

FUNDAMENTALS OF SCIENTIFIC RESEARCH AND INNOVATION

(course title)

COURSE SYLLABUS ABSTRACT

Specialization 6-05-0715-07 «Operation of ground transport and technological machines and complexes»

(speciality code and name)

Profiling «Technical operation of cars»

(specialisation code and name)

Profiling «Technical operation of cars»(specialisation code and name)

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	2	2,3	2
Semester	3, 4	4, 5	3, 4
Lectures, hours	34	8	8
Practical classes (seminars), hours	16	4	4
Laboratory classes, hours	34	8	8
Course paper, semester	4	5	4
Exam, semester	3	4	3
Contact hours	84	20	20
Independent study, hours	60	124	124
Total course duration in hours / credit units	144/4		

1. Course outline

The discipline contains the basic theoretical and methodological foundations for conducting scientific research and innovation activities to ensure scientific and technological progress and solving engineering and socio-economic problems.

2. Course learning outcomes

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

- goals and objectives of fundamental and applied research;
- methodological foundations of experimental work;
- the main stages and methods of processing research results;
- innovative laws and objectives of innovative activity;
- fundamentals of correlation and regression analysis, theory of experiment planning and optimal decision-making;
- fundamentals of the theory of queuing and the possibility of using it to solve problems of technical operation;
- content, methods of innovation activity and the basics of its organization;
- methods of innovative design and business planning of developments;
- the main legislative and regulatory acts in the field of innovation;
- foreign and domestic experience in the field of innovation in the specialty.

be able to:

- to use the theory of experiment planning, queuing theory and reliability theory, correlation and regression models in research on technical operation;
- to use the methods of organizing and conducting scientific research in the field of transport;
- apply methods of analysis and organization of innovation implementation.

have a skill:

- to process statistical data and use them in practical work;
- to analyze new technologies, equipment, projects and solutions in order to assess their innovative potential;
- to determine the competitiveness of products.

3. Competencies

– To master the basics of research activities, to search, analyze and synthesize information. – Be capable of self-development and improvement in professional activity. – Take the initiative and adapt to changes in professional activity. – To master the basics of research activities, to search, analyze and synthesize information.

4. Requirements and forms of midcourse evaluation and summative assessment

Current certification: laboratory work protection (oral-written form), intermediate certification: examination (oral-written form).