

### General Information:

<b>Name of Course:</b>	<b>BUILDING MATERIALS</b>
<b>Course Code:</b>	PM-TATNM063OA
<b>Semester:</b>	2 <sup>nd</sup>
<b>Number of Credits:</b>	2
<b>Allotment of Hours per Week:</b>	2 Lectures /Week
<b>Evaluation:</b>	Signature (with grade)
<b>Prerequisites:</b>	None
<b>Instructor:</b>	<b>Dr. Zoltan ORBAN</b> Office: 7624, Pécs, Boszorkany u. 2. Office N° B315 E-mail: <a href="mailto:orbanz@mik.pte.hu">orbanz@mik.pte.hu</a>

### Introduction, General Course Description:

The course provides advanced knowledge in the field of building materials and technologies. The subjects covered include: specific properties of construction materials such as chemical, physical and mechanical properties, advanced concrete mix design and testing, concrete surfaces with high aesthetic requirements, high strength and high performance concrete, self-compacting concrete, foam concrete, fibre reinforced concrete, composite materials, industrial floors, novel insulation systems, application of nano-technology.

### Learning Objectives:

Students will gain from this course:

- Knowledge of specific material properties of building materials,
- Advanced knowledge of concrete mix design and testing,
- Overview on novel concrete technologies and construction products including the use of nano-technology.

### Methodology:

- **Lectures:** will give an introduction to the properties, manufacturing and practical use of building materials.
- **Practical class:** Students will be assigned tasks to complete. These tasks may expand on the experimental work and may have “research components” where students need to gather information required to complete a task and present its conclusions.
- **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:

Week	Topic of lecture
Week 1	Course description. Orientation.
Week 2	Historical and novel construction materials.
Week 3	Specific properties of construction materials.
Week 4	Advanced concrete mix design 1.
Week 5	Advanced concrete mix design 2. & 1 <sup>st</sup> assignment.
Week 6	Special concretes.
Week 7	Composite materials.

Week 8	<b>Midterm exam. Submit of 1<sup>st</sup> assignment.</b>
Week 9	<i>Break – no class</i>
Week 10	Industrial floors. 2 <sup>nd</sup> assignment: Short essay. Preparation for presentation.
Week 11	Novel insulation systems.
Week 12	Recycling of construction materials.
Week 13	Nano-technology in building materials. Presentations of 2 <sup>nd</sup> assignments.
Week 14	<b>Final exam</b>
Week 15	<b>Second exam (only if required). Presentations of 2<sup>nd</sup> assignments.</b>

### 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  
40% - Assignments  
25% - Midterm Exam  
25% - Final Exam

Grade:	5	4	3	2	1
Evaluation in percents:	89%-100%	77%-88%	66%-76%	55%-65%	0-54%

### 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.