

## I. Subject Specification

### 1. Basic Data

#### 1.1 Title

Különleges építőanyagok

#### 1.2 Code

BMEEOEMDT84

#### 1.3 Type

Module with associated contact hours

#### 1.4 Contact hours

Type	Hours/week / (days)
Lecture	2

#### 1.5 Evaluation

Exam

#### 1.6 Credits

3

#### 1.7 Coordinator

name	Dr. Balázs L. György
academic rank	Professor
email	<a href="mailto:balazs.gyorgy@emk.bme.hu">balazs.gyorgy@emk.bme.hu</a>

#### 1.8 Department

Department of Construction Materials and Technologies

#### 1.9 Website

<https://epito.bme.hu/BMEEOEMDT84>

<https://fiek2.mywire.org/course/view.php?id=3515>

#### 1.10 Language of instruction

hungarian and english

1.11 Curriculum requirements

Ph.D.

1.12 Prerequisites

1.13 Effective date

1 September 2017

## 2. Objectives and learning outcomes

### 2.1 Objectives

The main objective of the subject is to impart up-to-date knowledge about new construction materials that are the results of recent developments and the goals of further research.

### 2.2 Learning outcomes

Upon successful completion of this subject, the student:

#### A. Knowledge

1. Able to understand the role and purpose of application of the advanced construction materials in the system of the well-known materials.
2. Able to understand the micro- and macrostructural behaviour of the advanced construction materials by the physical and chemical explanations.
3. Able to understand how the application of the advanced materials will influence the service life of structures.

#### B. Skills

1. Able to recognize and identify the advantages of advanced construction materials.
2. Able to compare the service life of the structures made of ordinary or advanced materials.

#### C. Attitudes

1. Continuously expands his/her knowledge.
2. Strives for accurate and error-free problem recognition and evaluation.

#### D. Autonomy and Responsibility

1. Able to work independently.
2. Accepts critical comments.

## 2.3 Methods

Lectures, individual learning

## 2.4 Course outline

Hét	Előadások és gyakorlatok témaköre
1.	Introduction. Why and how can construction materials and technologies be further developed? / Dr. Balázs L. György
2.	Strengthening Materials and Methods I. / Balázs L. György
3.	Strengthening Materials and Methods II. / Dr. Sólyom Sándor
4.	<a href="#">Micromechanics of FRP and its constituents</a> I.-II. / Dr. Balázs L. György
5.	Fire - advanced materials I. / Dr. Lublós Éva
6.	Fire - advanced materials II. / Dr. Lublós Éva
7.	Advanced Materials – LWAC, Recycling in Concrete I. / Dr. Nemes Rita
8.	Advanced Materials – LWAC, Recycling in Concrete II. / Dr. Nemes Rita
9.	Advanced glass materials in construction / Dr. Nehme Kinga
10.	Concrete as radiation protection / Dr. Nehme Salem
11.	Zero cement concrete / Dr. Kopecskó Katalin
12.	Advanced materials in road construction / Dr. Fenyvesi Olivér
13.	Shape Memory Alloys / Dr. Balázs L. György
14.	3D-printed concrete in construction / Dr. Sólyom Sándor - Dr. Balázs L. György
15.	Exams

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

The presentations and other advised sources are uploaded.

## 2.6 Other information

## 2.7 Consultation

## **Különleges építőanyagok - BMEEOEMDT84**

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At a pre-arranged time (via e-mail):

balazs.gyorgy@emk.bme.hu

This Subject Datasheet is valid for:

Nem induló tárgyak

**II. Subject requirements**

Assessment and evaluation of the learning outcomes

## 3.1 General rules

## 3.2 Assessment methods

<b>Teljesítményértékelés neve (típus)</b>	<b>Jele</b>	<b>Értékelt tanulási eredmények</b>
Exam	E	A.1-A.3; B.1-B.2; C.1-C.2; D.1-D.2;

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>Jele</b>	<b>Részarány</b>
E	100
<b>Összesen</b>	<b>100%</b>

## 3.4 Requirements and validity of signature

n.a.

## 3.5 Grading system

<b>Érdemjegy</b>	<b>Pontszám (P)</b>
jeles (5)	85-100
jó (4)	74-84
közepes (3)	63-73
elégletes (2)	50-62
elégtelen (1)	0-49

## 3.6 Retake and repeat

Possible in the examination period.

## 3.7 Estimated workload

<b>Tevékenység</b>	<b>Óra/félév</b>
Lectures	28
Individual learning for the exam	62
<b>Összesen</b>	<b>90</b>

3.8 Effective date

1 September 2017

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