SURVEY AND DESIGN OF HIGHWAYS

ANNOTATION
TO THE CURRICULUM OF A HIGHER EDUCATION INSTITUTION

Specialty 1-70 03 01 Highways

	Form of higher education		
	Full-time (day)	Correspondence	Correspondence abbreviated
Course	3,4	3,4	2,3
Term	5,6,7,8	6,7,8,9	4,5
Lectures, hours	98	32	16
Practical (seminar) classes, hours	84	26	12
Classroom control work (semester, hours)		6 (2ч)	4,5
Course project, semester	5,6,7	7,8,9	4,5
Credit, semester	8	9	
Exam, semester	5,6,7	6,7,8	4,5
Classroom hours for the academic discipline	182	58	32
Independent work, hours	209	333	359
Total hours of academic discipline / credits	391/10		

1. The purpose of the discipline "Survey and design of highways" is to form students' knowledge about the methods of designing and surveying highways, taking into account the national economic significance of these structures, natural conditions, requirements for efficient and safe operation of road transport.
2. As a result of mastering the discipline "Survey and design of highways", the student must
know: - fundamentals of economic and technical surveys of transport facilities; - principles and methods of substantiation of geometric elements of highways; - technology for performing technical and economic surveys;- principles of assigning parameters and solving issues of surface and underground drainage; - methods of designing "roadbed - road clothing" systems, depending on the composition and intensity of traffic, climatic construction area; - the methodology of choosing a design car for designing road clothes and bringing various cars to the design one; - strength criteria and methods for calculating non-rigid and rigid road clothes for the effect of transport loads and weather and climatic factors; - criteria and methods of designing road surfaces during reconstruction and reinforcement;- the methodology of designing a transport interchange "Full clover leaf"; - the methodology of designing a transport interchange of the "Pipe" type,
be able to: - organize and conduct economic and technical surveys of transport facilities; - to carry out a feasibility study of the parameters of the highway; - to design a plan, longitudinal and transverse profile of highways; - design intersections of highways and transport interchanges; - substantiate the parameters of culverts; - to carry out the selection and parameters of the design vehicle; - to carry out the design and calculation of road clothes for the action of transport loads; - perform the calculation of road clothes for the effect of weather and climatic factors; - perform calculations of road clothes for strength during reconstruction and major repairs; - optimize the structures of road clothes taking into account technical and economic indicators;
possess: - methods of calculating elements of the route plan and project line; - basic techniques for designing the turn-off; - skills in designing cuvettes; - methodology for determining the volume of earthworks; - rules for designing intersections and junctions of highways, transport interchanges; - methodology for the calculation of non-rigid road clothes; - rules for the design of the roadbed in swamps; - the methodology of designing complete simple and improved transport interchanges.
3. Formed competencies
AK-1 be able to apply basic scientific and theoretical knowledge to solve theoretical and practical problems. AK-1 Be able to apply basic scientific and theoretical knowledge to solve theoretical and practical problems. AK-2 Possess a systematic and comparative analysis. AK-3 Possess research skills. AK-4 Be able to work independently. AK-5 to be able to generate new ideas (to have creativity). AK-7 Have skills related to the use of technical devices, information management and computer work. AK-8 Have oral and written communication skills. SLK-2 To be capable of social interaction. SLK-3 Has the ability to interpersonal communication. SLK-4 Be able to work in a team. PC-2 To develop technical specifications for the projected object, taking into account the results of research and development work.
4. The following forms are used to diagnose competencies:
- oral form;- written form;- oral-written form.