



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Prefabrication methods

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### Course

Field of study

Civil Engineering

Area of study (specialization)

Construction Engineering and Management

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

1/2

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

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### Number of hours

Lecture

15

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

0

### Number of credit points

1

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### Lecturers

Responsible for the course/lecturer:

prof. dr hab.inż. Józef Jasiczak

Responsible for the course/lecturer:

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### 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:

The knowledge acquired during the lecture is verified on a final test at the end of the semester. The exam consists of three blocks of questions. Two are indicated by the examiner, one - to be chosen by the student. Passing threshold - 70%.

### Programme content

Lecture: evolution of concrete prefabricated construction technology - 1959 - 2020, methods of industrial production of concrete, steel and wooden prefabricated elements; prefabrication plants of the 70s and 21st century, technologies of production of selected groups of products for housing, public utility, industrial, communication, problems of transport and assembly.

### Teaching methods

Lecture: multimedia presentation + films from the implementation of selected objects.

### 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 Warszawskiej, 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, et al. 2009. „Self-Healing Materials with Interpenetrating Microvascular Networks”. Advanced Materials, Weinham 21, s. 1 – 5.

**Breakdown of average student's workload**

|   | Hours | ECTS |
|---|-------|------|
| Total workload  | 25    | 1,0  |
| Classes requiring direct contact with the teacher   | 15    | 0,5  |
| Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup> | 10    | 0,5  |

<sup>1</sup> delete or add other activities as appropriate