

Electronics - course description

General information	
Course name	Electronics
Course ID	06.5-WE-ELEKTP-Electronics-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 2022/2023

Course information	
Semester	3
ECTS credits to win	6
Course type	obligatory
Teaching language	english
Author of syllabus	dr inż. Piotr Mróz

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	30	2	-	-	Exam
Laboratory	30	2	-	-	Credit with grade

Aim of the course

Student can maintain movement of the electronic circuits for automation and measurement.

Prerequisites

Principles of electronic. Principles of metrology.

Scope

Electronic elements. Voltage and current in electronic circuits. Rules related to voltage and current. Resistors, capacitors, induction elements, diodes, optoelectronic elements, transistors - allowed and characteristic parameters.

Usage of electronic elements. Voltage dividers and filters. Usage of optoelectronic elements to signalise states of devices and galvanic separation of signals.

Transistor amplifier to control executing elements.

Operational amplifiers. Basic operational amplifiers and their usage. Parameters of operational amplifiers. Basic circuits with operational amplifiers. Usage of operational amplifiers in automation and measurement.

Teaching methods

Lecture: work with source documents, discussion, problem lecture.

Laboratory: work with source document, discussion, simulation, practical work, laboratory exercises.

Learning outcomes and methods of their verification

Outcome description	Outcome symbols	Methods of verification	The class form
Student is conscious that electronic circuits built from modern integrated circuits are better than those built from discrete elements.		an exam - oral, descriptive, test and other	Lecture
Student understands and analyses the work of simple electronic circuits.		an exam - oral, descriptive, test and other	Lecture
Student can choose electronic elements and integrated circuits to make electronic circuits.		an exam - oral, descriptive, test and other	Lecture
Student can create the simplest electronic circuits.		an ongoing monitoring during classes	Laboratory
Student can use electronic elements and integrated circuits to make electronic circuits.		an ongoing monitoring during classes	Laboratory

Assignment conditions

Lecture: the condition to pass is getting a positive mark from the exam. The exam might be oral or paper form.

Laboratory: the condition to pass is getting a positive mark from all of the laboratory exercises.

Final mark = 50% lecture + 50% laboratory

Recommended reading

1. Horowitz P., Hill W.: Sztuka elektroniki, Wyd. Komunikacji i Łączności, Wydanie 7, Warszawa, 2003.

Further reading

1. Chwaleba A., Moeschke B., Płoszajski G., Majdak P., Świstak P., Podstawy elektroniki, PWN, Warszawa, 2021.
2. Datasheets of components and electronic circuits, manufacturers websites.

Notes

Modified by dr inż. Piotr Mróz (last modification: 15-04-2022 20:04)

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