# COURSE SYLLABUS SEMESTER FALL 2020/2021

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| Name of Course | CONSTRUCTION MATERIALS 2 |
| **Course Code** | **MSM082AN-EA-00** |
| **Allotment of Hours per Week** | **2 lectures per week** |
| **Number of Credits** | **2** |
| **Program** | **M.Sc in Civil Engineering** |
| **Evaluation** | **Midterm- final exams, and presentation** |
| **Semester** | **1 st** |
| **Prerequisites** | **None** |
| **Department** | **Civil Engineering** |
| **Instructor** | **Ali Mohamed Mohamed Salem**  **Office: Boszorkány street 2 C0042**  **E-mail:** [**ali.salem@mik.pte.hu**](mailto:ali.salem@mik.pte.hu) |
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## OBJECTIVES

Students will gain from this course:

- Comparative knowledge of material properties for most common and advanced building materials,

- Understanding of typical and advanced applications of construction materials,

- Ability to identify crucial problem areas in manufacture and applications of building materials,

- Understanding of importance of experimental verification of material properties.

## CONTENTS

**Short description:**

This course provides an introductory about material and product manufacturing techniques and how they relate to mechanical and non-mechanical properties of the various materials. Special emphasis is given in the course to concrete mix design and concrete technology.

Explaining and discussing High-Performance Concrete, Special concretes, Fibre reinforced plastics (FRP), Timber, Smart materials, and Recycling of construction materials.

**Methodology:**

- Lectures: will give an advance knowledge to the properties, manufacturing and practical use of construction materials. Also will provide different application like High-Performance Concrete, Special concretes, Fibre reinforced plastics (FRP) , Timber, Smart materials, and Recycling of construction materials

- Exams: Accumulated knowledge is tested in two exams: a midterm and a final exam. Both feature multiple-choice, true-false or short essay questions.

**Schedule:**

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| **Week** | **Lecture** |
| Week 1 | Course description. Orientation.  Introduction to construction materials. |
| Week 2 | Concrete technology I. |
| Week 3 | Concrete technology II. |
| Week 4 | Reliability assessment of existing concrete structures based on non-destructive test data |
| Week 5 | Structural application of HPFRC, Fibre reinforced plastics (FRP) |
| Week 6 | Self-cleaning concrete, Glass fiber reinforced concrete, Light transparent concrete |
| Week 7 | **Midterm exam** |
| Week 8 | **Autumn break** |
| Week 9 | Recycling of construction materials |
| Week 10 | Materials with nano-technology |
| Week 11 | Rehabilitation and diagnostic |
| Week 12 | Timber Structures |
| Week 13 | **Student’s presentations.** |
| Week 14 | Final exam. |
| Week 15 | Second exams (only if required). |

## ATTENDANCE AND GRADING

**Attendance:**

Attending is required all classes, and will impact the grade (max. 10%). Unexcused absences will adversely affect the grade, and in case of absence from more than 30% of the total number of lesson will be grounds for failing the class. To be in class at the beginning time and stay until the scheduled end of the lesson is required, tardiness of more than 20 minutes will be counted as an absence. In the case of an illness or family emergency, the student must present a valid excuse, such as a doctor's note.

**Grading:**

10% - Attendance

30% - Assignments and Presentation

20% - Midterm Exam

40% - Final Exam

**Offered exam grade:**

Evaluation in percents Numeric grade

89%-100% 5

77%-88% 4

66%-76% 3

55%-65% 2

0-54% 1

**Students with Special Needs:**

Students with a disability and needs to request special accommodations, please, notify the Deans Office. Proper documentation of disability will be required. All attempts to provide an equal learning environment for all will be made.

## READINGS AND REFERENCE MATERIALS

- Peter Domone, John Illston: “Construction Materials: Their Nature and Behaviour”, Fourth Edition, 2010 by CRC Press, ISBN 9780415465151.

- Lecture notes and slides