DESCRIPTION OF THE COURSES

- Course code: ELR3311
- Course title: Microprocessor technique in measurement systems
- Language of the lecturer: polish

Course form	Lecture	Classes	Laboratory	Project	Seminar
Number of hours/week*	1		1		
Number of hours/semester*					
Form of the course completion					
ECTS credits					
Total Student's Workload					

- Level of the course (~~basic~~/advanced):
- Prerequisites: Fundaments of electronic, electrical measurement
- Name, first name and degree of the lecturer/supervisor: Krzysztof PODLEJSKI, PhD
- Names, first names and degrees of the team's members: Grzegorz Kosobudzki PhD
- Year:................ Semester:.III , 2stage
- Type of the course (~~obligatory~~/optional):
- Aims of the course (effects of the course):
- Form of the teaching (traditional/~~e-learning~~):
- Course description: Cognition modern industrial measurement systems. Structures and organization standards: I2C, Microwire,HART, current loop and so one will be presentation. During two-hour laboratory classes students execute programming of data acquisition board, realizing of example manufacturing process, application graphical environment in design measurement systems..
- Lecture:

Particular lectures contents	Number of hours
1.Structure of dedicated microcontroller	2
2. Standardization at the digital interface using smart sensors	2
3. Standard I2C	2
4. Standard CAN	2
5. Standard LonWorks	2
6. StandardIEEE1451	2
7. Inter network communication	2

- Classes – the contents:
- Seminars – the contents:
- Laboratory – the contents: Creating typical Measurement application in GPL, Measuring voltage and current, Transducer, Measuring temperature, Signal conditioning, Integration of measurement systems.
- Project – the contents:
- Basic literature:

1. Świsulski D.: Komputerowa Technika Pomiarowa – Agenda wydawnicza PAK, Warszawa 2005
2. Bogusz Jacek.: Lokalne interfejsy szeregowe w systemach cyfrowych – Wydawnictwo BTC, Warszawa 2004.
3. Lesiak P., Świsulski D.: Komputerowa Technika Pomiarowa w Przykładach – Agenda wydawnicza PAK, Warszawa 2002.
4. Baranowski R. Mikrokontrolery AVR Atmega w praktyce cyfrowych – Wydawnictwo BTC, Warszawa 2005.
5. Świsulski D.: Laboratorium z Systemów Pomiarowych – Wydawnictwo Politechniki Gdańskiej, 1998
6. Winiecki W., Nowak J., Stanik S.: Graficzne zintegrowane środowiska programowania do projektowania komputerowych systemów pomiarowo-kontrolnych. Wyd. Mikom, Warszawa 2001
7. Mielczarek W. Szeregowe interfejsy cyfrowe, Helion, Gliwice
8. Lesiak P.T. Inteligentna technika pomiarowa, Politechnika Radomska, 2001
- Additional literature:
1. Sacha K. Sieci miejscowe PROFIBUS, MIKOM, Warszawa, 1998.
2. 2. Mielczarek W. Urządzenia pomiarowe i systemy kompatybilne ze standardem SCPI, wyd Helion, Gliwice 1999.
3. http://www.elektronet.gower.pl
4. http://www.modbus.ida.org
http://www.profibus.com
- Conditions of the course acceptance/credition:

* - depending on a system of studies