COURSE DESCRIPTION CARD - SYLLABUS

Course name
Prefabrication methods [S2Bud1-IPB>MP]

Course

Field of study
Civil Engineering

Year/Semester
1/2

Area of study (specialization)
Construction Engineering and Management

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes
0

Other (e.g. online)
0

Tutorials
0

Projects/seminars
0

Number of credit points

1,00

Coordinators

dr inż. Michał Demby
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Lecturers

Prerequisites

The student should have knowledge of building materials and concrete technology, general construction, concrete, metal and wooden structures, broadly understood construction technologies.

Course objective

The aim of the course is to show the latest achievements in the field of prefabrication of building elements and an overview of contemporary construction implementations at the construction site.

Course-related learning outcomes

Knowledge:
KB_W05: knows in detail the currently used building materials and products, their properties and test methods, as well as the technologies of their production and assembly

Skills:
KB_U17: can obtain information and integrate it, make its creative interpretation and evaluation, draw conclusions, formulate and justify opinions on technologically advanced materials and structures

Social competences:
KB_K03: is ready to independently expand knowledge in the field of modern processes and technologies in construction

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
The knowledge acquired during the lecture is verified on a final test at the end of the semester. Student can get max. 25 points, where 13 is required to get a credit.

Programme content

Principles of designing and constructing prefabricated structures. An overview of various structural elements with particular attention to the connections between them.

Course topics

1. Introduction to prefabrication.
2. Systemic large-panel construction
3. Prefabricated slabs.
4. Prefabricated beams.
5. Prefabricated columns.
6. Accessories embedded in concrete. Mounting hooks.

Teaching methods

Lecture: multimedia presentation

Bibliography

Basic
1. Adamczewski G., Woyciechowski P.: Prefabrykacja w XXI wieku. Inżynier Budownictwa, 4/2015.
2.Józef Jasiczak, René-Xavier Gérard, Lech Wojtasik, Paweł Bryszak, Krzysztof Cichocki, Jarosław Kołodziej :Wytwarzanie elementów dla innowacyjnego systemu energooszczędnego budownictwa prefabrykowanego w ramach projektu Plus Energy Prefab House. Wydanie 2(86)/2019 .BTA, Kraków, s.56-62.
3. Jasiczak J.: Nowoczesne materiały i technologie budowlane - wykłady dla studentów II stopnia kierunku budownictwo. Skrypt internetowy PP. S.171. 2018
4. Pawłowski A.Z.: Budynki wysokie. Wydawnictwo Politechniki Warszawskij, 2013,s.288.
Additional
[1] Adamczewski Grzegorz, Piotr Woyciechowski. 2014. Prefabrykacja – jakość, trwałość, różnorodność. Stowarzyszenie Producentów Betonów.
[2] Blaiszik Benjamin J., S. L. B. Kramer, S. C. Olugebefola, J. S.Moore, N. R. Sottos, S. R. White. 2010. „Self-Healing Polymers and Composites". Ann. Rev. of Mat. Res., s. 179 – 211.
[3] Davidovits Joseph. 2011. Geopolymer Chemistry & Applications. 3rd edition, Institut Géopolymère, Saint-Quentin. France.
[4] Hansen C. J.,W.Wu, K. S. Toohey, at al. 2009. „Self-HealingMaterials with Interpenetrating Microvascular Networks". Advanced Materials, Weinham 21, s. 1 – 5.

Breakdown of average student's workload

	Hours	ECTS
Total workload	30	1,00
Classes requiring direct contact with the teacher	15	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	15	0,50