

## I. Subject Specification

### 1. Basic Data

#### 1.1 Title

Public Works I.

#### 1.2 Code

BMEEOVKAT42

#### 1.3 Type

Module with associated contact hours

#### 1.4 Contact hours

Type	Hours/week / (days)
Lecture	2
Seminar	1

#### 1.5 Evaluation

Exam

#### 1.6 Credits

3

#### 1.7 Coordinator

name	Fülöp Roland
academic rank	Assistant professor
email	<a href="mailto:fulop.roland@emk.bme.hu">fulop.roland@emk.bme.hu</a>

#### 1.8 Department

Department of Sanitary and Environmental Engineering

#### 1.9 Website

<https://edu.epito.bme.hu/course/view.php?id=460>

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#### 1.10 Language of instruction

hungarian and english

## 1.11 Curriculum requirements

Compulsory in the Civil Engineering (BSc) programme

## 1.12 Prerequisites

Strong prerequisites:

- Hydraulics I. (BMEEOVVAT42)

## 1.13 Effective date

5 February 2020

## 2. Objectives and learning outcomes

### 2.1 Objectives

The objective of the subject is that the students gain knowledge about the main characteristics of public works, their effects on each other and on other facilities. In addition the other goal is that the students get appropriate approach for the rational management of urban subsurface area when working as general designers or urban managers. Topics: systematic and designing basics on water supply, water purification, sewage, sewage treatment, gas supply, district heating, electricity supply, telecommunication.

### 2.2 Learning outcomes

Upon successful completion of this subject, the student:

#### A. Knowledge

1. will learn the types of public works,
2. will learn the system elements of water supply,
3. will learn the structure of urban drainage networks,
4. will learn the design specifications of water utilities,
5. will learn the causes of the reconstruction of public works
6. will learn the building methods of water utilities.

#### B. Skills

1. will be able to calculate the water loads,
2. will be able to calculate the size of water utilities,
3. will be able to use professional communication with decision makers of other sectors,
4. will be able to manage the building tasks,
5. will be able to calculate the horizontal and vertical alignment of public works,
6. will be able to create the technical description.

#### C. Attitudes

1. cooperates with the tutor/lecturer,
2. continuously extends his/her knowledge, e.g. in addition to compulsory curriculum using Internet based literature to find answers,
3. comprehensive and clear in verbal communication and accurate and orderly in written communication, to fulfil the standards and expectations of the engineering profession

#### D. Autonomy and Responsibility

1. applies systematic approaching while solving problems and performing tasks.

### 2.3 Methods

Lectures, exercises, written and oral communications, application of IT tools and techniques, assignments solved individually.

### 2.4 Course outline

Week	Topics of lectures and/or exercise classes
1.	Grouping and main features of public works. Load calculation (practical lesson).
2.	Grouping and main features of public works.
3.	General overview of water supply networks (system elements). Determination of water storage volume in drinking water networks.
4.	Determination of water demands (different types of water demand, calculation, data)
5.	Water storage (types of water storage, placement, water quality). Alignment of the water supply network (practical lesson).
6.	Design of water networks.
7.	Urban drainage systems (types, quality, quantity, etc.). Design of water supply systems (practical lesson).
8.	Waste water loads (infiltration, domestic, industrial, emission conditions).
9.	Vertical and horizontal alignment of urban drainage systems. Determination of waste water loads, alignment of the wastewater network (practical lesson).
10.	Calculation methods of drainage systems (manual calculation).
11.	Design phases, preparation of design. Design of wastewater network (practical lesson).
12.	Traditional building methods (drainage of construction site, conditions).
13.	Traditional building methods (machines). Part summary.
14.	Pipe materials.

The above programme is tentative and subject to changes due to calendar variations and other reasons specific to the actual semester. Consult the effective detailed course schedule of the course on the subject website.

### 2.5 Study materials

#### a) Textbooks

1. Darabos Péter - Mészáros Pál: Közművek

2. Knolmár Marcell – Fülöp Roland – Darabos Péter: Public Works [Lecture notes and practical manual](#)

#### b) Online materials

1. lecture materials on the home page of the subject

### 2.6 Other information

Minimum one consultation per tasks is compulsory.

## 2.7 Consultation

The instructors are available for consultation during their office hours, as advertised on the department website. Special appointments can be requested via e-mail: [fulop.roland@epito.bme.hu](mailto:fulop.roland@epito.bme.hu) [knolmar.marcell@epito.bme.hu](mailto:knolmar.marcell@epito.bme.hu)

This Subject Datasheet is valid for:

2022/2023 semester I

**II. Subject requirements**

Assessment and evaluation of the learning outcomes

## 3.1 General rules

The assessment of the learning outcomes specified in clause 2.2. above and the evaluation of student performance occurs via one midterm test, home assignment and performance measurement during examination period. During the exam first the student has to provide written answers for the two minimum questions at acceptable level. In case of the successful answers of the minimum questions the exam continues with the oral exam. The result of the exam is based on the grade of the oral exam.

## 3.2 Assessment methods

<b>Evaluation form</b>	<b>Abbreviation</b>	<b>Assessed learning outcomes</b>
1. midterm test (summary evaluation)	ZH1	A.1-A.6; B.1-B.6; C.1-C.3; D.1
Home assignment (continuous performance measurement)	HF	B.1-B.6; C.1-C.3; D.1
Written and oral exam (summary performance measurement)	V	A.1-A.6; B.1-B.6; C.2-C.3; D.1

The dates of deadlines of assignments/homework can be found in the detailed course schedule on the subject's website.

## 3.3 Evaluation system

<b>Abbreviation</b>	<b>Score</b>
ZH	20%
HF	30%
<b>Achievable during midterm</b>	<b>50%</b>
V	50%
<b>Total</b>	<b>100%</b>

## 3.4 Requirements and validity of signature

Signature can be obtained, if the scores of the midterm test exceed 45 %, furthermore the home assignment is graded as minimum passed.

The home assignment is evaluated according to the criteria and scoring rules detailed on the datasheet of the home assignment.

## 3.5 Grading system

<b>Grade</b>	<b>Points (P)</b>
excellent (5)	$85 \leq P$
good (4)	$70 \leq P < 85\%$
satisfactory (3)	$57 \leq P < 70\%$
passed (2)	$45 \leq P < 57\%$
failed (1)	$P < 45\%$

The final grade is the weighted average of the midterm test, the home assignment and the exam, specified in clause 2.2.

## 3.6 Retake and repeat

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1. The midterm test can be repeated – once without fee – at a previously determined date given in the course schedule. If the first repetition is also unsatisfactory (failed), then the test can be repeated once more, during the repetition week, by paying a fee.
2. Submit of the home assignment is due to 12.00 a.m. on the last working day of midterm, without fee. Extended submission date is 12.00 a.m. on the first working day of the examination period. In this case submission is possible by paying a fee.

### 3.7 Estimated workload

<b>Activity</b>	<b>Hours/semester</b>
contact hours	14×3=42
preparation for the courses	13
preparation for the tests	15
home studying of the written material	20
<b>Sum</b>	<b>90</b>

### 3.8 Effective date

5 February 2020

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