

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Fieldbusses and Supervisory Control (SCADA) systems		Code 1010332131010335635
Field of study Control Engineering and Robotics	Profile of study (general academic, practical) (brak)	Year /Semester 2 / 3
Elective path/specialty Computer Control Systems	Subject offered in: polish	Course (compulsory, elective) obligatory
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 2 Classes: - Laboratory: 2 Project/seminars: -		No. of credits 5
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences		ECTS distribution (number and %) 5 100%
Responsible for subject / lecturer: dr inż. Stefan Brock email: Stefan.Brock@put.poznan.pl tel. 48 61 665 2627 Wydział Elektryczny ul. Piotrowo 3A 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	K_W02: K_W04:
2	Skills	K_U01: K_U05: K_U07:
3	Social competencies	K_K01:
Assumptions and objectives of the course: The aim of the course is to expand and deepen the knowledge of local networks and distributed control systems. Student at the end of training should be familiar with the principles of visualization and supervisory control. Students can also evaluate the correctness of the selection of a distributed control system components. He should also be able to design a visualization module as an example of the selected SCADA package.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. K_W18 - [K_W18] 2. K_W21 - [K_W21] 3. K_W13 - [K_W13]		
Skills:		
1. K_U13 - [K_U13] 2. K_U18 - [K_U18] 3. K_U17 - [K_U17]		
Social competencies:		
1. K_K02 - [K_K02]		
Assessment methods of study outcomes		
Lecture: Assessment of the lecture is written exam of based on design case solution. Laboratory: Assessment of laboratory requires doing indicated exercises and giving reports		

Course description		
<p>Features, functions and tasks performed by the supervisory control systems and systems for data collection, archiving, presentation and analysis. The combination of PLC SCADA system - standards DDE, OLE, OPC. Multi-level control systems. Designing the user interface for these systems (HMI). Examples of commercial SCADA-HMI packages, advantages and disadvantages of the solutions. Examples of software tools to design multi-level process control and process data. Reporting and alerting systems. The mechanism of recipes. Architecture and database properties for industrial applications. Distributed Databases. Analysis of the local network in the schema layer ISO-OSI model. DCS System Structure: Object equipment, wiring, actuators, process stations, operator stations and engineering server.</p>		
<p>Basic bibliography:</p> <p>1. Due to the lack of widely available literature, lecture material, published on the Internet and web sites various are the basis material.</p> <p>2. Zimmermann W., Schmidgall R.:Magistrale danych w pojazdach. Protokoły i standardy, Wydawnictwa Komunikacji i Łączności 2008</p>		
<p>Additional bibliography:</p> <p>1. Technical documentation by Wonderware, Honeywell, Siemens</p>		
Result of average student's workload		
Activity	Time (working hours)	
1. Lectures	30	
2. Laboratory exercises.	30	
3. Consultations and examination	5	
4. Preparation to laboratory exercises and elaboration of reports.	40	
5. Preparation to tests and examination.	20	
Student's workload		
Source of workload	hours	ECTS
Total workload	125	5
Contact hours	65	2
Practical activities	60	2