Course Title:	**Control Engineering**
Institute/Division:	Department of Infotronics and Cybersecurity Faculty of Electrical and Computer Engineering
Course code:	**E–CE**
Erasmus subject code:	0610 Information and Communication Technologies (ICTs)
Number of contact hours:	45
Course duration:	1 semester (Spring/Summer)
ECTS credits:	6
Course description:	This course will introduce the student to the fundamentals of automation and control methods. Types of dynamic systems, two-position control, PID algorithms and their structures, and selection of tuning settings will be discussed. The use of Matlab toolbox identification for parametric and non-parametric identification will be discussed. Sensors and actuators used in industry will be discussed. An introduction to PLCs and their use in controlling automation systems will be discussed in detail. The course will conclude with learning how to use shallow and deep artificial neural networks in control engineering.
Course type:	Lectures (20h), Laboratory (20h), Project (10h)
Literature:	Ajit K. Mandal, *Introduction to Control Engineering-Modeling*, Analysis and Design, NEW ACADEMIC SCIENCE Béla G. Lipták, *Instrument Engineers' Handbook*, Vol. 2: Process Control and Optimization, Taylor & Francis
Assessment method:	Laboratory exercises, project and tests
Prerequisites:	Elementary knowledge of the fundamentals of automation Matlab/Simulink
Contact Person:	Prof. Robert Sałat, robert.salat@pk.edu.pl