

Graphic record of the construction - course description

General information	
Course name	Graphic record of the construction
Course ID	06.0-WE-ELEKTP-GroftheC-Er
Faculty	Faculty of Computer Science, Electrical Engineering and Automatics
Field of study	Electrical Engineering
Education profile	academic
Level of studies	First-cycle Erasmus programme
Beginning semester	winter term 2021/2022

Course information	
Semester	1
ECTS credits to win	3
Course type	obligatory
Teaching language	english
Author of syllabus	<ul style="list-style-type: none">dr inż. Sławomir Piontek

Classes forms					
The class form	Hours per semester (full-time)	Hours per week (full-time)	Hours per semester (part-time)	Hours per week (part-time)	Form of assignment
Lecture	15	1	-	-	Credit with grade
Laboratory	15	1	-	-	Credit with grade

Aim of the course

- introduce students to the basics of the graphic design of electrical and electronic systems
- student understanding of the need to use computer-aided design software - CAD
- formation of basic skills in the use of CAD software to create projects, electrical and electronic circuits

Prerequisites

none

Scope

Basics of graphical representation of construction. Parallel and orthogonal projection. Principles of orthogonal projection. Simple and complex cross sections. Drawing simplification. Basics of dimensioning elements in technical drawing.

Numerical tools relevant in the technical drawing. Systems for computer-aided design - CAD, the basis for record structures in CAD programs that support the design of electrical and electronic circuits.

Construction of electronic circuits. Technical drawing of electronic circuits, elements and symbols, schematic diagrams. Schema editor. Description of elements properties in CAD program. Create symbol libraries of electronic components. Generating a netlist. Checking and correcting connections. Basics PCB design for a given number of layers. Setting up libraries and defining electronic components.

Electrical installations in buildings. Technical drawing of electrical installations in CAD software. Projections of buildings. Elements and symbols in electrical installations. Wiring diagram of electrical installations, alarm, TV. Technical drawing of electrical control and automation systems.

Teaching methods

Lecture: conventional lecture

Laboratory: laboratory classes

Learning outcomes and methods of theirs verification

Outcome description	Outcome symbols	Methods of verification	The class form
He is able to use utility software to prepare graphical representations of electrical and electronic circuits		<ul style="list-style-type: none">an ongoing monitoring during classescarrying out laboratory reports	<ul style="list-style-type: none">Laboratory
He can choose the appropriate CAD software for his task and apply it to design documentation		<ul style="list-style-type: none">a quizan ongoing monitoring during classes	<ul style="list-style-type: none">Laboratory
He knows the basic principles of graphic design of electrical circuits		<ul style="list-style-type: none">an evaluation test	<ul style="list-style-type: none">Lecture

Outcome description	Outcome symbols	Methods of verification	The class form
Understand the need to use CAD software to create design electrical and electronic circuits		<ul style="list-style-type: none"> • an evaluation test • carrying out laboratory reports 	<ul style="list-style-type: none"> • Lecture • Laboratory

Assignment conditions

Lecture - a condition of credit is to obtain a positive grade from written or oral tests conducted at least once in a semester.

Laboratory - a condition of credit is to obtain positive grades from all laboratory exercises expected to be performed within the laboratory program.

Recommended reading

Michel K., Sapiński T.: Rysunek techniczny elektryczny, Wydawnictwa Naukowo-Techniczne, Warszawa, 1987

Wawer M.: Grafika inżynierska: Podstawy komputerowego zapisu konstrukcji w systemie MegaCAD, SGGW, Warszawa, 2001.

Mazur J.W., Kosiński K., Polakowski K.: Grafika inżynierska z wykorzystaniem metod CAD, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa, 2004.

Further reading

Markiewicz H.: Instalacje elektryczne, WNT, Warszawa, 2012

Notes

Modified by dr hab. inż. Paweł Szcześniak, prof. UZ (last modification: 08-07-2021 21:49)

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