COURSE DESCRIPTION CARD - SYLLABUS

Course name
Construction Process Design

Course

Field of study	Year/Semester
Building Engineering	1/2
Area of study (specialization)	Profile of study
Construction Engineering and Management	general academic
Level of study	Course offered in
Second-cycle studies	english
Form of study	Requirements
full-time	compulsory

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
30	-	-
Tutorials	Projects/seminars	
15	-	

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

dr hab. inż. Jerzy Pasławski, prof. nadzw.
e-mail: jerzy.paslawski@put.poznan.pl
tel. +48616652113

Responsible for the course/lecturer:

mgr inż. Kinga Katafoni
e-mail: kinga.katafoni@put.poznan.pl
tel. +48616552181

Prerequisites

Basic knowledge about designing construction processes. Student is able to perform basic analysis of construction process.

Course objective

Knowledge how to design and perform simulation of construction process, based on main simulation methods.

Course-related learning outcomes

Knowledge

Student
- knows in detail the rules of developing the procedures of construction project quality management and uses it to perform simulations
- knows and understand the need for systematic evaluation and maintenance of structure technical condition, with useage of modern solutions (monitoring, simulation, IoT)

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Skills

Student:

- uses advanced and specialized tools in order to obtain software supporting organizer of building engineering works

-utilizing the obtained knowledge, can select appropriate (simulation) methods and tools to solve technical problems

Social competences

Student:

- takes responsibility for the reliability of working results and their interpretation

-is ready to autonomously complete and broaden knowledge in the field of modern processes and technologies of building engineering

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Student work includes:

-project concerning three main methods in simulation (System Dynamics, Discrete-Event, Agent-Based)

-presentation of choosen topic related to process design

Rating scale:

91-100 A

81-90 B

71-80 C

61-70 D

51-60 E

<50 F

Programme content

Lectures: Introduction of construction site management aproach, usage of modern technologies (genesis and development)

Tutorials: Introduction of basic simulation methods (genesis and development of simulation) as well as introduction of modern technology used on construction sites (IoT, Machine Learning).

Teaching methods

Lectures: problem lecture/lecture with presentations/ case study

Tutorials: method based on useage of various source of knowlegde such us: film, photos, source files and prsentations/ Case study/ Project method includes designing and performing simulation model and result testing.

Bibliography

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Basic

1. Kaplinski O., Modeling of construction processes. A managerial approach., PAN, Warszawa 1997

2. Grigoryev I., AnyLogic in Three Days: Modeling and Simulation Textbook, Fifth edition, 2018

Additional

1. A. Borshchev, I.Grigoryev, The Big Book of Simulation Modeling. Multimethod Modeling with AnyLogic8, Anylogic North America, 2013)

Breakdown of average student's workload

	Hours	ECTS
Total workload	90	3,0
Classes requiring direct contact with the teacher	45	1,5
Student's own work (literature studies, preparation for tutorials, preparation for tests) [1]	45	1,5

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[1] delete or add other activities as appropriate