COURSE DESCRIPTION CARD - SYLLABUS

Course name
Modeling of building installations in BIM technology [S2Elenerg1-UEE>MIB2]

Course

Field of study
Electrical Power Engineering

Year/Semester
1/2

Area of study (specialization)
Electric Energy Exploitation

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes
0

Other (e.g. online)
0

Tutorials
0

Projects/seminars
0

Number of credit points

1,00

Coordinators

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Lecturers

Prerequisites

Student has basic knowledge of technical drawing, circuit theory and physics. Student is able to use the basic functions of CAD software. 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.

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.

Course-related learning outcomes

Knowledge:
student has an extensive 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.

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 sees the need to share project information with representatives of other industries.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

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Lecture:
- knowledge acquired as part of the lecture is verified by a written final test consisting of open or test questions with different points. Passing threshold: 50% of points,
- current grading in each lecture (rewarding activities).

Programme content

Lecture:
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, Revit MEP basics, model view, starting a new project, modeling electrical installations, exchanging information with representatives of other industries, detecting and repairing collisions, drawing and creating details, descriptions and lists, drawing tables, sheets.

Course topics

Subject 1: Introductory classes. Familiarization with the program
Subject 2: Project settings, creating a building shape
Subject 3: Creating a building shape part 2
Subject 4: MEP interface, electrical settings, modeling electrical installations
Subject 5: MEP interface, electrical settings, start modeling electrical installations part 2
Subject 6: Connecting the project, electrical settings, beginning to define circuits
Subject 7: Electrical circuits part 2
Subject 8: Electrical circuits part 3
Subject 9: Smart home project with Fibaro families
Subject 10: Projekt inteligentnego domu z rodzinami Fibaro cz. 2
Subject 11: Printing, basics of creating families
Subject 12: Summary of classes

Teaching methods

Lecture:
- multimedia or object-oriented presentations supported by illustrated examples presented on the board,
- interactive lecture with questions and initiating discussions.

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	29	1,00
Classes requiring direct contact with the teacher	15	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	14	0,50