

Hydraulic and pneumatic drive of technological equipment

(course title)

COURSE SYLLABUS ABSTRACT

1-36 01 03 – Machine-building process equipment

(speciality code and name)

	STUDY MODE
	full-time
Year	4
Semester	7
Lectures, hours	34
Practical classes (seminars), hours	16
Laboratory classes, hours	16
Course paper, semester	7
Exam, semester	7
Contact hours	66
Independent study, hours	42
Total course duration in hours / credit units	108/3

1. Course outline

Pumps. Hydraulic motors. Distributors. Seals. Hydraulic equipment guide. Throttled. Flow controllers. Check valves. Pressure valves. Indirect reduction valves. Throttling distributors. Tool stores. Clamp force valves. Pneumatic devices. Operating fluid conditioners. Hydraulic accumulators. Hydropneumatic drives.

2. Course learning outcomes

Upon completion of the course, students will be expected to know: classification, arrangement and principle of operation of elements of hydraulic and pneumatic drives, as well as requirements for them; typical diagrams and structures of hydropneumatic drives and their elements; features of the working process in hydropneumatic elements and automated drives of technological machines; basics of the theory and calculation of hydropneumatic elements and hydropneumatic drives; basics of modeling, synthesis and experimental study of hydropneumatic drives and their elements;

be able to: set and solve the problem of selecting the main parameters of hydropneumatic elements and hydropneumatic drives; make hydropneumatic diagrams of drives and systems of technological machines; calculate and design hydropneumatic elements and drives for the required operating parameters with the required characteristics; conduct tests of hydropneumatic elements and drives at experimental installations and benches; select hydropneumatic elements, auxiliary hydropneumatic equipment and working medium (body) for hydraulic and pneumatic systems according to catalogs and reference books;

possess: basic principles of functioning and structure of hydraulic and pneumatic drives; main elements and their design features of hydraulic and pneumatic drives; methods of control and automation of hydraulic and pneumatic drives.

3. Competencies

SK-1 – Be able to design automated electromechanical, guide-ravlic, pneumohydraulic drives of metal cutting machines using modern components and performing calculations.

4. Requirements and forms of midcourse evaluation and summative assessment

– verbal-written: protection of practical classes, laboratory protection, protection of heading work, exam.