SUBJECT DATASHEET

I. SUBJECT SPECIFICATION

1 BASIC DATA

1.1 Title
CONSTRUCTION MATERIALS I

1.2 Code
BMEEOEMAT43

1.3 Type
Module with associated contact hours

1.4 Contact hours

<table>
<thead>
<tr>
<th>type</th>
<th>hours/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>lectures</td>
<td>2</td>
</tr>
<tr>
<td>laboratory practices</td>
<td>2</td>
</tr>
</tbody>
</table>

1.5 Evaluation
examination

1.6 Credits
5

1.7 Coordinator

<table>
<thead>
<tr>
<th>name</th>
<th>György L. Balázs</th>
</tr>
</thead>
<tbody>
<tr>
<td>academic rank</td>
<td>professor</td>
</tr>
<tr>
<td>email</td>
<td><a href="mailto:balazs.gyorgy@vbt.bme.hu">balazs.gyorgy@vbt.bme.hu</a></td>
</tr>
</tbody>
</table>

1.8 Department
Department of Construction Materials and Technologies

1.9 Website
www.epito.bme.hu/BMEEOEMAT43

1.10 Language of instruction
Hungarian and English

1.11 Curriculum requirements
Compulsory in the Civil engineering (BSc) programme

1.12 Prerequisites
Required previous subjects (need to be completed to register)
Compulsory: BMEEOEMAT41 (Chemistry for Civ. Eng.)

1.13 Effective date
September 1, 2017.
2 OBJECTIVES AND LEARNING OUTCOMES

2.1 Objectives

Students become familiar with the basic mechanical and physical properties of construction materials.


2.2 Learning outcomes

Upon successful completion of this subject, the student:

A. Knowledge
   1) Knows and adequately uses the terminology of materials
   2) Knows the physical-mechanical and chemical properties and their test method of construction materials.
   3) Knows the physical and mechanical properties of concrete, metals, glass, timber, brick and plastic.
   4) Be aware of the field of building materials,
   5) Is able to choose the construction materials for different structural elements.

B. Skills
   1) Is able to judge the proper structural material significations,
   2) Is able to judge and compare the basic material properties,
   3) Is able to choose the proper construction material for the structure,
   4) Is able to speak and write with appropriate technical terms about each topic of the subject.
   5) Is able to apply the theoretical phenomenon during exact technical tasks.

C. Attitudes
   1) Cooperates with the teacher,
   2) Participates in life-long learning (communication, knowledge, technical terms),
   3) Open to use up to date information technology,
   4) During homework intends to apply different types of gaining knowledge (notes, laboratory protocols, catalogues, online references).

D. Autonomy and responsibility
   1) Is able to work alone on homework,
   2) Is open to receive critic and develop,
   3) Is able to participate in problem solving as part of a group,
   4) Participate in professional debates, and can account for his/her opinion.

2.3 Methods

Lectures with active participation of students.
week: Topics of lectures and/or exercise classes
1. History of construction materials.
2. Natural construction materials and their properties.
4. Concept of binders, the lime circle, gypsum, resins and mineral composition of ordinary Portland cement, hydration, blending, setting and hardening and influencing factors.
5. Concept of mortars, concrete types and constituents.
8. Timber as construction materials, engineered timber and properties.
12. Summarization.
13. Construction materials in the process of structural design.

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
       Printed lecture notes

2.6 Other information

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: balazs.gyorgy@epito.bme.hu
II. SUBJECT REQUIREMENTS

3 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 tests, homework assignments and class work.

3.2 Assessment methods

<table>
<thead>
<tr>
<th>Evaluation form</th>
<th>abbrev.</th>
<th>assessed learning outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. midterm test</td>
<td>T1</td>
<td>A.1-A.4, B.1-B.2; B.4; C.3;</td>
</tr>
<tr>
<td>1. control test</td>
<td>CT1</td>
<td>A.1-A.4; B.1-B.2; B.4-B.5; C.3; D.3</td>
</tr>
<tr>
<td>1. homework</td>
<td>HW1</td>
<td>A.1-A.5; B.1-B.5; C.3-C.4; D.1-D.2</td>
</tr>
<tr>
<td>2. homework</td>
<td>HW2</td>
<td>A.1-A.5; B.1-B.5; C.1-C.3; D.4</td>
</tr>
<tr>
<td>Written and oral examination</td>
<td>E</td>
<td>A.1-A.4, B.1-B.2; B.4; C.3;</td>
</tr>
</tbody>
</table>

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

3.3 Evaluation system

<table>
<thead>
<tr>
<th>abbreviation</th>
<th>score</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>20%</td>
</tr>
<tr>
<td>CT1</td>
<td>10%</td>
</tr>
<tr>
<td>HW1</td>
<td>10%</td>
</tr>
<tr>
<td>HW2</td>
<td>10%</td>
</tr>
<tr>
<td>Total achievable during the semester</td>
<td>50%</td>
</tr>
<tr>
<td>E</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Sum</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

3.4 Requirements and validity of signature

Signification can be obtained by get min. 50% of the available points on midsemester results (T1, CT1, HW1, HW2) and perform the required presence on contact hours.

3.5 Grading system

The following points and grades are applied:

<table>
<thead>
<tr>
<th>grade</th>
<th>points (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>excellent (5)</td>
<td>85 % &lt;= T</td>
</tr>
<tr>
<td>good (4)</td>
<td>74 % &lt;= T &lt; 85%</td>
</tr>
<tr>
<td>satisfactory (3)</td>
<td>63 % &lt;= T &lt; 74%</td>
</tr>
<tr>
<td>passed (2)</td>
<td>50 % &lt;= T &lt; 63%</td>
</tr>
<tr>
<td>failed (1)</td>
<td>50% &lt; T</td>
</tr>
</tbody>
</table>

3.6 Retake and repeat

1) Second repetition of final test is subjected to a fee.
2) The CT1 can be retaken during the semester without any charge of fee.
3) The Homework can be submitted with fee until 16:00 o’clock of the end of the repetition period or until 23:59 electronically on the same day.
### 3.7 Estimated workload

<table>
<thead>
<tr>
<th>activity</th>
<th>hours/semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>contact hours</td>
<td>$14 \times 4 = 56$</td>
</tr>
<tr>
<td>preparation for the courses</td>
<td>14</td>
</tr>
<tr>
<td>homework</td>
<td>10</td>
</tr>
<tr>
<td>home studying of the written material</td>
<td>35</td>
</tr>
<tr>
<td>preparation for the examination</td>
<td>35</td>
</tr>
<tr>
<td><strong>in total</strong></td>
<td><strong>150</strong></td>
</tr>
</tbody>
</table>

### 3.8 Effective date

September 1, 2017.