Title	Code
(Podstawy automatyki)	**1010401151010240745**
Field: **EDUCATION IN TECHNOLOGY AND INFORMATICS**	Year / Semester: **3 / 5**
Specialty: **-**	Course: **core**
Hours: Lectures: **1** Classes: **-** Laboratory: **1** Projects / seminars: **-**	Number of credits: **2**
	Language: **polish**

Lecturer:

dr Ryszard Musielak
Instytut Technologii Mechanicznej
tel. +48 61 665 22 55, 20 62, fax. +48 61 665 22 00
e-mail: ryszard.musielaki@put.poznan.pl

Faculty:

Faculty of Technical Physics
ul. Nieszawska 13A
60-965 Poznań
tel. (061) 665-3160, fax. (061) 665-3201
e-mail: office_dtpf@put.poznan.pl

Status of the course in the study program:

Core course of the study for Education in Technology and Informatics, Faculty of Technical Physics.

Assumptions and objectives of the course:

Students should obtain knowledge of theoretical and practical rules of discrete and continuous control systems and good skill of analysis and synthesis of these systems. They should recognise the basic elements of automatic control system as well as the modern computer method of simulation and designing.

Contents of the course (course description):

Control development, main definitions (mechanization, automation, automatics, signal, block diagram, feedback). Mathematical models of linear and non-linear systems. Equations, transfer functions and characteristics of linear systems. Block diagrams creating and transformation. The quality feature of control systems (stability, steady ? state error, integral criterions). Linear and non-linear controllers. PID controllers. Classification and characteristics of non-linear systems. Linearisation. On-off controllers. Implementation of the MATLAB-SIMULINK software to the automatic control systems.l systems.

Sswitching control systems, definition and classification, Boolean algebra, logistic gates, Boolean function, minimisation methods (Karnaugh method of minimisation), the logistic diagrams, memories, basic control elements and systems.

Introductory courses and the required pre-knowledge:

The basic knowledge in high mathematics, physics, mechanics, electric and electronic engineering.

Courses form and teaching methods:

Lectures supported by transparencies and computers software (e.g. MATLAB-SIMULINK), auditory and laboratory exercises.

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

Test and oral exam.

Basic Bibliography:

-

Additional Bibliography:

-