GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

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| Subject name and code | , PG_00069274 | | | | | | |
| Field of study | Civil Engineering | | | | | | |
| Date of commencement of studies | October 2023 | | Academic year of realisation of subject | 2026/2027 | | | |
| Education level | first-cycle studies | | Subject group | | | | |
| Mode of study | Full-time studies | | Mode of delivery | at the university | | | |
| Year of study | 4 | | Language of instruction | Polish | | | |
| Semester of study | 7 | | ECTS credits | 2.0 | | | |
| Learning profile | general academic profile | | Assessment form | assessment | | | |
| Conducting unit | Department of Building Structures and Material Engineering -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr hab. inż. Łukasz Skarżyński | | | | | |
| | Teachers | | | | | | |
| Lesson types | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 15.0 | 0.0 | 0.0 | 15.0 | 0.0 | 30 |
| | E-learning hours included: 0.0 | | | | | | |
| 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 | 30 | | 2.0 | 18.0 | 50 | |
| Subject objectives | The aim of the course is to familiarize students with prefabricated structures, as well as with structural elements under dynamic and cyclic loading. | | | | | | |

## Learning outcomes

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [K6_K01] Is aware of the key aspects of professional, ethical and social responsibility related to management, business operation, decision making and opinion formulation in civil engineering. | Student has general knowledge in the subject area. | [SK3] Assessment of ability to organize work<br>[SK1] Assessment of group work skills |
| [K6_U07] Design and build engineering structures in a sustainable manner, with care for the natural environment and a minimum carbon footprint | Student has general knowledge in the subject area. | [SU2] Assessment of ability to analyse information |
| [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 has general knowledge in the subject area. | [SW3] Assessment of knowledge contained in written work and projects |
| [K6_W07] Understand the investment's impact on the environment and the interrelationships and dependencies between the building structure and the natural environment | Student has general knowledge in the subject area. | [SW2] Assessment of knowledge contained in presentation |
| [K6_U06] Conduct engineering activities in<br>civil engineering subject area, using and<br>applying practical knowledge and understanding of materials, equipment<br>and tools, processes and technologies. | Student has general knowledge in the subject area. | [SU5] Assessment of ability to present the results of task<br>[SU4] Assessment of ability to use methods and tools<br>[SU3] Assessment of ability to use knowledge gained from the subject<br>[SU2] Assessment of ability to analyse information<br>[SU1] Assessment of task fulfilment |

## Subject contents

Course content – lecture

1. Discussion of prefabricated systems used in Poland in the 1960s, 1970s, and 1980s.
2. Discussion of issues related to the analysis of structures under dynamic loads.
3. Discussion of issues related to the analysis of structures under cyclic loads.

Course content – project

1. Analysis of selected structural elements of precast reinforced concrete halls.
2. Analysis of selected structural elements subjected to dynamic loads.
3. Analysis of selected structural elements subjected to cyclic loads.

## Prerequisites and co-requisites

## Assessment methods and criteria

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| Project | 50.0% | 40.0% |
| Colloquium | 50.0% | 60.0% |

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|---|---|---|
| Recommended reading | Basic literature | 1. Applicable building law provisions.<br><br>2. Applicable standards.<br><br>3. Runkiewicz, L. i Plechawski, S. Ocena stanu technicznego sprężonych dźwigarów dachowych w eksploatowanych obiektach budowlanych. Przegląd budowlany, 11/2008.<br><br>4. Sieńko, R. i Szydłowski, R. Badanie kablobetonowych dźwigarów dachowych KBOS-18 w trakcie symulacji korozyjnego pękania cięgien. Badania materiałów budowlanych i konstrukcji inżynierskich.<br><br>5. Katalog Typowych Rozwiązań do Projektowania Prefabrykowanych Hal Przemysłowych. Zeszyt 1 do 8. Centralny Ośrodek Badawczo Projektowy Budownictwa Przemysłowego. |
| | Supplementary literature | Not applicable. |
| | eResources addresses | |
| Example issues/ example questions/ tasks being completed | 1. Stress analysis of selected structural elements of a prefabricated reinforced concrete hall.<br>2. Foundation dimensioning for dynamic loads. | |
| Practical activites within the subject | Not applicable | |

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