



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Electrical and electronic systems in industry and vehicles

Course

Field of study

Electrical Engineering

Area of study (specialization)

Electrical and Computer Systems in Industry and Vehicles

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

2/3

Profile of study

general academic

Course offered in

polish

Requirements

compulsory

Number of hours

Lecture

15

Laboratory classes

Tutorials

Projects/seminars

Other (e.g. online)

Number of credit points

1

Lecturers

Responsible for the course/lecturer:

dr inż. Jerzy Frackowiak

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



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	25	1,0
Classes requiring direct contact with the teacher	15	
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	10	

¹ delete or add other activities as appropriate