1. Course number and name

RB-S1-19-W23-2F, Building Materials I

2. Credits and contact hours*

3 ECTS, lectures: 25 hours**, classes: 5 hours**, laboratory classes: 15 hours**

3. Instructor's or course coordinator's name

Jan Pizoń, MSc, PhD

4. Text book, title, author, and year

- Taylor G. D.: Construction materials. Longman Scientific & Technical, 1991.
- Illston J. M.: Construction materials, their nature and behaviour. E & FN Spon. 1994.

a. other supplemental materials

- Standards: EN 12670:2002, EN 12407:2010, EN 13373:2004, EN 1936:2010, EN 13755:2008, EN 1926:2007, EN 14157:2017-11, EN 14158:2005, EN 771-1+A1:2015-10, EN 772 - 11:2011E, EN 772 - 13:2001P, EN 772 - 16:2011E, EN 772-1+A1:2015-10, EN 1304:2013-10E, EN 1024:2012E, EN 539 – 1:2007P, EN 539 – 2:2013-07E, EN 538:1999P, EN 13183 – 1:2004, EN 13183 – 2:2004, EN 338:2016-06, EN 384:2016-10, EN 408:2012E, EN 1058:2010, EN 323:1999, EN 321:2004, EN 310:1994, EN 1097-3:2000, PN - EN 12085:2013-07E, EN 1602:2013, EN 12087:2013-07E, EN 1609:2013, EN 1427:2015, EN 1426:2015, EN 13111:2010E

5. Specific course information

a. brief description of the content of the course (catalog description)

Lectures:

(1) Basic information, (2) Actions on structures, (3) Permanent and variable actions, (4) Snow loads, (5) Wind action. (1) General information about building materials, Quality, control and standardization. Polish and European Standards. (2) Properties of building materials, (3) Stones, (4) Ceramics, (5) Timber, (6) Thermal insulating materials, (7) Hydro insulating materials, (8) Glass

Classes:

Introduction to laboratory classes, presentation of experiments and tests to be carried out.

Laboratory classes:

4 laboratory classes to perform on the following topics: stones, ceramics, insulating materials, timber.

b. prerequisites or co-requisites

No prerequisites and additional requirements

c. indicate whether a required, elective, or selected elective (as per Table 5-1) course in the program

Required.

6. Specific goals for the course

a. specific outcomes of instruction, ex. The student will be able to explain the significance of current research about a particular topic

The student can:

- describe selected mathematical, physical, chemical definitions, principles, rules and methods that are used in building materials technology,
- describe selected principles of industrial production of building materials and wares and their role in building object
- describe selected basic problems of modern civilization in range of building materials, development perspectives of building materials industry and influence of construction on the environment and vice versa
- give classifications of building materials – stones and building stones, ceramics, timber, insulating materials.,
- prepare plan and conduct simple laboratory tests for determining mechanical and physical characteristics of building materials and their durability,

b. explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

K1A_W01, K1A_W08, K1A_W10, K1A_U06

7. Brief list of topics to be covered

1. Basic properties of building materials (mechanical, physical, chemical). Classification of building materials, 2. Quality, control and standardization. Polish and European Standards. CE markings, declaration of performance, 3. Stones and building stones: classification, production, properties, protection of stones, methods of preservation, applications, 4. Ceramics: classification, raw materials, manufacture, properties, presentation of chosen ceramic ware, applications, 5. Timber: classification, production, structure of wood, composition and properties, problems associated with the use of timber. Natural defects of trees, fungal decay, insect damage. Methods of preservation of timber, applications. 6. Thermal and acoustical insulating materials: classification, production, properties, applications. 7. Bituminous materials: classification, production, asphalt's, tar's and mastics, properties and applications.

*- Consultations were not included in the contact hours

**-per semester