Design of Water Damage Prevention Structures - BMEEOVVMV62

I. Tantárgyleírás

1. Alapadatok

1.1 Tantárgy neve

Design of Water Damage Prevention Structures

1.2 Azonosító (tantárgykód)

BMEEOVVMV62

1.3 Tantárgy jellege

Kontaktórás tanegység

1.4 Óraszámok

Típus	Óraszám / (nap)
Előadás (elmélet)	2
Gyakorlat	1

1.5 Tanulmányi teljesítményértékelés (minőségi értékelés) típusa

Félévközi érdemjegy

1.6 Kreditszám

4

1.7 Tárgyfelelős

név	Dr. Csoma Rózsa
beosztás	Egyetemi docens
email	csoma.rozsa@emk.bme.hu

1.8 Tantárgyat gondozó oktatási szervezeti egység

Vízépítési és Vízgazdálkodási Tanszék

1.9 A tantárgy weblapja

https://epito.bme.hu/BMEEOVVMV62
https://edu.epito.bme.hu/course/view.php?id=3477

1.10 Az oktatás nyelve

angol

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1.11 Tantárgy típusa

Kötelezően választható az Infrastruktúra-építőmérnök (MSc) szak Víz- és vízi környezetmérnöki specializációján

1.12 Előkövetelmények

Recommended prerequisites:

- Water Damage Prevention and Water Use (BMEEOVVA-F1)
- Hydraulic Engineering Project Work (BMEEOVVA-FP)

1.13 Tantárgyleírás érvényessége

2021. szeptember 1.

2. Célkitűzések és tanulási eredmények

2.1 Célkitűzések

The course introduces the hydraulic engineering structures for flood retention, their hydrological and hydraulic dimensioning, solving soil mechanical, structural, constructional problems, and taking environmental questions also into consideration.

2.2 Tanulási eredmények

A tantárgy sikeres teljesítése utána a hallgató

A. Tudás

1. to be aware of the general terminology of flood protection structures,
2. to be aware of the methodology of flood calculation,
3. to be aware of the basic relationships of flood storage,
4. to be aware of the basic types of flood diversion structures, their dimensioning and construction,
5. to be aware of the basic idea of the dimensioning of dykes and earth dams,
6. to be aware of the basic idea of the dimensioning of compound and large structures.

B. Képesség

1. to be able to compare the results of several methods for a given catchment to determine peak flood, and to be able to evaluate the results and choose the best method,
2. to be able to identify and analyse the hydraulic process going on in compound systems of structures, and to choose the best method available for the dimensioning
3. to be able to prove the stability of simple earth dams,
4. based on the knowledge collected in the field of informatics to be able to solve problems of medium size computational requirements,
5. to be able to present the results in clear technical drawings,
6. to be able to present his/her results in proper written form,

C. Attitűd

1. to collaborate with the teachers and his/her mates in gaining knowledge,
2. to follow the lectures, to make effort to understand the study material,
3. to be open to the use of IT tools and equipment
4. to strive for the proper identification of flood protection problems and their proper solution,
5. to strive for accuracy in his/her calculations/solutions,
6. to realize the importance of the effects of human activities on the environment.

D. Önállóság és felelősség

1. to be independent in problem statements and solutions in case of flood storage problems,
2. to be open to careful and deep going critique,
3. as a group member to collaborate with the mates to solve technical problems,
4. to understand the complexity, comprehensiveness of the problems and recognizing the synergies.

2.3 Oktatási módszertan

Theoretical lectures, design guidelines and continuous consultation, oral and written communication, the application of IT tools and technics, group work of 2 or 3 persons preparing a larger project work, the organisation of the work.

2.4 Részletes tárgyprogram

Week	**Topics of lectures and/or exercise classes**
1.	Introduction, the most important features of flood retention reservoirs
2.	The determination of the design flood
3.	The determination of the reservoir volume
4.	The design of the diversion and outlet structures
5.	The design of the dam and the other structural elements
6.	The stability of the structures
7.	First presentation and discussions
8.	The sizing and stability of the dam
9.	The calculation of the sinking of the dam
10.	The control of the calculations, consultation
11.	The presentation of the results in drawing and text, technical report
12.	Special reservoirs, special questions of the design work, case studies
13.	Second presentation and discussions
14.	The finalizing of the project

A félév közbeni munkaszüneti napok miatt a program csak tájékoztató jellegű, a pontos időpontokat a tárgy honlapján elérhető "Részletes féléves ütemterv" tartalmazza.

2.5 Tanulástámogató anyagok

a) Textbooks:

1. CHANSON, Hubert: The Hydraulics of Open Channel Flow: An Introduction. Elsevier, 2004.
2. S. L. Dingman: Physical Hydrology, Prentice-Hall.

b) Online materials: materials uploaded to the web site of the subject, e.g.:

1. Lecture notes, electronic lecture notes,
2. Slides of lectures and practices,:

2.6 Egyéb tudnivalók

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2.7 Konzultációs lehetőségek

The instructors are available for consultation during their office hours, as advertised on the department website at the beginning of the semester.

Jelen TAD az alábbi félévre érvényes:

Inactive courses

II. Tárgykövetelmények

3. A tanulmányi teljesítmény ellenőrzése és értékelése

3.1 Általános szabályok

The assessment of the learning outcomes specified in Clause 2.2 above and the evaluation of student performance occurs via two midterm presentation and the final project work.

3.2 Teljesítményértékelési módszerek

Evaluation form	Abbreviation	Assessed learning outcomes
1st presentation	PREZ1	A.1-A.4; B.1-B.2, B.4-B.6; C.1-C.6; D.3
2nd presentation	PREZ2	A.1, A.5-A.6; B.3-B.4; C.1-C.6; D.3
Project work	HF	A.1-A.6; B.1-B.6; C.4-C.6; D.1-D.4
Activity during the classes	A	A.1; B.1-B.3; C.1-C.6; D.1-D.4

A szorgalmi időszakban tartott értékelések pontos idejét, a házi feladatok ki- és beadási határidejét a "Részletes féléves ütemterv" tartalmazza, mely elérhető a tárgy honlapján.

3.3 Teljesítményértékelések részaránya a minősítésben

Abbreviation	Score
PREZ1	15
PREZ2	15
HF	60
A	10
Sum	**100%**

3.4 Az aláírás megszerzésének feltétele, az aláírás érvényessége

No signature can be obtained.

3.5 Érdemjegy megállapítása

At least 70% of the attendance of lectures and seminars are expected.
In case of fulfilling the attendance requirements and project work assignments with the grade at least „satisfactory”, the final grade is the average value of the grade of the presentations and the homework assignments and the class activity weighted according to the clause 3.3.

3.6 Javítás és pótlás

1. The project work – after the payment of the fee as described in the Regulations – can be submitted with delay until the last day of the supplementary week, until 12:00 a.m..
2. The submitted and accepted homework can be corrected without any fee until the deadline described in the point 1.
3. The two midterm presentations have no minimum requirements, therefore they cannot be retaken.
4. “Class activity” A cannot be repeated, cannot be substituted with other forms of activity.

3.7 A tantárgy elvégzéséhez szükséges tanulmányi munka

Activity	**Hours/semester**
Contact hours	14×3=42
Preparation for the classes	6
Preparation for the presentations	2×8=16
Project work	50
Home studying of the written material	6
Sum	**120**

3.8 A tárgykövetelmények érvényessége

2021. szeptember 1.

Jelen TAD az alábbi félévre érvényes:

Inactive courses