

KARTA PRZEDMIOTU

| Faculty of Civil Engineering and Environmental Sciences | | | | | | | | | |
|---|---|---|---|----|----|---|---|---------------------------|-------------------------------------|
| Field of study | Civil Engineering | | | | | | | Level and form of studies | bachelor degree (full-time studies) |
| Specialty / diploma path | Common subject | | | | | | | Education profile | general academic |
| Name of the classes | Technogy of construction works I | | | | | | | Item of the classes | B1S41030 |
| | | | | | | | | Type of the classes | obligatory |
| Forms of classes and number of hours | W | Ć | L | P | Ps | T | S | Semester | 4 |
| | 30 | | | 30 | | | | Points ECTS | 5 |
| Introductory subjects | construction, building materials, concrete technology, basics of concrete structures | | | | | | | | |
| Objectives of the course | To acquaint students with the basic concepts used in the technology of construction works. Teaching the identification of works and technological processes occurring in the implementation of building structures. Familiarizing students with the types of machines to perform construction works and the characteristics of their work. Developing the ability to design and analyze the implementation of technological processes by the complex mechanization method (designing a set of machines). | | | | | | | | |
| Program content | <p>Lecture: Definition of the construction process, definition of the technological process. Simple and complex technological processes. Mechanization of construction processes (partial, comprehensive, automation, robotics). Complex mechanization method - definition and sequence of actions when designing the execution of technological processes, selection of machine sets. Construction transport technology (types of transport and used machines). Technology and mechanization of complex work processes: earthworks, monolithic works, assembly and finishing works. Breakdown of complex processes into simple processes, and thenon technological operations and the selection of machines for their implementation.</p> <p>Project (students carry out projects in teams):</p> <ol style="list-style-type: none"> 1. Design of the technology of wide-area excavation (simple process). 2. Design of monolithic works execution technology - complex process (formwork assembly process, reinforcement works execution process and concrete works execution process). 3. Design of the assembly technology of a prefabricated industrial hall (simple process). | | | | | | | | |
| Teaching methods | Information lecture, problem lecture, project method | | | | | | | | |

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| The form of completing of the classes | Lecture - written exam, project - project execution, project defense | |
| Learning effect symbol | Assumed learning outcomes | Reference to directional learning outcomes |
| EU1 | He knows the basic concepts and principles of the identification of technological processes in construction. Has the necessary knowledge of the type of operating parameters of machines used in construction. | K_B1_W08 K_B1_W11 K_B1_W12 |
| EU2 | He can analyze the technological process of construction works, divide a simple process into operations and assign machines to their execution. | K_B1_W11 K_B1_W08 K_B1_U11 |
| EU3 | He can design sets of machines to perform construction processes, using the method of complex mechanization with computer support. He can analyze the obtained results. Is able to establish health and safety requirements in the implementation of construction works. | K_B1_W02 K_B1_W08 K_B1_U07 K_B1_U10 |
| EU4 | He knows how to prepare a technology design for construction works: earthworks, monolithic and assembly works. Can calculate the efficiency and working time of machines used to perform individual processes, can work in a team. | K_B1_U02 K_B1_U07 K_B1_U10 K_B1_U14 |
| EU5 | Is able to use internet and other databases (e.g. product catalogs, consultations with experts, etc.) | K_B1_K02 |
| EU6 | He is prepared to critically assess his knowledge and received content in the field technology of construction works. | K_B1_K01 |
| Learning effect symbol | Ways of verifying learning outcomes | The form of classes in which the verification takes place |
| EU1 | written exam | W |
| EU2 | written exam, project defense | W, P |
| EU3 | written exam, project defense | W, P |
| EU4 | project defense | P |
| EU5 | project defense | P |
| EU6 | Written exam, project defense | W, P |
| Balance of student workload (in hours) | | Number of hours. |
| Calculation | participation in lectures | 30 |
| | participation in design exercises | 30 |
| | preparation for project exercises, | 30 |
| | own work on projects (at home) | 30 |
| | preparation for the exam and attendance at it | 5 |
| | SUM: | 125 |

| Quantitative indicators | | HOURS | ECTS |
|--|--|--|------|
| Student workload related to the classes requiring the direct participation of the teacher. | | 65 | 2,5 |
| Student workload related to practical classes | | 60 | 2,5 |
| Basic literature | <ol style="list-style-type: none"> 1. Rowiński L. Technologia i organizacja procesów inżynierskich budownictwa miejskiego. Tom 3. Wydawnictwo Politechniki Śląskiej. 1996 2. Linczowski Cz. Technologia robót budowlanych. Politechnika Świętokrzyska. Kielce, 2000 3. Orłowski Z.: Podstawy technologii betonowego budownictwa monolitycznego. Wydawnictwo Naukowe PWN, Warszawa 2010. 4. Martinek W. Nowak P. Wojciechowski P.: Technologia robót budowlanych, Politechnika Warszawska, Warszawa 2012 | | |
| Supplementary literature | <ol style="list-style-type: none"> 1. Instrukcja 431/2008 „Warunki techniczne wykonania i odbioru robót budowlanych” Konstrukcje betonowe i żelbetowe. Instytut Techniki Budowlanej, Warszawa, 2008 2. Chandler I.: Building Technology. Site Organization and Metod. Mitchell, Londyn, 1992 3. Kiernożycki Wł.: Betonowe konstrukcje masywne. Teoria, Wymiarowanie, Realizacja. Polski Cement Sp. z o.o., Kraków 2003 4. Rozporządzenie Ministra Infrastruktury z dnia 6 lutego 2003 r. w sprawie bezpieczeństwa i higieny pracy podczas wykonywania robót budowlanych (Dz. U. z dnia 19 marca 2003 r.) | | |
| Executing unit | Department of Building and Road Engineering | Date of the program development | |
| The program was developed by | Katarzyna Kalinowska-Wichrowska, PhD Nina Szklennik, M.Sc. | 30.01.2019 | |