FUNDAMENTALS OF SCIENTIFIC RESEARCH, INVENTION AND INNOVATION IN MECHANICAL ENGINEERING

COURSE SYLLABUS ABSTRACT

6-05-0713-04 - « Automation of technological processes and productions»
Specialization: Automation of technological processes and production in mechanical engineering
6-05-0714-02 - "Mechanical Engineering Technology, Metal-Cutting Machines and Tools"
Specialization: Mechanical engineering technology
(speciality code and name)

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	4	4	4
Semester	7	7	7
Lectures, hours	16	4	4
Practical classes, hours	16	4	4
Pass/fail, semester	7	7	7
Contact hours	32	8	8
Independent study, hours	76	100	100
Total course duration in hours / credit units	108/3		

1. Course outline is to present to students knowledge and skills in the field of organization and methodology of scientific research, methods of forming inventive ideas, as well as the basics of innovation activity in the Republic of Belarus.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know:

- fundamentals of scientific research methodology;
– organization of scientific activity and training of scientific personnel;
– legal framework for the protection of intellectual property;
– organization of innovation activities;

be able to:

- evaluate the errors in scientific research results;
– process and present the results of direct measurements;
– conduct numerical processing and analysis of experimental results;

to possess a skill:

- searching for information for patent work.

3. Competencies

Know the basics of error theory, correlation and regression analysis, experimental design, process optimization, analysis of technological processes, operational properties of parts and tools, methods of invention and innovation in mechanical engineering

4. Requirements and forms of midcourse evaluation and summative assessment

The following diagnostic tools and forms are used to assess the level of students' knowledge: defense of individual assignments (oral); passing a test (oral and written).