

## COURSE SYLLABUS AND COURSE REQUIREMENTS

ACADEMIC YEAR 2023/24 SEMESTER 2.

<i>Course title</i>	<i>Structural Diagnostic Practice 1.</i>
<i>Course Code</i>	MSB381AN
<i>Hours/Week: le/pr/lab</i>	0/0/1
<i>Credits</i>	1
<i>Degree Programme</i>	Civil Engineering BSc
<i>Study Mode</i>	<i>full time</i>
<i>Requirements</i>	mid-term grade
<i>Teaching Period</i>	Spring semester (6.)
<i>Prerequisites</i>	Strength of Materials 2.
<i>Department(s)</i>	Department of Civil Engineering
<i>Course Director</i>	Dr. Zoltán Orbán
<i>Teaching Staff</i>	Dr. Zoltán Orbán, András Dormány

## COURSE DESCRIPTION

The course provides students with a basic knowledge on the diagnostics, inspection and condition assessment of existing engineering structures. The semester will introduce basic destructive and non-destructive methods used for strength and structural analysis of buildings and engineering structures. The tests will be complemented by the identification and analysis of other damaging factors that adversely affect strength characteristics.

## SYLLABUS

### 1. GOALS AND OBJECTIVES

The objective of the course is to provide students with the basic knowledge for the strength and structural analysis of existing structures through theoretical presentations and laboratory exercises.

### 2. COURSE CONTENT

#### TOPICS

<b>LABORATORY PRACTICE</b>	<ol style="list-style-type: none"><li><i>Structural diagnostics in general,</i></li><li><i>Damages of structural materials</i></li><li><i>Destructive strength testing methods</i></li><li><i>Non-Destructive strength testing methods</i></li><li><i>Damage characteristics testing</i></li></ol>
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## DETAILED SYLLABUS AND COURSE SCHEDULE

### PRACTICE, LABORATORY PRACTICE

<i>week</i>	<b>Topic</b>	<b>Compulsory reading; page number (from ... to ...)</b>	<b>Required tasks (assignments, tests, etc.)</b>	<b>Completion date, due date</b>
1.	General information			
2.	Structural diagnostics in general	[2.]		
3.	Damages of structures and materials	[1.] [2.]		
4.	Damage to concrete structures /demonstration/	[1.] [2.]		

5.	Concrete strength tests - Destructive methods. Strength tests of masonry - Destructive methods	[1.] [2.]		
6.	No class			
7.	Strength tests of wood and steel structures - - Destructive methods	[2.]		
8.	Mid-term exam		Test 1	
9.	Break			
10.	Non-destructive strength tests 1 (testing of concrete structures)	[1.] [2.]		
11.	Non-destructive strength tests 2 (combined tests of concrete structures)	[2.]		
12.	Non-destructive strength tests 3 (masonry and timber structures)	[1.] [2.]		
13.	Break			
14.	Damage characteristics /specific tests/	[1.] [2.]		
15.	Final exam		Test 2	

### 3. ASSESSMENT AND EVALUATION

#### ATTENDANCE

Absence from practical sessions during the semester must not exceed 30%.

**Method for monitoring attendance** (e.g.: attendance sheet / online test/ register, etc.)

Attendance sheet

#### ASSESSMENT

**Course resulting in mid-term grade** (PTE TVSz 40§(3))

**Mid-term assessments, performance evaluation and their ratio in the final grade** (The samples in the table to be deleted.)

Type	Assessment	Ratio in the final grade
Test 1	max 30 points	30 %
Test 2	max 50 points	50 %
Active participation in laboratory exercises	max 20 points	20 %

**Opportunity and procedure for re-takes** (PTE TVSz 47§(4))

During the first two weeks of the examination period, it is possible to make up and correct the mid-term and final exam grades once.

#### **Grade calculation as a percentage**

based on the aggregate performance according to the following table

Course grade	Performance in %
excellent (5)	85 % ...
good (4)	70 % ... 85 %
satisfactory (3)	55 % ... 70 %
pass (2)	40 % ... 55 %
fail (1)	below 40 %

The lower limit given at each grade belongs to that grade.

### 4. SPECIFIED LITERATURE

**COMPULSORY READING AND AVAILABILITY**

[1.] M Raupach, Till Büttler: Concrete Repair to EN 1504 - Diagnosis, Design principles and Practice, CRC Press, ISBN-13: 978-1-4665-5746-8

**RECOMMENDED LITERATURE AND AVAILABILITY**

[2.] Practical guides for all topics /download/