

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Control Engineering and computing science in industry and</b>		Code <b>1010325341010324814</b>
Field of study <b>Electrical Engineering</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>2 / 4</b>
Elective path/specialty <b>Electrical and Computer Systems in</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>Second-cycle studies</b>	Form of study (full-time, part-time) <b>part-time</b>	
No. of hours Lecture: <b>9</b> Classes: <b>-</b> Laboratory: <b>-</b> Project/seminars: <b>-</b>		No. of credits <b>1</b>
Status of the course in the study program (Basic, major, other) <b>(brak)</b>		(university-wide, from another field) <b>(brak)</b>
Education areas and fields of science and art <b>technical sciences</b> <b>Technical sciences</b>		ECTS distribution (number and %) <b>1 100%</b> <b>1 100%</b>
<b>Responsible for subject / lecturer:</b>  Dr inż. Jerzy Frąckowiak email: jerzy.frackowiak@put.poznan.pl tel. 616652382 Elektryczny ul. Piotrowo 3A, 60-965 Poznań		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	Basic knowledge of automation, control theory, PLCs and microcontrollers.
2	<b>Skills</b>	The ability to understand and interpret the messages conveyed and effective self.
3	<b>Social competencies</b>	Awareness of the need to broaden their competence.
<b>Assumptions and objectives of the course:</b> Knowledge of PLC cooperation with microcontrollers.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. knowledge of PLC cooperation with microcontrollers - [K_W08++]		
2. selected interrupt PLC and microcontroller - [K_W08++]		
<b>Skills:</b>		
1. use the acquired knowledge to work PLCs and microcontrollers - [K_U15++]		
2. capacity for independent thinking and creative action - [K_U15++]		
<b>Social competencies:</b>		
<b>Assessment methods of study outcomes</b>		
Lecture: - final test.		
<b>Course description</b>		
PLCs - serial port, free port transmission mode, the selected interrupt PLC and microcontroller.		

<b>Basic bibliography:</b>		
1. Kamiński K.: &#38;#34;Programowanie w Step 7 Microwin&#38;#34;, GRYF, Warszawa 2006.		
2. Dokumentacja sterownika S7-1200 firmy Siemens.		
<b>Additional bibliography:</b>		
1. Bubnicki Z.: &#38;#34;Teoria i algorytmy sterowania&#38;#34;, Wydawnictwo Naukowe PWN, Warszawa 2002.		
<b>Result of average student's workload</b>		
<b>Activity</b>	<b>Time (working hours)</b>	
1. participation in lectures	8	
2. consultations for lectures	6	
3. preparation for the completion of lectures	10	
4. credit lecture	1	
<b>Student's workload</b>		
<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	25	1
Contact hours	15	1
Practical activities	0	0