COURSE DESCRIPTION CARD - SYLLABUS

Course name

PO Multidisciplinary Project

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 studies

Course offered in

English

Form of study

full-time

Requirements

compulsory

Number of hours

Lecture

15

Laboratory classes

0

Other (e.g. online)

0

Tutorials

15

Projects/seminars

30

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

dr hab. inż. Jerzy Pasławski, prof. PP

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ul. Piotrowo 5, 60-965 Poznań

Responsible for the course/lecturer:

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Prerequisites

The student has basic knowledge of the basics of construction; The student is able to obtain information from the indicated sources and analyze engineering activities undertaken; The student is aware of the need to constantly update and supplement construction knowledge and take responsibility in professional work; The student is aware of the issues of management in construction

Course objective

Learning and expanding knowledge of the basic principles of construction, management in construction in the aspect of implementation of a construction project. Sensitizing the student to practical aspects of construction management

Course-related learning outcomes

Knowledge

1. Have detailed knowledge of the impact of building investments on the environment and understand the need to implement the rules of sustainable development.

2. Have detailed knowledge in the field of operation algorithms of selected software supporting the analysis and design of building facilities, which are also useful to plan and manage construction projects, including Building Information Modelling (BIM).

3. Know in detail the rules of developing the procedures of construction project quality management; have knowledge of the effectiveness, costs and timing of construction projects under risk and uncertainty conditions.

Skills

1. Utilizing the obtained knowledge, they can select appropriate (analytical, numerical, simulation, experimental) methods and tools to solve technical problems.

2. Applying scientific rules and skills, are able to formulate and test hypotheses related to simple research problems, in order to solve engineering, technological and organisational problems in construction engineering; can prepare studies preparing for research work.

3. Can estimate hazards of building projects and building operation, implement suitable safety rules and prepare work standards as well as quality management procedures. .

Social competences

1. Can realise that it is necessary to improve professional and personal competence; are ready to critically evaluate the knowledge and received content..

2. Understand the need to transfer to the society the knowledge about building engineering, transfer the knowledge in a clear and easily comprehensible manner.

3. Are ready to think and act in a business-like way.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

As a form of measuring / assessing student work, a final test is carried out (during the last class)

Grade scale determined% from:

90 very good (A)

85 good plus (B)

75 good (C)

65 sufficient plus (D)

55 satisfactory (E)

below 54 insufficient (F)

Programme content

Lecture 1 - Introduction

Lecture 2 - Modular constructions

Lecture 3 - Formworks

Lecture 4 - Active house, energy efficiency

Lecture 5 - Selection of parameters of the ready mix concrete delivery process based on the modeling of the production, delivery and concrete mix laying processes

Lecture 6 - Management of the low-temperature concreting process based on the simulation of processes in concrete and its surroundings

Lecture 7 - Lesigning infrastructure facilities using the idea of flexibility - life cycle model - alternatively modeling options for different scenarios

Project 1 - Introduction, energy efficiency

Project 2-6 - Project overview - active house

Project 7 - submition

Tutorial 1- Introduction

Tutorial 2-4 Energy efficiency of buildings, sustainable solutions

Tutorial 5-6 - Modular housing

Tutorial 7 - Submition

Teaching methods

Pyramid discussion; Panel discussion; The classic problem method; Exchange of ideas; Computer applications, Informative lecture; Problem lecture; Conversational lecture; Program text; Work with a book; Talk; Lecture reading; Demonstration method; ; Production exercise method; Method of experiments; Observation and measurement method; Project method; Leading text method; Workshop method; Show.

Bibliography

Basic

1. Schmidt R III, Austin S. Adaptable Architecture, theory and practice; Routledge Taylor & francis Group, London, NY 2016

2. March. Ch. Operations management for construction, Hoboken, NJ : Taylor and Francis, 2009. - 223 p.

3. Neufert E. Bauentwurtfslehre; Vieweg & Sohn; Wiesbaden, 2000

Additional

1. J. Douglas, Building adaptation. 2nd ed. Great Britain, Elsevier Ltd. 2006

Breakdown of average student's workload

	Hours	ECTS
Total workload	90	3,0
Classes requiring direct contact with the teacher	60	2,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) [1]	30	1,0

[1] delete or add other activities as appropriate