

ENGINEERING MATERIAL TECHNOLOGY

(name of the discipline)

ANNOTATION TO THE CURRICULUM OF A HIGHER EDUCATION INSTITUTION

6-05-0713-04 Automation of technological processes and productions Profiling Automation of technological processes and productions in mechanical engineering

6-05-0714-02 Mechanical engineering technology, metal-cutting machines and tools Profiling Mechanical engineering technology

6-05-0714-02 Mechanical engineering technology, metal cutting machines and tools Profiling Equipment and technologies of highly efficient material processing processes

6-05-0714-02 Mechanical engineering technology, metal-cutting machines and tools Profiling Technological equipment of machine-building production

6-05-0714-03 Engineering and technical design and production of materials and products from them Profiling Equipment and technology of welding production

	STUDY MODE		
	full-time	part-time	part-time 6-05-0714-03
Year	1	2	3
Semester	1	3	3
Lectures, hours	34	8	6
Laboratory classes, hours	16	4	4
In-class test (semester, hours)	-	-	3 (2 часа)
Exam, semester	1	3	3
Contact hours	50	12	12
Independent study, hours	58	96	96
Total course duration in hours / credit units	108/3		

6-05-0715-03 Cars, tractors, mobile and technological complexes Specialization Computer engineering in lifting and transport engineering

6-05-0715-03 Cars, tractors, mobile and technological complexes Specialization Computer engineering in construction and road engineering

6-05-0715-03 Cars, tractors, mobile and technological complexes Specialization Computer engineering in the automotive industry

6-05-0715-07 Operation of ground transport and technological machines and complexes Profiling Technical operation of cars

6-05-0715-07 Operation of ground transport and technological machines and complexes Profiling Car Service

	STUDY MODE	
	full-time	part-time
Year	1	2
Semester	2	3
Lectures, hours	34	8
Laboratory classes, hours	16	4
Exam, semester	2	3
Contact hours	50	12
Independent study, hours	58	96
Total course duration in hours / credit units	108/3	

1. Summary of the academic discipline

The objectives of the discipline are to study the physical essence of technological methods for obtaining blanks by casting, pressure treatment, welding and their machining by cutting, and other methods. Mechanical foundations of technological methods of forming blanks and machine parts. Technological capabilities of the methods, their purpose, advantages and disadvantages, scope of application. Schematic diagrams of the operation of technological equipment. Schematic diagrams of tools, devices and accessories, their purpose and application.

2. Learning outcomes

to know:

- the essence of the methods of basic technological methods for obtaining blanks by casting, pressure treatment, powder metallurgy, welding, machining by cutting and other methods;
- technological capabilities of the methods, their purpose, advantages and disadvantages, scope of application;
- the economic feasibility of using various technological methods and methods of shaping and processing parts, workpieces;
- schematic diagrams of the operation of technological equipment (machines, machines, automata, etc.), tools, devices and accessories, their purpose and application.

be able to:

- to choose and justify a rational set of methods for shaping and processing blanks and machine parts;
- develop, based on the material and shape of the part, the technological shape of the workpiece;
- to make up the technological process of processing the obtained material in order to obtain a workpiece or a finished part with the necessary technological and operational properties of the material or product;
- evaluate the technical and economic efficiency of the selected technological process.

have skills:

- methods of selecting the workpiece of the part, taking into account its purpose, shape, material;
- information about the possibilities of various methods of machining machine parts;
- possess information about the operation schemes of various types of technological equipment in mechanical engineering.

3. Formed competencies

6-05-0713-04 Automation of technological processes and productions Profiling Automation of technological processes and productions in mechanical engineering	
SK-4	Understand the physical essence of the methods of obtaining blanks by casting, pressure treatment, welding, processing of blanks by cutting, know the schematic diagrams of technological equipment, tools and devices for cutting
6-05-0714-02 Mechanical engineering technology, metal-cutting machines and tools Profiling Mechanical engineering technology	
6-05-0714-02 Mechanical engineering technology, metal cutting machines and tools Profiling Equipment and technologies of highly efficient material processing	
processes 6-05-0714-02 Mechanical engineering technology, metal-cutting machines and tools Profiling Technological equipment of machine-building production	
BOD-7	To use methods of obtaining blanks by casting, pressure treatment, welding, to use knowledge of the schematic diagrams of technological equipment, tools and devices for cutting
6-05-0714-03 Engineering and technical design and production of materials and products from them Profiling Equipment and technology of welding production	
BOD-6	To use knowledge about the essence of basic technological methods for obtaining blanks by casting, pressure treatment, powder metallurgy, welding, mechanical cutting and other methods to solve practical tasks
6-05-0715-03 Cars, tractors, mobile and technological complexes Specialization Computer engineering in lifting and transport engineering	
6-05-0715-03 Cars, tractors, mobile and technological complexes Specialization Computer engineering in the automotive industry	
6-05-0715-03 Cars, tractors, mobile and technological complexes Specialization Computer engineering in construction and road engineering	
BOD-8	To use the basic concepts of methods of obtaining structural materials, methods of surface treatment, to apply them in the manufacture of parts of electric and autonomous transport
6-05-0715-07 Operation of ground transport and technological machines and complexes Profiling Technical operation of cars	
6-05-0715-07 Operation of ground transport and technological machines and complexes Profiling Car Service	
BOD-3	Understand the principles of obtaining structural materials and apply surface treatment methods in the manufacture of car parts

4. Requirements and forms of current and interim certification.

The defense of laboratory work is carried out orally.

The exam is conducted in writing in the form of answers to test questions.