Faculty of Technical Sciences

Course title: Electrohydraulic and electropneumatic

ECTS credit allocation (and other scores): 3

Semester: autumn

Level of study: ISCED-6 - first-cycle programmes (EQF-6)

Branch of science: Engineering and technology

Language: English

Number of hours per semester: 45

Course coordinator/ Department and e-mail: Piotr Drogosz, Department of Mechatronics, piotr.drogosz@uwm.edu.pl

Type of classes: classes and lectures

Substantive content

CLASSES: starting up of electro switches to control of electro-actuators, starting up of pneumatic and electro-pneumatic valves to control of pneumo-actuators, starting up of hydraulic and electrohydraulic valves to control of hydraulic-actuators

LECTURES: Basic properties of pneumatic and hydraulic systems, introduction to pneumatic and hydraulic power supplies, introduction to control of fluid systems, usage of typical valves in typical fluid systems

Learning purpose: Prepare students to design, implement and service modern power and control systems of machines.

On completion of the study programme the graduate will gain:

Knowledge: Knowledge about technical application of fluid power and control systems

Skills: Ability to design, implement and service modern fluid power and control systems

Social Competencies: Ability to work in a team, awareness of responsibility for the usage of modern power and control systems

Basic literature: Parr Andrew, Hydraulics and Pneumatics a technician's and engineer's guide, Elsevier Ltd. 2006, ISBN 978-0-7506-4419-9. Haring W, Metzger M, Weber R C, Festo Pneumtics Basic Level, Festo Didactic & Co Denkendorf/Germany 2013. Merkle D, Schrader B, Thomes M, Festo Hydraulics Basic Level, Festo Didactic & Co Denkendorf/Germany 2003,

Supplementary literature: Jelali Mohieddine, Kroll Andreas, Hydro Servo-systems, Springer-Verlag London Limited 2003, ISBN 978-1-4471-1123-8. Hydraulics Trainer Volume 1 – Basic Principles and

Components, Bosch Rexroth/Germany. Hydraulics Trainer Volume 3 Planning and Design of Hydraulic Power Systems, Bosch Rexroth/Germany.

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 46

Student's independent work: 29