BASIS OF SCIENTIFIC RESEARCH AND INNOVATION ACTIVITY
(course title)

COURSE SYLLABUS ABSTRACT
of higher education institution speciality

1-37 01 06 "Technical operation of vehicles" (by directions)»
(speciality code and name)

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	2	4	2,3
Semester	4	7	4, 5
Lectures, hours	34	8	8
Practical classes (seminars), hours	16	4	4
Laboratory classes, hours	34	4	4
In-class test (semester, hours)			4, (2 hours)
Course paper, semester	4	7	5
Exam, semester	4	7	4
Contact hours	84	16	18
Independent study, hours	46	114	112
Total course duration in hours / credit units	130/3		

1. Course outline
The discipline contains the main theoretical and methodological foundations for scientific research and innovation to ensure scientific and technological progress and solve 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; innovative laws and goals of innovative activity; fundamentals of correlation and regression analysis, the theory of planning experiments and making optimal decisions; fundamentals of the theory of queuing and the possibility of its use for solving problems of technical operation; content, methods of innovation and the basis of its organization; methods of innovative design and business planning; foreign and domestic experience in the field of innovations in the specialty.
be able to:
process statistical data and use them in practical work; use the theory of planning experiments, the theory of queuing and the theory of reliability, correlation-regression models in research on technical operation; use the methods of organizing and conducting scientific research in the field of transport; analyze new technologies, equipment, projects and solutions in order to assess their innovative potential; determine the competitiveness of products; determine the goals of innovation and ways to achieve them; apply methods of analysis and organization of innovations.
possess:
methodological foundations of experimental work; methodological foundations for conducting theoretical research based on modeling; methods of innovative design and planning of scientific developments.
3. Competencies
AC - 1 Be able to apply basic scientific and theoretical knowledge to solve theoretical and practical problems of the technical operation of vehicles. AC - 2 Be proficient in systemic and comparative analysis. AC - 3 Possess research skills. AC - 4 Be able to work independently. AC - 5 Be able to generate new ideas (be creative). AC - 6 Own an interdisciplinary approach to solving problems. AC - 7 Have skills related to the use of technical devices, information management and computer work. AC - 8 Possess oral and written communication skills. AC - 9 Be able to learn, improve their skills throughout their lives. SPC - 2 Be capable of social interaction. SPC - 5 Be capable of criticism and self-criticism. SPC - 6 Be able to work in a team. PC - 4 Analyze and evaluate the collected data. PC - 7 Use global information resources. PC - 12 Analyze the prospects and directions for the development of the production and technical base and road transport in general. PC - 21 To generalize and use the best industry and cross-industry experience. PC - 43 Search and analyze information on projects and solutions in the field of maintenance and repair of vehicles. PC - 45 Determine the goals of innovation and ways to achieve them. PC - 46 Work with scientific, technical and patent literature. PC - 47 Develop business plans for the creation of equipment and technologies for the use of technological processes of the organization PC - 48 Assess the competitiveness and economic efficiency of the developed equipment and technologies. PC - 49 Conduct experimental and technological research in the creation and implementation of new equipment and technologies for the maintenance and repair of motor vehicles, their pilot testing and testing.
4. Requirements and forms of midcourse evaluation and summative assessment
To assess the level of knowledge of students, diagnostic tools are used: - oral; - written; - oral and written;