COURSE DESCRIPTION CARD - SYLLABUS

Course name
Introduction to Electronics [S1MiKC1E>WdE]

Course

Field of study
Microelectronics and Digital Communication

Year/Semester
1/1

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
English

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
24

Laboratory classes
30

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

3,00

Coordinators

dr inż. Krzysztof Klimaszewski
krzysztof.klimaszewski@put.poznan.pl

Lecturers

mgr inż. Sławomir Różek
slawomir.rozek@put.poznan.pl

dr inż. Krzysztof Klimaszewski
krzysztof.klimaszewski@put.poznan.pl

Prerequisites

Knowledge of physics concerning electric circuits: concepts of electric current and voltage, resistance, electric circuit. Fluent use of mathematical tools - conducting calculations, solving systems of equations. Readiness and ability to acquire knowledge from various sources, ability to independently find and use information.

Course objective

The aim of the course is to provide basic knowledge and acquire skills related to basic activities related to the construction and operation of electronic devices.

Course-related learning outcomes

Knowledge:
Knows the properties and characteristics of electronic components and basic methods of assembly, start-up and analysis of simple electronic systems

Knows the purpose and principles of using modern measuring equipment

Skills:
Is able to obtain and analyze information from literature, databases and other sources in Polish and English. Is able to integrate and interpret obtained information, draw conclusions and justify opinions.
Is able to effectively organize individual and team work
Is able to assemble a simple electronic system and perform basic measurements when starting it up.

Social competences:
Knows the limitations of his/her own knowledge and skills, understands the need for further education.
Is aware of the need for a professional approach to solving technical problems and taking responsibility for the technical solutions he/she proposes.
Understands the responsibility resting on engineers working in the ICT area.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written assessment consisting of questions and tasks related to the content presented in the lecture. Passing threshold: 50% of points. The final assessment may include activity during classes, such as solving additional tasks.
Passing laboratory exercises based on an assessment of the obtained results of work and an assessment of involvement in the course of classes.

Programme content

The course discusses methods of assembling electronic systems and some elements used to build electronic systems. Issues related to basic measurements in electronic systems are also introduced.

Course topics

Lecture:
Electronic systems, soldering, welding, mechanical connections.
Connections in electronics: printed circuit boards, cables and wires.
Properties of electronic components.
Housings of electronic components.
Laboratories:
Soldering and desoldering electronic systems - methods depending on the specifics of the component.
Setting up electronic systems - basic measurements and methods, setting up system blocks.
Electronic cables and connectors.

Teaching methods

Lecture:
multimedia presentation, illustrated with examples provided on a projector, conversational lecture
Laboratory exercises:
multimedia presentation and individual and group performance of tasks - practical exercises.

Bibliography

Basic:
„Podstawy technologii montażu dla elektroników”, Ryszard Kisiel, BTC 2012

Additional:
„Sztuka elektroniki” P. Horowitz, W. Hill, WKiŁ 2015

Breakdown of average student's workload

	Hours	ECTS
Total workload	84	3,00
Classes requiring direct contact with the teacher	54	2,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	30	1,00