



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Electrohydraulics and electropneumatics

Course

Field of study

Year/Semester

Mechanical engineering

4/8

Area of study (specialization)

Profile of study

Design of Machines and Devices

practical

Level of study

Course offered in

First-cycle studies

polish

Form of study

Requirements

part-time

elective

Number of hours

Lecture

Laboratory classes

Other (e.g. online)

8

8

Tutorials

Projects/seminars

Number of credit points

2

Lecturers

Responsible for the course/lecturer:

Responsible for the course/lecturer:

dr inż. D. Sędziak

e-mail: dariusz.sedziak@put.poznan.pl

tel. 61 665 22 55

Wydział Inżynierii Mechanicznej

ul. Piotrowo 3, 60-965 Poznań

tel.: 061 665 23 62

Prerequisites

The student learned the basic knowledge in the field of technology, fluid drives, automation and control systems. Is able to solve elementary problems based on his knowledge, is able to obtain information from specified sources

Course objective

Providing students basic knowledge of electrohydraulics and electropneumatics, to the extent specified by the curriculum content appropriate to the field of study



Course-related learning outcomes

Knowledge

The student should be able to characterize the basic elements of proportional technique in hydraulics and pneumatics. The student knows how to characterize the issues in the field of working fluid filtration
The student knows how to characterize control issues in electrohydraulics and electropneumatics

Skills

The student is able to obtain information from literature, databases and other properly selected sources, integrate them, make their interpretations and draw conclusions, formulate and justify opinions, knows how to design or select simple mechanical constructions, electronic and measuring systems in the scope of the subject

Social competences

The student understands the need for lifelong learning; can inspire and organize the learning process of others. Is aware of the role of automation in modern economy and its importance for society and the environment. Is able to set priorities for the implementation of a specific task.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: Credit based on a written exam consisting of 3-4 general questions in the subject (<50% - ndst, 50-60%: dst 60-70% -dst +, 70-80: db, 80-90: db +, > 90% - very good)

Laboratory: Assessment based on oral or written answers from the content of the exercise and the assessment of passing reports on each exercise. Passing from the laboratory is done after meeting both criteria

Programme content

Control elements in servo and proportional valves. Proportional technique in hydraulics and pneumatics, including valve construction as well as their static and dynamic characteristics. Control path components in proportional technology, including valve cards and measuring sensors. Operational issues in hydraulics and oil purity assessment. Filtration systems and additional equipment for hydraulic systems.

Teaching methods

Lecture: multimedia presentation illustrated with examples

Laboratory: Topics implemented in groups in teaching positions

Bibliography

Basic

1. Napęd hydrostatyczny, Stryczek S., WNT, 2005
2. Napęd i sterowanie pneumatyczne, Szenajch w., WNT, 2005
3. Filtrowanie cieczy roboczych w urządzeniach hydraulicznych, Schmidt J., Ławniczak A., Senn F., 1991



Additional

1. Materiały dodatkowe, udostępniane przez producentów sprzętu

Breakdown of average student's workload

	Hours	ECTS
Total workload	30	2
Classes requiring direct contact with the teacher	16	
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	14	

¹ delete or add other activities as appropriate