COURSE DESCRIPTION CARD - SYLLABUS

Course name
Integrated management in life cycle

Course

Field of study
Sustainable Building

Year/Semester
3/VI

Area of study (specialization)

Profile of study
general academic

Level of study
First-cycle studies

Course offered in
English

Form of study
full-time

Requirements
elective

Number of hours

Lecture
15

Laboratory classes

Other (e.g. online)

Tutorials

Projects/seminars
15

Number of credit points

2

Lecturers

Responsible for the course/lecturer:
dr inż. Agnieszka Dziadosz

email: agnieszka.dziadosz@put.poznan.pl

tel. +48 61 665 2454

Instytut Budownictwa

Piotrowo 5

Responsible for the course/lecturer:
dr inż. Marcin Gajzler

email: marcin.gajzler@put.poznan.pl

tel. +48 61 665 2454

Instytut Budownictwa

Piotrowo 5

Prerequisites

Knowledge of basic computer support tools and concepts in the field of the investment cycle and the life cycle of the facility

Course objective

Learning about selected methods and tools helpful in designing and planning the implementation of construction projects at individual stages of the life cycle of the facility - from initial concepts through architectural and structural design and implementation planning to supporting maintenance and operation

Course-related learning outcomes

Knowledge

- has basic knowledge about algorithms of selected computer programs (also using BIM technology) supporting the calculation and design of structures, organization of construction works, cost estimation and technical equipment of buildings as well as algorithms of programs for evaluation and design of energy-saving buildings

- has knowledge of the organization and principles of construction management, creating quality management procedures for construction works; knows work norms in construction

Skills

- is able to use information and communication techniques appropriate to carry out tasks typical of engineering activities

- is able to make a preliminary economic analysis of engineering activities undertaken in the field of: buildings, technical systems for buildings and external infrastructure as well as for elements and systems used in the built environment; knows how to prepare a simple cost estimate and work schedule

Social competences

- is responsible for the reliability of the results of his work and their interpretation

- is aware of the need to improve professional and personal competences, understands the need and knows the possibilities of continuous training (second and third cycle studies, post-graduate studies, courses)

- has the ability to critically assess the results of their own work

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

lecture - written test (open questions, test)

design exercises - making a cost estimate using BIM technology, preparing an economic analysis for the full life cycle of the facility

Rating scale specified% from:

90 very good (A)

85 good plus (B)

75 good (C)

65 sufficient plus (D)

55 sufficient (E)

below 54 insufficient

Programme content

The specificity of construction in terms of the duration of the life cycle. Object life cycle - characteristics of individual stages. The specificity of multi-sector design. Basics of BIM technology in design. Basics of IPD (integrated project delivery). BIM in supporting the preparation of the implementation. Cost estimate in BIM. Tools of economic analysis in the facility's life cycle

Teaching methods

1. Lecture with multimedia presentation

2. Design exercise with elements of solving tasks

Bibliography

Basic

1. Tomana A.:BIM. Innowacyjna technologia w budownictwie, PWB Kraków , 2015

2. Brad H.: BIM and Construction Management. Wiley, 2015

3. Whyte A.: Life Cycle Cost Analysis of Built Assets. VDM Verlag, 2011

Additional

1. Fisher M.: Integrating Project Delivery. Wiley, 2017

Breakdown of average student's workload

	Hours	ECTS
Total workload	45	2,0
Classes requiring direct contact with the teacher	30	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) [1]	15	1,0

[1] delete or add other activities as appropriate