

## COURSE SYLLABUS ABSTRACT

Specialty **1-36 01 04 «Equipment and technologies of highly efficient material processing processes»**

	STUDY MODE
	full-time
Year	3
Semester	6
Lectures, hours	34
Laboratory classes, hours	16
Exam, semester	6
Independent study, hours	50 (16)
Contact hours	58
Total course duration in hours / credit units	108 / 3

### 1. Course outline

The purpose of the discipline is to master modern knowledge of the contact interaction of solids under external friction and wear

### 2. Course learning outcomes

The objectives of the discipline are to study the interaction of parts and assemblies of machines operating in the presence of friction; to study the physical processes accompanying the work of such parts; to obtain practical skills in calculating friction nodes.

As a result of mastering the academic discipline, the student must

To know:

basic laws of natural science disciplines for determining the basic properties of raw materials, the influence of material properties on resource conservation and reliability of technological processes during friction;

- physical and mechanical properties of surfaces, types, characteristics, laws and basic theories of external friction;

- technological schemes methods of quality control of products operating under conditions of friction and wear, methods for determining the coefficient of external friction,

be able to:

- apply methods of mathematical analysis of processes in determining optimal and rational technological modes of equipment operation in friction conditions;

- to carry out standard tests and technical control of the development and operation of friction units of machines.

- to analyze the causes of violations of technological processes during friction;

- determine the amount of wear and the ability of the material to resist various types of loads, use the wear-free effect.

own:

- skills of modeling, theoretical and experimental research to assess the quality and properties of friction surfaces, lubricants and additives to them operating under friction conditions.

- skills in developing measures to prevent violations of technological processes in determining the influence of various factors on the coefficient of external friction and on the properties of friction surfaces operating under wear conditions

### 3. Competencies

CK-10 Know the causes and patterns of wear and destruction of machine parts and equipment, methods to increase their durability and be able to apply them in practice

### 4. Requirements and forms of midcourse evaluation and summative assessment

– oral; oral-written.

- passing the exam;

- protection of laboratory work;

- performing test tasks

- performance of control work