

# BASICS OF ENGINEERING TECHNOLOGY

## COURSE SYLLABUS ABSTRACT

**Specialty** 6-05-0713-04 Automation of technological processes and production

**Profiling:** Automation of technological processes and production in mechanical engineering

|                                               | STUDY MODE |
|-----------------------------------------------|------------|
|                                               | Full-time  |
| Year                                          | 3          |
| Semester                                      | 5          |
| Lectures, hours                               | 50         |
| Practical (seminar) classes, hours            | 16         |
| Laboratory classes, hours                     | 16         |
| Exam, semester                                | 5          |
| Classroom hours per academic discipline       | 82         |
| Independent work, hours                       | 62         |
| Total hours per academic discipline / credits | 144/4      |

### 1. Course outline

The discipline "Fundamentals of Mechanical Engineering Technology" contains a presentation to students of general ideas about the content and tasks of the technology of mechanical engineering and instrumentation, about the foundations of theoretical positions, about the connections and patterns of technological processes, knowledge of which allows you to develop processes for machining parts and assembling machines and devices that ensure their quality at the highest level of labor productivity and the lowest cost of manufacturing products.

#### 1. Course learning outcomes

Upon completion of the course, students will be expected to **know**:

- sources of machining errors, methods of their reduction;
- influence of various factors on the characteristics of the quality of surfaces of parts and their performance properties;
- principles of designing rational technological processes for various production conditions;

#### **be able to:**

- perform calculations of the main types of processing errors;
- design technological processes for processing parts and assembling machines for various production conditions;
- draw up technological documentation;
- evaluate the accuracy and stability of the current technological process;

#### **to possess a skill:**

- methodology for choosing the route for processing individual surfaces and the part as a whole, taking into account the requirements of the part drawing, the accepted workpieces and the type of production;
- skills for assessing the quality of the technological process of machining and manufactured parts in production conditions;
- information necessary for the selection of statistical methods of regulation and quality control of products for given production conditions.

### 2. Competencies

Mastering this academic discipline should ensure the formation of the following competencies:

Know the sources of errors in machining, methods for calculating and reducing machining errors, designing technological processes for machining parts and assembling machines

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

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