



Subject card

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| Subject name and code | Technology of Concrete Production, PG_00060089 | | | | | | |
| Field of study | Civil Engineering | | | | | | |
| Date of commencement of studies | October 2022 | Academic year of realisation of subject | | | 2022/2023 | | |
| Education level | first-cycle studies | Subject group | | | | | |
| Mode of study | Full-time studies | Mode of delivery | | | at the university | | |
| Year of study | 1 | Language of instruction | | | Polish | | |
| Semester of study | 2 | ECTS credits | | | 3.0 | | |
| Learning profile | general academic profile | Assessment form | | | assessment | | |
| Conducting unit | Katedra Wytrzymałości Materiałów -> Faculty of Civil and Environmental Engineering | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | mgr inż. Lucyna Grabarczyk | | | | | |
| | Teachers | mgr inż. Lucyna Grabarczyk dr inż. Elżbieta Haustein mgr inż. Ryszard Chabros | | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 0.0 | 15.0 | 15.0 | 15.0 | 0.0 | 45 |
| | E-learning hours included: 0.0 | | | | | | |
| | Technologia Betonu - Moodle ID: 28582 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=28582 | | | | | | |
| Learning activity and number of study hours | Learning activity | Participation in didactic classes included in study plan | | Participation in consultation hours | | Self-study | SUM |
| | Number of study hours | 45 | | 0.0 | | 0.0 | 45 |
| Subject objectives | Acquainting with classification and meaning features technical ingredients of concrete, concrete blends and hardened concrete, the selection of elements of concrete and establishing the yard of concrete, classification and applying concrete, basic technological processes in the production of concrete. Methods of testing concrete properties. | | | | | | |

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| Learning outcomes | Course outcome | Subject outcome | Method of verification |
| | [K6_W06] Demonstrates practical knowledge and understanding of materials, devices and tools, processes and technologies in the field of civil engineering (and their limitations). | Student defines and explains on basic level of the concept and principles of concrete technology. | [SW2] Assessment of knowledge contained in presentation |
| | [K6_U02] Analyse & solve engineering issues & problems in the field of civil engineering by applying appropriate and relevant established analytical, numerical and experimental methods. | The student is able to investigate and analyze the basic properties of concrete. | [SU1] Assessment of task fulfilment |
| | [K6_U05] Conducts research (obtaining information, simulations, experimental methods) in the field of construction in order to solve specific tasks and report research results. | The student is able to make different types of concrete, compare design methods, their impact on the properties of concrete. He knows how to choose the right method to get the intended effect. | [SU4] Assessment of ability to use methods and tools |
| | [K6_U01] Apply knowledge and understanding of mathematics as well as sciences and engineering disciplines underlying civil engineering to solve engineering problems and issues. | he student selects the ingredients (aggregate, cement, admixtures, additives) and the method design of ordinary concrete. Student designs concrete with taking into account the purpose, method of laying and compaction concrete mix. | [SU5] Assessment of ability to present the results of task |
| [K6_W02] Demonstrate knowledge and understanding of the processes and established methods of analysis / solution of engineering issues & problems in the field of civil engineering and of their limitations. | The student is able to select the appropriate parameters of concrete for specific applications in structures. | [SW2] Assessment of knowledge contained in presentation | |
| Subject contents | Genesis and definition of concrete, binder, admixtures, additives and gravel. Basic parameters of binders. Gypsum and lime binders: types and characteristics. Types and classification of cements. The components of concrete, chemical and mineral composition. Special cements. Aggregates: classification, origin and characteristics. Water for concrete mix. Admixtures and additives. Concrete mix - its consistency, workability and homogeneity. Methods of concrete design. Concrete tests and the analysis of the results. Concrete mix production. Vibration. Concrete care. | | |
| Prerequisites and co-requisites | Fundamentals of concrete chemistry. | | |
| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
| | assessment of laboratory work | 60.0% | 50.0% |
| | Group presentation of research results | 60.0% | 50.0% |
| Recommended reading | Basic literature | 1. Neville A. M. , Properties of Concrete' | |
| | Supplementary literature | 1. Collepari M. 'New Concrete' Torino 2006 Grafiche Tintoretto | |
| | eResources addresses | | |
| Example issues/ example questions/ tasks being completed | 1. Discuss the properties of phase constants in the clinker. 2. Discuss the process of ordinary concrete design method 3R | | |
| Work placement | Not applicable | | |