COURSE DESCRIPTION CARD - SYLLABUS

Course name
BIM [S2ZE1E>BIM]

Course

Field of study
Green Energy

Year/Semester
2/3

Area of study (specialization)
–

Profile of study
general academic

Level of study
second-cycle

Course offered in
english

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
0

Laboratory classes
0

Other (e.g. online)
0

Tutorials
0

Projects/seminars
30

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

Basic knowledge of technical drawing, circuit theory and physics. Student is able to use the basic functions of CAD software. The student is familiar with the latest development trends in technology. Student has the ability to effectively self-educate and feels the need to expand his knowledge in the field related to the subject. Student is aware of the need to cooperate with representatives of other industries. Student is able to search and use the information contained in the literature, technical documentation and catalogs in printed and electronic versions. Student is able to integrate the obtained information, critically evaluate its value, correctly interpret, draw conclusions, formulate and justify opinions.

Course objective

Acquainting with modern software enabling modeling of information about the building and its installations. Understanding the flow of design information in the Building Information Modeling (BIM) environment. Learning to use selected functions of the BIM software. Mastering the software to a degree that allows free use and the exchange of design information with representatives of other industries.

Course-related learning outcomes

Knowledge:

Student has an extended knowledge of modeling design information about a building, its installations and the flow of design information. Student has in-depth knowledge of the basic functions of CAD and BIM software.

Skills:
Student is able to make a design and a spatial model of building installations in accordance with the assigned guidelines. Student is able to optimize the design solution based on the tools available in the BIM system. Student can design and select equipment for various building installations in terms of their effective use.

Social competences:
Student recognizes the importance of CAD and BIM software in design. Student is aware of the continuous development of software and feels the need for continuous self-education. Student notices the need to share project information with representatives of other industries. Student has the competences expected from a designer of building equipment.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Laboratory classes:
- current check and rewarding knowledge necessary for the accomplishment of the problems in the area of laboratory tasks,
- the preparation of materials for the project is evaluated,
- rewarding activities related to the implementation of laboratoy classes,
- substantive preparation for the implementation of the assigned project is evaluationed,
- implementation of the design task in the BIM system

Programme content

Laboratory classes:
Introduction to the work environment, displaying a drawing, coordinates and basic drawing tools, creating two-dimensional geometry, modifying two-dimensional geometry, managing object features, construction techniques, test objects and their styles, introduction to dimensioning, hatching: types and types of hatching, introduction to printing, model view, starting a new project, modeling electrical installations, cooperation with representatives of other industries, detecting collisions with other installations, drawing and creating details, descriptions and lists, drawing tables, sheets, using projects in CAD software, preparing data for export, linking DWG details to BIM.
Classes discussing the regulations of the laboratory, topics of laboratory classes and OHS training related to the operation of laboratory positions. To perform 6 two-hour laboratory classes in the field of lecture.

Teaching methods

Laboratory classes:
- object-orientedpresentations supported by illustrated examples presented on the board,
- conducting classes in a computer room with the use od software to calculations and design,
- initiating teamwork.

Bibliography

Basic:
1. Autodesk Revit 2018 Mep Fundamentals, Ascent -. Center for Technical Knowledge, 2017 r.
2. Kasznia D. BIM w praktyce. Standardy. Wdrożenia. Case Study, Wydawnictwo Naukowe PWN, Warszawa, 2017 r.

Additional:
1. Michel K.; Sapiński T. Rysunek techniczny elektryczny, Wydawnictwa Nauk. - Tech, Warszawa, 1987 r.
2. Międzynarodowy słownik terminologiczny elektryki - Część 151: Urządzenia elektryczne i megnetyczne PN-IEC 60050-151, Polski Komitet Normalizacyjny, Warszawa, 2003 r.
3. Eastman C.; Teicholz, P. Sacks, R.; Liston, K. BIM Handbook. A guide to building information modeling for owners, managers, designers, engineer, and contractors, John Wiley and Sons, Inc., 2008 r.
4. Normy przedmiotowe.

5. Publikacje internetowe.

Breakdown of average student's workload

	Hours	ECTS
Total workload	55	2,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	25	1,00