WORKPIECE DESIGN AND MANUFACTURE

(course title)

COURSE SYLLABUS ABSTRACT

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

profiling Mechanical engineering technology. Technological equipment for mechanical engineering production.

	Form of higher education		
	full-time (daily)	part-time	part-time (shortened program)
Well	3	3	2
Semester	5	6	4
Lectures, hours	16	4	4
Laboratory classes, hours	16	4	4
Report, semester	5	6	4
Classroom hours per academic discipline	32	8	8
Independent work, hours	76	100	100
Total hours per academic discipline / credits	108/3		

1. 1. Course outline

The discipline "Design and production of blanks" contains general ideas about the methods of shaping product blanks, factors influencing the choice of the method of shaping blanks.

2. Course learning outcomes

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

- principles for selecting blanks of machine parts for given operating conditions and production of parts;
- the possibility of various methods for obtaining blanks;
- main directions of development of methods for obtaining blanks;

be able to:- make a reasonable choice of a part blank for the given conditions of its operation and production;

- calculate allowances and tolerances for workpiece surfaces;
- develop and draw up a drawing of a workpiece for various methods of its production;

to press a skill:

- methodology for designing various types of machine parts blanks;
- skills and technical means for assessing the quality of workpieces in production conditions;
- methods of economic justification for a rational type of procurement for given production conditions.

3. Competencies:

For specialty 6-05-0714-02 Mechanical engineering technology, metal-cutting machines and tools. Specialization: Mechanical engineering technology: Be able to select methods for obtaining machine part blanks, develop blank drawings, select blank processing methods, necessary equipment and tooling, calculate allowances, cutting modes, the number of machines and their loading, and perform dimensional calculations of technological processes. Know the principles of selecting methods for obtaining machine part blanks for various operating conditions and machine production, modern methods for obtaining blanks, rules for creating and arranging their drawings.

For specialty 6-05-0714-02 Mechanical engineering technology, metal-cutting machines and tools. Specialization: Technological equipment for mechanical engineering production: Have a basic understanding of the design of mechanisms, machines, technological equipment and technological processes for mechanical engineering production. Be able to design technological processes for processing parts and assembling machines. Be able to design metal-cutting machines and their technological equipment. Be able to design technological processes for processing parts and assembling machines with the preparation of technological documentation, ensuring the productivity and cost-effectiveness of their manufacturing processes.

For specialty 6-05-0713-04 Automation of technological processes and production, Profiling: Automation of technological processes and production in mechanical engineering: Use methods for obtaining blanks by casting, pressure treatment, welding, use knowledge of the basic operation diagrams of technological equipment, tools and devices for cutting. Know the principles of choosing methods for obtaining blanks of machine parts for various operating conditions and machine production, modern methods for obtaining blanks, rules for creating and drawing up drawings.

4. Requirements and forms of midcourse evaluation and summative assessment

Current and intermediate certification is carried out in written and oral form through reports on practical work with their oral defense, and written testing.