DESIGN AND CALCULATION OF TECHNOLOGICAL EQUIPMENT AND AUTOMATION TOOLS

(name of the discipline)

ANNOTATION

TO THE CURRICULUM OF THE INSTITUTION OF HIGHER EDUCATION

Specialty 1-36 01 01 «Технология машиностроения»

	Form of higher education		
	full-time (daily)	correspondence abbreviated	part-time full
Well	3, 4	3, 4	4
Semester	6, 7	6, 7	7, 8
Lectures, hours	34	8	8
Laboratory classes, hours	16	4	4
Classroom examination (semester, hours)	-	6	7 (2 часа)
Course project, semester	7	7	8
Exam, semester	6	6	7
Classroom hours per academic discipline	50	12	12
Independent work, hours	58	94	94
Total hours per academic discipline / credits	108/3		

1. Brief content of the discipline

The discipline "Design and calculation of technological equipment and automation" contains ideas about the study of design options for technological equipment, their main components and mechanisms, layouts and structures, consideration of the main criteria and methods for achieving the specified parameters of the created equipment, technological systems and automation.

2. Learning outcomes

A student who has studied the discipline should **know**:

– principles of design and calculation of modern machine tools and machine tools;

– modern standard solutions for designing mechanisms and components of machine tools and machine tool systems;

– design of machine tools;

– basic concepts and definitions of automation tools;

– fundamentals of structural analysis and synthesis of actuating mechanisms of automation means; basics of power calculation of actuators of automation equipment;

– geometric and technical characteristics of automation equipment;

– bases of kinematic calculation of means of automation;

– bases of calculation of drives;

– bases of power calculation of working bodies of means of automation.

be able to::

– classify modern means of automation and analyze the features of their construction and functioning;

– to design separate mechanisms of automation means;

– carry out structural and power analysis and synthesis of actuators of automation equipment;

– carry out geometric and kinematic calculations of motion converters of automation equipment;

– on the basis of technical and economic requirements, to compose and solve problems related to the development of designs of machine units, machine tools and machine tool systems

own:

– basics of calculation and design of mechanisms of actuators of automation equipment;

3. Formed competencies:

SK-3 To be able to design separate units and metal-cutting machines as a whole, elements of hydraulic and pneumatic drives, as well as hydraulic and pneumatic automation, adaptations to these machines of various types, while using modern equipment control systems.

4. Requirements and forms of current and intermediate certification

Current and intermediate certification is carried out in written and oral-written form through reports on laboratory work with their oral defense, a written exam.