COURSE DESCRIPTION CARD - SYLLABUS

Course name

Electronic circuits in practice

Course

Field of study

Electrical Engineering

Year/Semester

4 / 7

Area of study (specialization)

Electronics, measurements and lighting technology

Profile of study

general academic

Level of study

First-cycle studies

Course offered in

polish

Form of study

full-time

Requirements

elective

Number of hours

Lecture

30

Laboratory classes

30

Other (e.g. online)

Tutorials

Projects/seminars

Number of credit points

5

Lecturers

Responsible for the course/lecturer:

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Responsible for the course/lecturer:

Prerequisites

Basic knowledge of electrical engineering and electronics. Basic knowledge of electronic analog circuits. Ability to effectively self-study in the field related to the design and construction of electronic circuits. Awarness of the need to expand their competences and is ready to cooperate as part of a team.

Course objective

Presentation of the basics of designing, manufacturing, commissioning and testing of electronic circuits as well as the selection of passive and active electronic components.

Course-related learning outcomes

Knowledge

1. Ordered knowledge in the field of construction and principles of operation of electronic, optoelectronic and simple analog components and devices.

2. Knowledge typical engineering technologies in the field of Electrical Engineering.

Skills

1. Ability to design a simple electrical circuit designed for various applications.

2. Ability to use literature sources available in printed and electronic versions.

3. Ability to properly use electrical equipment in accordance with general requirements and technical documentation.

Social competences

1. Understanding the need and knows the possibilities of lifelong learning (second and third cycle and post-graduate studies).

2. Ability to think and act in an entrepreneurial manner in the field of electrical engineering.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lectures

Evaluation of the knowledge with a written exam related to the content of lectures (test, computational and problem questions). Passing threshold of test equals 50%.

The grade from laboratory as well as attendance and activities during the lectures are taken into account.

Laboratory

Assessment of knowledge necessary to implement the problems posed in the area of laboratory tasks. Assessment of skills related to the design, implementation, diagnostics and testing of completed electronic systems. Evaluation of reports on exercises performed. Assessment of knowledge demonstrated on the written test in the scope of laboratory content (test questions and calculating tasks).

Programme content

Lectures

Passive and active elements used in the construction of electronic circuits: basic parameters and selection. Electronic circuits power supply. Galvanic separation. Data transmission. Mechanical components of electronic systems: housings, cooling, shielding. Diagnostics and testing of electronic circuits.

Laboratory

Knowledge of the principle of safety during laboratory classes. Design and implementation of a simple electronic circuit. Diagnostics and testing of the completed electronic circuit. Preparation of documentation for the completed circuit.

Teaching methods

Lecture

Lectures are performed using multimedia presentations illustrated with simulation examples and necessary mathematical calculations on the blackboard. Theoretical questions are presented in the exact reference to the practice.

Laboratory

Group project development and INDIVIDUAL making simple electronic circuits. Assembly (soldering) of components on printed circuit boards. Individual use of laboratory equipment during diagnostics and testing of manufactured electronic circuits. Acquiring measurement results for as-built documentation.

Bibliography

Basic

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Breakdown of average student's workload

	Hours	ECTS
Total workload	125	5,0
Classes requiring direct contact with the teacher	80	3,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) [1]	75	3,0

[1] delete or add other activities as appropriate