COURSE DESCRIPTION CARD - SYLLABUS

Course name
BIM - effective support of the construction process

Course

Field of study
Civil Engineering
Area of study (specialization)
-
Level of study
First-cycle studies
Form of study
part-time

Year/Semester
3/6
Profile of study
general academic
Course offered in
Polish
Requirements
compulsory

Number of hours

Lecture
10
Laboratory classes
10
Other (e.g. online)
0
Tutorials
0
Projects/seminars
0

Number of credit points

2

Lecturers

Responsible for the course/lecturer:
dr eng. Anna Knitter-Piątkowska

email: anna.knitter-piatkowska@put.poznan.pl

tel. 61 665 20 48

Faculty of Civil and Transport Engineering

ul. Piotrowo 5, 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites

Knowledge: the student knows the principles of descriptive geometry and technical drawing in the field

of reading and drawing working drawings and documentation (architectural, construction, geodetic maps and others depending on the industry) with the use of CAD, knows the sequence of consecutive stages of the design and construction stages, knows the methods of planning the construction (or demolition) process of a building object, has knowledge of the scope of competences of the different professions involved in a building project.

Skills: the student can read, execute, edit and print drawings of documentation (architectural, construction, surveying maps and others depending on the industry) using CAD, can find software and software usage tutorials that can help in the development of the project, is able to independently seek out relevant help to hardware or software problems, can use modern methods of information exchange (internal network, internet, data storage clouds, cloud computing) .

Social competences: the student is able to interact and work in a group and follows the rules of ethics.

Course objective

Acquire the knowledge, skills and competence in the field of using BIM in the effective support of the construction process.

Course-related learning outcomes

Knowledge

Student knows BIM terminology

Student knows the advantages of BIM in comparison to traditional project delivery.

Student knows the methods for cross-disciplinary coordination of models.

Student knows the BIM software.

Student knows the principles of work in BIM at different levels of detail (LOD).

Skills

Student can input documentation drawings prepared with the use of CAD as a background in 3D model.

Student is able to identify the need for model sharing and coordination in the multidisciplinary project context.

Student is able to find and apply BIM objects with a LOI relevant to the project stage and the specific use.

Student can generate views, sheets, visualizations

Social competences

Student is responsible for the reliability of the obtained results and their interpretation

Student is ready to critically assess their knowledge and the received content.

Student is ready to critically evaluate 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 (duration 60-90 minutes), the date is given at the beginning of the semester, lecture is passed in the case of positive mark (at least E).

Laboratory classes - assessment based on the current preparation for classes and activities and the implementation and defense of the project (at least E).

Scale of the evaluation:

excellent (A)

good (B)

average (C)

passing (D)

near failed (E)

failed (F)

Programme content

What is BIM. BIM as a building model. BIM as a process. Big BIM — little bim. BIM levels of development. BIM vs. OpenBIM. IFC format for the exchange of BIM models. Interoperability in the BIM context. Model level of development (LOD). The principles of good practice in BIM. BIM - responsibility and copyrights. How to create a correct BIM model. Modeling errors. BIM in the world. BIM in Poland. BIM software. Tools and functions supporting work on the BIM model. BIM at the construction site. Facility Management.

Teaching methods

informative and conversational lecture, multimedia presentation, method of projects, practical methods, computer laboratory work

Bibliography

Basic

1. D. Kasznia, J. Magiera, P. Wierzowiecki, BIM w praktyce: standardy, wdrożenie, case study, PWN, 2017.

2. A. Tomana, BIM - innowacyjna technologia w budownictwie: podstawy, standardy, narzędzia, Builder, 2016.7. Przewłócki J., Górski J.: Podstawy mechaniki Budowli. Arkady, Warszawa, 2006

Additional

1. A. Borrmann et al., Building Information Modeling - technology foundations and industry practise, Springer International Publishing, 2018.

Breakdown of average student's workload

	Hours	ECTS
Total workload	60	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) [1]	40	1,0

[1] delete or add other activities as appropriate