Infrastructural Design Project - BMEEODHAI41 - 2024/25/2

I. Tantárgyleírás

1. Alapadatok

1.1 Tantárgy neve

Infrastructural Design Project

1.2 Azonosító (tantárgykód)

BMEEODHAI41

1.3 Tantárgy jellege

Kontaktórás tanegység

1.4 Óraszámok

Típus	Óraszám / (nap)
Konzultáció	2

1.5 Tanulmányi teljesítményértékelés (minőségi értékelés) típusa

Félévközi érdemjegy

1.6 Kreditszám

6

1.7 Tárgyfelelős

név	Attila Kollár
beosztás	Adjunktus
email	kollar.attila@emk.bme.hu

1.8 Tantárgyat gondozó oktatási szervezeti egység

Út és Vasútépítési Tanszék

1.9 A tantárgy weblapja

https://epito.bme.hu/BMEEODHAI41
https://edu.epito.bme.hu/course/view.php?id=3591

1.10 Az oktatás nyelve

angol

1.11 Tantárgy típusa

Kötelező az építőmérnöki (BSc) szak Infrastruktúra-építőmérnöki ágazatán

1.12 Előkövetelmények

Hydraulic Engineering, Water Management (BMEEOVVAT43) - weak
Highway and Railway Design (BMEEOUVAI43) - weak
Public Works II. (BMEEOVKAI41) - weak

1.13 Tantárgyleírás érvényessége

2023. szeptember 1.

2. Célkitűzések és tanulási eredmények

2.1 Célkitűzések

The aim of the course is to convey a comprehensive and complex design approach. The task specification is based on a small urban area. The main infrastructural facilities, road network, water utilities, as well as the overall water management of the micro-region are to be planned.

The planning task is to be developed in the following steps:

· micro-regional concept covering all disciplines,

· detailed plans of the designated parts of the individual disciplines up to the level of design for approval,

· detailed design of designated parts with bill of quantities.

2.2 Tanulási eredmények

A tantárgy sikeres teljesítése utána a hallgató

A. Tudás

1. is familiar with the steps of synthesizing simple planning procedures used in road design,
2. knows the calculation and design steps used in pavement reinforcement design,
3. has the knowledge on the steps of simple public utility planning procedures,
4. is aware of of simple water management questions.

B. Képesség

1. is able to define the number of traffic lanes based on traffic data,
2. can develop a suitable pavement structure based on estimated future traffic data,
3. is able to prepare road construction plans and traffic engineering plans of an urban road at ‘plan for approval’ level, based on previous studies,
4. is able to perform hydraulic engineering design task based on previous studies,
5. is able to perform utility planning tasks based on previous studies,
6. is able to express his thoughts in an orderly form orally, in writing and in standard planning work sections.

C. Attitűd

1. cooperates with the instructor during consultations,
2. is open to the professional use of IT tools,
3. strives to learn and skillfully use the tools and techniques required to solve the design problem,
4. strives for accurate and precise task solutions,
5. during the preparation of the tasks, he/she tries to produce work that is accurate and comprehensible, has an orderly appearance, that is expected at an engineering standard,
6. during the preparation of the tasks, he/she tries to implement the principles of sustainability, integrated planning and environmental awareness.

D. Önállóság és felelősség

1. thinks through planning tasks and problems and solves them based on given resources,

2. accepts well-founded critical comments with an open mind,
3. applies the systematic approach in his/her thinking,
4. prepares well for the consultations in order to make the consultations smoother,
5. makes a responsible decision in relation to the frequency of appearances in consultation hours, in accordance with his abilities and prior preparation, in order to fulfill the tasks at the expected level.

2.3 Oktatási módszertan

During the consultation, assistance in solving planning tasks (for connecting previously learned elements into a project), verbal communication, and individual homework assignments prepared in teamwork or independently.

2.4 Részletes tárgyprogram

Week	**Topics of lectures and/or exercise classes**
1.	Roads: Assignment, Task description Traffic planning: capacity analysis of the intersection: number of lanes
2.	Hydraulic Engineering: Assignment, Task description
3.	Roads: Center line on site plan; Sample cross-sections (drafts)
4.	Hydraulic Engineering – Milestone 1 Consultation
5.	Hydraulic Engineering – Milestone 1, second deadline Roads – Milestone 1: Edge of pavements Roads: Long-section design, pavement structure design, cross-sections
6.	Hydraulic Engineering – Milestone 2

	Roads – Milestone 1, second deadline
7.	Hydraulic Engineering – Milestone 2, second deadline Consultation
8.	Roads – Milestone 2: profile&cross-sections Roads: Content of the authorization plan
9.	Public works: Assignment, Task description Roads – Milestone 2, second deadline
10.	Hydraulic Engineering – Milestone 3 Consultation
11.	Public works – Milestone 1 Hydraulic Engineering – Milestone 3, second deadline
12.	Public works – Milestone 1, second deadline Consultation
13.	Consultation
14.	Submission

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

Study-aids, guidelines and downloadable materials as specified in the class, technical specifications

2.6 Egyéb tudnivalók

Due to the special nature of the subject, participation in consultation classes is not mandatory. Failure to participate in no way exempts the student either from solving the tasks to an appropriate standard, or from lack of knowledge presented in the consultation classes.

2.7 Konzultációs lehetőségek

The teachers are available for consultation during their office hours, as advertised at the department website.

Jelen TAD az alábbi félévre érvényes:

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 three separate homeworks.

During the semester, there is a continuous partial performance evaluation (6 milestones).

Completion of the milestones is mandatory, and upon successful completion of the predetermined requirements, the student will receive a separate signature for each one.

Homeworks can only be submitted if all milestones have signatures. Otherwise, the course cannot be passed.

The student passes if all homeworks have received at least satisfactory (2) marks.

3.2 Teljesítményértékelési módszerek

Evaluation form	Abbreviation	Assessed learning outcomes
1. Hydraulic engineering (with continuous partial performance evaluation - 3 milestones)	HW1	A.4; B.4; C.1-C.6; D.1-D.5
	HW2	A.1, A.2; B.1-B.3, B.6; C.1-C.6; D.1-D.5
2. Highway engineering (with continuous partial performance evaluation - 2 milestones)	HW3	A.3; B.5; C.1-C.6; D.1-D.5
3. Public works (with continuous partial performance evaluation - 1 milestone)		

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
HW1	33.3%
HW2	33.3%
HW3	33.3%
Sum	**100%**

3.4 Az aláírás megszerzésének feltétele, az aláírás érvényessége

Signature cannot be obtained.

3.5 Érdemjegy megállapítása

Grade	**Points (P)**
excellent (5)	90<=P
good (4)	75<=P<90%
satisfactory (3)	62.5<=P<75%
passed (2)	50<=P<62.5%
failed (1)	P<50%

3.6 Javítás és pótlás

All milestones have an additional deadline, (usually 1 week after the regular deadline) in accordance with the detailed semester schedule, in addition to paying the fee specified in the regulations. Only work submitted before the given deadline can receive a signature. Furthermore, no corrections can be made after the additional deadline, so if the submitted work does not meet the minimum requirements, it cannot get a signature.

Homeworks can be handed in late (usually 1 week after the regular deadline) in accordance with the detailed semester schedule, in addition to paying the fee specified in the regulations. Submitted and accepted homework can be corrected free of charge by the last deadline.

3.7 A tantárgy elvégzéséhez szükséges tanulmányi munka

Activity	**Hours/semester**
Contact hours	2x14=28
Preparation for the courses with Homework	2x76=152
Sum	180

3.8 A tárgykövetelmények érvényessége

2024. január 26.

Jelen TAD az alábbi félévre érvényes: