**Institute of Building Engineering**

**Faculty of Civil Engineering, Warsaw University of Technology**

# Course: **Building Materials Engineering (in the framework of the ASK) - 2014**

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| Total: 30 h | Lectures: 15h | Lab: 15h |

**Lecturers:**

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| 1. Dr hab. inż. Andrzej Garbacz – Head of course
2. Dr inż. Tomasz Piotrowski – coordinator
3. Prof. dr hab. inż. Paweł Łukowski
4. Dr inż. Wioletta Jackiewicz-Rek
5. Dr inż. Agnieszka Kaliszuk-Wietecka
 | 1. Dr inż. Grzegorz Adamczewski
2. Dr inż. Wioletta Barcewicz
3. Mgr inż. Kamil Załęgowski
4. Dr inż. Maciej Cwyl
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### Course schedule:

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| Subject | Lecturer | Date |
| 1. Introduction to Building Materials Engineering (BME). Classification of materials in the field of BME; binder types; building composite types; concrete-like composites, fiber reinforced composites , steel and metal alloy, relation: chemical composition - properties (2h)
 | TPArch.302 | 10.039 - 11 |
| 1. SEMINAR: dissipation of semester projects for group of students. Subject of project: selected issues of building materials engineering (2h)
 | TPArch.302 | 10.0311 - 13  |
| 1. Sustainable buildings. Building energy performance requirements. Thermal insulation systems (2h)
 | AKWArch.302 | 31.039 - 11  |
| 1. SEMINAR: estimation of thermal properties of selected systems. Analytical and computer approach (2h)
 | AKWArch.302 | 31.0311 - 13  |
| 1. Cement concrete as a common construction material; type of cements; hydration process; admixtures and additives (1h).
2. LAB: Computer simulation of cement hydration; role of admixtures and additives in creation of interface transit zone (1h)
 | PŁIL 551 | 07.0410-12  |
| 1. An adhesion in building structures and joints; factors influencing adhesion; measures of adhesion; definitions and theories, other types of joints - ON-LINE (2 h)
 | TP | 10.0416 – 18  |
| 1. Type of joints in building structures (2h);
 | WBArch.302 | 14.049 - 11  |
| 1. Microstructures elements, methods of microstructure characterization, application of microscopes, stereology and fractography approach, methods of image analysis in application to buildings materials; relationship microstructure – properties. Surface engineering in building industry; self-cleaning properties of building surfaces - ON-LINE (2 h)
 | AG | 28.049 – 11 |
| 1. LAB: Characterization of selected microstructure properties based on image analysis; sample preparation, image selection rules for observation - ON -LINE (2h)
 | GA | 28.0414 – 16 |
| 1. LAB: technology of self-compacting concrete as the example of architectural concrete (4h)
 | WJ-RIL 548 | 12.0510 - 14  |
| 1. Facade systems; construction and material issues- ON-LINE (2 h)
 | MC | 05.0514 – 16 |
| 1. Deterioration of building structures – types and reasons. Methods of an anticorrosion protection: impregnation, injection, coatings. Selection of materials. Requirements according to European Directives and standards; Methods of concrete structures assessment; Semi- and nondestructive methods of a diagnosis - ON-LINE (2h)
 | TP | 26.0510 – 12 |
| 1. SEMINAR: Presentation of the student projects (4h)
 | TPArch.302 | 28.0510 – 14 |

Kolor czerwony zajęcia z bezpośrednim kontaktem ze studentami