INFORMATICS

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	1,2	1,2	1
Term	1,2,3	1,2,3	1
Lectures, hours	48	14	4
Laboratory classes, hours	102	22	6
Classroom control work (semester, hours)	-	2 (2 hours), 3 (2 hours)	1 (2 hours)
Credit, semester (*differentiated credit)	1,2	1,2	-
Exam, semester	3	3	1
Classroom hours for the academic discipline	150	36	12
Independent work, hours	i30	244	268
Total hours of academic discipline / credits	280 / 7		

1. The discipline belongs to the cycle of natural sciences (a component of a higher education institution).
Working on a PC is an integral part of engineering education and professional activity.
The purpose of the discipline "Informatics" is to form the basics of the information culture of future specialists among students, adequate to the current level and prospects for the development of information processes and systems, as well as the formation of students' knowledge and skills necessary for free orientation in the information environment and further professional self-education in the field of computer training.
2. As a result of studying the discipline, the student must:
know:
- computer hardware and software; - fundamentals of algorithmization of engineering tasks; - programming in algorithmic language; technologies of application of standard programs for computer modeling of technical problems; - specifics and types of professionally relevant information; - sources of obtaining the necessary information; - the structure of geoinformation systems;
be able to:
- to set applied problems, to build their mathematical models, to develop algorithms for solving; - implement the constructed algorithm in the form of its own program in an algorithmic language or using standard programs; - use software packages in professional activities;
- possess computer methods of collecting, storing and processing information used in the field of his professional activity; use them correctly; - use the means of modern information technologies;
own:
- computer hardware and software; - basics of programming in an algorithmic language; skills of working with word processors, spreadsheets, database management systems.
3. As a result of mastering the discipline, the student should have the following competencies:- AK-1 To be able to apply basic scientific and theoretical knowledge to solve theoretical and practical problems; -AK-2 To have a systematic and comparative analysis; - AK-3 Possess research skills; - AK-4 Be able to work independently; - 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 Be capable of social interaction; - SLK-3 Have the ability to interpersonal communication; - SLK-4 Be able to work in a team; - SLK - 5 Be capable of criticism and self-criticism. - PC-43 To assess the competitiveness and economic efficiency of the technologies being developed; PC-46 To be able to work with the database of regulatory and technical documents of the road sector.
4. Requirements and forms of current and interim certification.
The following forms are used to diagnose competencies:
- oral;- written;- oral-written.
To assess the level of knowledge of students, the following diagnostic tools are used:
- reports on laboratory work with their oral defense; - passing the test; - passing the exam.