Title	Code
Microprocessor control systems and measurments	**1010332131010330820**
Field: **Control Engineering and Robotics**	Year / Semester: **2 / 3**
Specialty: **-**	Course: **core**
Hours: Lectures: **3** Classes: **-** Laboratory: **2** Projects / seminars: **-**	Number of credits: **7**
	Language: **polish**

Lecturer:

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Status of the course in the study program:

-Obligatory course at Automation Speciality on Automatics and Control Computers Systems at Electrical Faculty

Assumptions and objectives of the course:

-The student should obtain knowledge about current microprocessors systems to applying in power electronics, especially in control systems and measuring.

Contents of the course (course description):

-The architecture microcontrols and digital processors signal in embedded systems of control and dates acquisition. The advanced methods of programming of microprocessors ? arrays and pointers, interrupts and boost thread, the programming non-standard languages. Co-operation of microprocessor with other systems. The data transmission in control systems - the implementation of line standards (the CAN, RS -232/485, USB) and wireless (IrDA, Bluetooth). The method of measurement of chosen physical sizes - voltage and current, velocity and displacement, strength and moment of force, temperature and different anelectric sizes. The realization in microprocessor systems of chosen problems: filters and controllers, transformation of co-ordinates, interface of operators. The co-operation microprocessors and embedded systems, implementation and applying the processor to programmable systems. The analysis of chosen practical realizations - the recorders, control systems of process industrial , control DC and AC motors.

Introductory courses and the required pre-knowledge:

-Basic knowledge of theory control and signals, power electronics, microprocessor systems, automation of electro-mechanical systems.

Courses form and teaching methods:

-Lectures supported by laboratory exercises.

Form and terms of complete the course - requirements and assessment methods:

-Lecture: exam; laboratory exercises: reports.

Basic Bibliography:

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Additional Bibliography:

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