Kirsch, K. ed. Ground Improvement. Taylor and Francis, London, 2004. (related chapters)
Selected papers

Recommended

I Vanicek, M. Vanicek: Earth structures in Transport, Water and Environmental Engineering, Springer, 2008.
N. A. Trenter: Earthworks: Guide, Thomas Telford, 2001