



Course title: **COMPUTER-AIDED DESIGN WITH BIM TECHNOLOGY**

ECTS credit allocation (and other scores): 2.5

Semester: autumn

Level of study: ISCED-6 - first-cycle programmes (EQF-6)

Branch of science: Engineering and technology

Language: English

Number of hours per semester: 30

Course coordinator/ Department and e-mail: dr inż. Joanna A. Pawłowicz, Institute of Building Engineering, jopaw@uwm.edu.pl

Type of classes: classes

Substantive content

CLASSES: Familiarization with basic definitions and issues in the field of BIM technology in construction. During the classes, students learn the basic principles of using IFC files and BIM programs and the possibility of using them in the work of designers and engineers on construction sites. Learns how to use the BIM model in investment planning, building life cycle and investment management. They know how to use data obtained from a laser scanner and a drone in the work of an engineer.

LECTURES: No

LEARNING PURPOSE: Familiarization with laser scanning technology and BIM, the use of point clouds in the creation of building objects using BIM technology, principles of preparing studies in BIM software and inter-industry cooperation, working with IFC exchange files.

On completion of the study programme the graduate will gain:

Knowledge: General knowledge of laser scanning, BIM.

Skills: Students acquire basic skills in using the BIM model and laser scanning engineer's work

Social Competencies: The student is prepared to perform the tasks assigned to him in the use of computer programs in BIM technology. The student is able to use the BIM model in the work of an engineer and cooperate on multi-discipline projects and take part in discussions, present their own and evaluate other opinions and positions in the field of construction

Basic literature:

1. Kasznia Dariusz, Magiera Jacek, Wierzowiecki Paweł, BIM in practice. Standards. Implementation. Case Study, Ed. PWN Scientific Publishing House, Year 2020
2. Tomana Andrzej, BIM – Innovative technology in construction, Ed. Builder, R. 2016
3. Anger Anna, Łaguna Paweł, Zamara Bartosz, BIM for managers, Ed. PWN, R. 2021
4. Salamak Marek, BIM in the life cycle of bridges, Ed. PWN, R. 2021
5. Kacprzyk Zbigniew, Design in the BIM process, Ed. Annexe Warsaw University of Technology Publishing House, Vol. 2022

Supplementary literature:

1. Robot Millennium, Podręcznik użytkownika, Wyd. Autodesk, R. 2017
2. Sokół Krzysztof, CATIA. Wykorzystanie metody elementów skończonych w obliczeniach inżynierskich, Wyd. Helion, R. 2019



The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 30

Student's independent work: 25