



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Basics of Precast Production

### Course

Field of study

**BUILDING ENGINEERING**

Area of study (specialization)

Without

Level of study

First-cycle studies

Form of study

part-time

Year/Semester

**2/4**

Profile of study

**general academic**

Course offered in

**English**

Requirements

**elective**

### Number of hours

Lecture

**10**

Tutorials

Laboratory classes

Projects/seminars

**10**

Other (e.g. online)

### Number of credit points

**2**

### Lecturers

Responsible for the course/lecturer:

prof. dr hab.inż. Józef Jasiczak

Responsible for the course/lecturer:

### 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

Presentation of building structures in terms of their field or factory prefabrication.

### Course-related learning outcomes

Knowledge



KB\_W13 have advanced knowledge of building materials and their properties, research methods, basic elements of design as well as performance and assembly technologies (including environment-friendly materials).

#### Skills

KB\_U21 are able to organise work at the construction site, applying the rules of technology and building engineering management.

#### Social competences

KB\_K01 are able to adapt to new and changing circumstances, can define priorities for performing tasks assigned by themselves and by other people, acting in the public interest and with regard to the purposes of sustainable development.

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

The knowledge acquired during the lecture is verified at the 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%. Design exercise: report preparation, grade 3 - 5.

### Programme content

Lecture: evolution of the technology of prefabrication of building elements, methods of industrial production of concrete and wooden prefabricates; prefabrication plants of the 70s XX and 21st century, design and calculation of forms for concrete prefabrication, production technologies of selected groups. Elements in Precast Concrete Building Systems. Design exercise: for a given concrete element, develop a design of a steel form and a concrete concreting technology in field or factory conditions.

### Teaching methods

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

### Bibliography

#### Basic

1. Bołtryk M., Lelusz M. : Technology of prefabricated structures. Białystok 2004.
2. Bielawski J., Chrabczyński G., Hładyniuk W. : Designing forms for building prefabrication. WNT, Warsaw 1978.
3. Bielawski J., Cieszyński K., Hładyniuk W., Szymański E., Wojciechowski H. : Industrial production of prefabricated elements. Basic processes in the production of precast concrete elements. Warsaw 1987.
4. Nicał A. : Review of production methods for selected prefabricates for large-scale construction. Modern halls, 2/2019.
5. Adamczewski G., Wojciechowski P. : Prefabrication in the 21st century. Civil Engineer, 4/2015.
6. Józef Jasiczak, René-Xavier Gérard, Lech Wojtasik, Paweł Bryszak, Krzysztof Cichocki, Jarosław



Kołodziej: Manufacturing elements for an innovative energy-saving prefabricated building system as part of the Plus Energy Prefab House project. Issue 2 (86) / 2019 BTA, Kraków, pp. 56-62.

7. Jasiczak J.: Modern construction materials and technologies - lectures for 2nd degree students of construction. PP web script. S.171. 2018

#### Additional

8. Housing systems W-70, Szczeciński, SBO, SBM-75, WUF-T, OWT-67, WWP Arkady, Warsaw 1974

9. Ścislewski Z., Suchan M., Safety of use. Technical problems of using large-panel buildings, Instruction ITB 381/2003

#### Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,0
Classes requiring direct contact with the teacher	20	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	30	1,0

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