Materials of environmentally compatible construction - BMEEOEMDT81

I. Subject Specification

1. Basic Data

1.1 Title

Materials of environmentally compatible construction

1.2 Code

BMEEOEMDT81

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. Fenyvesi Olivér
academic rank	Associate professor
email	fenyvesi.oliver@emk.bme.hu

1.8 Department

Department of Construction Materials and Technologies

1.9 Website

https://epito.bme.hu/BMEEOEMDT81
https://fiek2.mywire.org/course/view.php?id=2522

1.10 Language of instruction

hungarian and english

1.11 Curriculum requirements

Ph.D.

1.12 Prerequisites

1.13 Effective date

1 September 2022

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2. Objectives and learning outcomes

2.1 Objectives

Students become familiar with the durability and emission properties of construction materials. Aspects and requirements of the selection of construction materials based on energy and raw material demand and toxic emission. Types of air, water, soil water and soil pollutions. Life Cycle Analysis (LCA) and its influencing factors. Cradle to grave and Cradle to building in approach. Natural construction materials and technologies, high-tech materials, alternative building materials and their properties.

2.2 Learning outcomes

Upon successful completion of this subject, the student:

A. Knowledge

1. Knows the properties of special construction materials
2. Knows the application technologies of natural, high-tech and alternative construction materials
3. Is able to choose and compare the construction materials based on an environmental point of view for different building elements.

B. Skills

1. Is able to judge and compare the advanced material properties,
2. Is able to choose the proper construction material for the building elements,
3. Is able to apply the theoretical phenomenon during exact technical tasks.
4. Is able to make an LCA on building material.

C. Attitudes

1. ;Cooperates with the professor,
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,
5. Can account for his/her opinion.
6. Is able to make a presentation about a short topic.

2.3 Methods

Lectures with the active participation of students, homework and presentation, technical excursion.

2.4 Course outline

Hét	**Előadások és gyakorlatok témaköre**
1.	Introduction, Homework issuance
2.	Air and water pollutions
3.	Soil and soil water pollutions
4.	Life cycle analysis - theory
5.	Life cycle analysis - modelling
6.	Natural building materials
7.	Waste materials, by-products in building products
8.	Hightech materials
9.	Alternative building materials
10.	Biodegradable thermal insulations
11.	Case studies
12.	Homework presentation
13.	Homework presentation
14.	Technical excursion: Skanzen Szentendre

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

lecture slides, videos, technical guides presented on the Moodle page of the subject.

2.6 Other information

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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: fenyvesi.oliver@emk.bme.hu

This Subject Datasheet is valid for:

Inactive courses

II. Subject requirements

Assessment and evaluation of the learning outcomes

3.1 General rules

The assessment of the learning outcomes is specified in clause 2.2. above and the evaluation of student performance occurs via homework, presentation of assignments, examination and classwork.

3.2 Assessment methods

Evaluation form	Abbrev.	Assessed learning outcomes
1. homework	HW	A.1-A.3; B.1-B.4; C.1-C.3; D.1
1. presentation	P	A.1-A.3; B.1-B.4; C.1-C.4; D.1-D.6
Examination	E	A.1-A.3; B.1-B.4; C.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

Abbreviation	Score
HW	30%
P	20%
Total achievable during the semester	**50%**
E	50%
Sum	**100%**

3.4 Requirements and validity of signature

Signification can be obtained by getting min. 50% of the available points on midsemester results (HW, P) and perform the required presence on contact hours.

3.5 Grading system

Grade	Points (P)
excellent (5)	85%<=T
good (4)	74%<=T<85%
satisfactory (3)	63%<=T<74%
passed (2)	50%<=T<63%
failed (1)	50%<T

3.6 Retake and repeat

1) The Homework can be submitted with a fee until the lecture on the 13. week in the study period. The presentation can not be delayed.

3.7 Estimated workload

Activity	Hours/semester
Contact hours	14×2=28

preparation for the lectures	14×0,5=7
homework	20
preparation for presentation	15
preparation for the examination	20
Sum	**90**

3.8 Effective date

1 September 2022

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Inactive courses