POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

pl. M. Skłodowskiej-Curie 5, 60-965 Poznań

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Electrical and electronic systems in industry and vehicles

Course

Field of study	Year/Semester
Electrical Engineering	2/3
Area of study (specialization)	Profile of study
Electrical and IT systems in industry and vehicles	general academic
Level of study	Course offered in
Second-cycle studies	polish
Form of study	Requirements
full-time	compulsory

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
15		
Tutorials	Projects/seminars	

Number of credit points

1

Lecturers

Responsible for the course/lecturer:

dr inż. Jerzy Frąckowiak

jerzy.frackowiak@put.poznan.pl

tel. 616652693

Wydział Automatyki, Robotyki i Elektrotechniki

ul. Piotrowo 3A, 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites

Has in-depth knowledge of the construction and design of electrical systems, in particular measuring and control systems, knows the basic information about PLC controllers and microcontrollers.

Course objective

Cooperation of PLC controllers with microcontrollers, selected interruptions of the PLC and microcontroller comparison of programs written in LAD and C languages.

Course-related learning outcomes

Knowledge
Cooperation of PLC controllers with microcontrollers, selected interruptions of the PLC and microcontroller.

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Skills

Using the acquired knowledge needed for cooperation between PLCs and microcontrollers, the ability to think independently and be creative.

Social competences

Willingness to work in a team and taking responsibility for jointly performed tasks.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Final test 90: minutes.

Programme content

PLC programmable controllers - serial transmission port, free port transmission, selected interruptions of the PLC and microcontroller.

Comparison of the control program written in the LAD language for the PLC controller and in the C language for the microcontroller.

Selection of sensors and measuring transducers.

Selection of digital PID controller settings.

Teaching methods

Multimedia lecture illustrated with examples on a blackboard.

Bibliography

Basic

Kamiński K.: Programowanie w Step 7 Microwin, GRYF, Warszawa 2006.

Dokumentacja sterownika S7-1200 firmy Siemens.

Dokumentacja mikrokontrolera rodziny PIC 18.

Additional

Bubnicki Z.: Teoria i algorytmy sterowania, Wydawnictwo Naukowe PWN, Warszawa 2002.

Breakdown of average student's workload

	Hours	ECTS
Total workload	27	1,0
Classes requiring direct contact with the teacher	17	0,5
Student's own work (literature studies, preparation for the final test) [1]	10	0,5

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[1] delete or add other activities as appropriate