<table>
<tr><td>Course code</td><td></td></tr>
<tr><td>Type and description</td><td>EC</td></tr>
<tr><td>ECTS credit</td><td>1</td></tr>
<tr><td>Course name</td><td>Concrete Durability</td></tr>
<tr><td>Course name in Polish</td><td>Trwałość betonu</td></tr>
<tr><td>Language of instruction</td><td>English</td></tr>
<tr><td>Course level</td><td>8 PRK</td></tr>
<tr><td>Course coordinator</td><td>Marcin Koniorczyk</td></tr>
<tr><td>Course instructors</td><td>Marcin Koniorczyk, Dalia Bednarska, Alicja Wieczorek</td></tr>
<tr><td>Delivery methods and course duration</td><td>
<table>
<tr><th></th><th>Lecture</th><th>Tutorials</th><th>Laboratory</th><th>Project</th><th>Seminar</th><th>Other</th><th>Total of teaching hours during semester</th></tr>
<tr><td>Contact hours</td><td>0</td><td>0</td><td>0</td><td>15</td><td>0</td><td>0</td><td>15</td></tr>
<tr><td>E-learning</td><td>No</td><td>No</td><td>No</td><td>No</td><td>No</td><td>No</td><td></td></tr>
<tr><td>Assessment criteria (weightage)</td><td></td><td></td><td></td><td>1.0</td><td></td><td></td><td></td></tr>
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<tr><td>Course objective</td><td>Aims of the course is:
1. to make the student familiar with the material durability related problems,
2. to present the methods of concrete protections against the aggressive environment,</td></tr>
<tr><td>Learning outcomes</td><td>After the course student:
1. knows the basics of thermodynamics of processes in porous building materials W4
2. knows how to recognize the basic degradation mechanisms in concrete U4
3. knows how to determine the basic durability-related properties of concrete U4
4. knows how to effectively protect concrete W4</td></tr>
<tr><td>Assessment methods</td><td>W4 - oral exam
U4, K1 – project seminar presentation
W4, U4 – written project
The assessment based on project (100%)</td></tr>
<tr><td>Prerequisites</td><td></td></tr>
<tr><td>Course content with delivery methods</td><td>Thermodynamics of heat and mass transport in concrete
Durability related properties of concrete, associated mechanisms, experimental tests
Types of reinforced concrete corrosion (chloride, sulphate, freeze-thaw, etc)
The methods of concrete protection against the aggressive environment</td></tr>
<tr><td>Basic reference materials</td><td>1. A. Neville, Properties of Concrete, 2012.
2. J. Plank, E. Sakai, C.W. Miao, C. Yud, J.X. Hong, Chemical admixtures — Chemistry, applications and their impact on concrete microstructure and durability, Cement and Concrete Research 78 (2015) 81–99.
3. S.W. Tang, Y. Yao, C. Andrade, Z.J. Li, Recent durability studies on concrete structure, Cement and Concrete Research 78 (2015) 143–154.</td></tr>
<tr><td>Other reference materials</td><td></td></tr>
<tr><td>Average student workload outside classroom</td><td>10h</td></tr>
<tr><td>Comments</td><td></td></tr>
<tr><td>Last update</td><td>Brak informacji</td></tr>
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