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Modern Importance of Geodesy and Cartography

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ABSTRACT

The article talks about the disciplines of Geodesy and cartography, which are indispensable assistants in modern design and construction. An explanation is given about the modern meaning, importance and relevance of these Sciences, what is their place and why it is necessary. The article considers modern Geodesy as a multifaceted science that solves complex scientific and practical problems.

Geodesy and cartography are indispensable helpers in modern design and construction. What is Geodesy and cartography, why should they be taken into account, what is their significance? These sciences have been known for a very long time, they came to us from the ancient Greeks, but still remain relevant, actively developed and closely related to other sciences. So, what is the modern significance of Geodesy and cartography, why are they needed? The answer to this question begins with the following definition. Geodesy is a science dedicated to measuring the size and shape of planet earth, as well as the objects located on its surface and its gravitational field. The data obtained are preliminary data for the preparation of calculations, plans, schemes, projects.

Cartography is a science dedicated to the study of objects and natural phenomena in space, modeling, graphic representation, as well as the study of their relationships and their impact on the environment. Based on the results obtained, flat, relief and three-dimensional maps are compiled. In addition, science studies and analyzes already existing maps, their character systems, sources and theories of their construction.

As you can see, Geodesy and cartography are closely related, especially in the modern world. The first science collects data, and the second helps to transform the information received into models of figurative signs. Naturally, other disciplines are also involved in this process, which often come from the subjects in question.

So, in most cases, today Geodesy and topography are inseparable-this is a science dedicated to the study of the surface of Planet Earth and the provision of information obtained according to plans. But this relationship should be considered in the context of the modern significance of the sciences. What is the modern significance of Geodesy and cartography: why are they needed? The role of these disciplines is difficult to overestimate, especially when it comes to construction industry and engineering research.

Any real estate object, especially large in size, is simply dangerous to build according to old maps. and they can really become obsolete for several years and even decades, because everything in nature is constantly changing. Therefore, in preparation for the construction of an object within the framework of engineering research, they often pay attention to this aspect of topography, Geodesy and cartography: maps, plans and books on actual dimensions, shapes, and landscape conditions. In addition, in some cases, it is necessary to study the natural conditions of the region, plot, construction site. In such situations, specialists turn to the means and capabilities of Geodesy and cartography: they analyze the landscape, diagnose underground conditions, take into account water flows and reservoirs, soil conditions, existing structures, communications, planning elements.

Based on the data obtained and current maps, a comprehensive assessment of the area, plot, area is given, mathematical models of the area are compiled and engineering solutions are proposed. The demand for Geodesy and cartography is clear - these disciplines provide information for design and, therefore, are constantly evolving. To get the necessary information about the terrain and relief features, today it is enough to climb the air on the plane.

All the necessary places can be photographed, then studied and analyzed. Geodesy and cartography are indispensable helpers in modern design and construction with their "little brothers" like topography and effective tools like aerophotosurate. Modern Geodesy is a

multifaceted science that solves complex scientific and practical problems. Engineering Geodesy studies the methods of Geodetic support in the development of projects, the construction and use of various structures, as well as in the study, assimilation and protection of Natural Resources. Engineering Geodesy is closely related to other geodetic disciplines, using measurement methods and instruments designed for general Geodesy.

Engineering-Geodetic measurements are carried out directly on Earth in various physical and geographical conditions, therefore it is necessary to take care of Environmental Protection: not to damage forests, agricultural land, not to pollute water bodies. Because at the present stage, the scientific and technical issues of the development of the cartography and geodetic industry are very relevant. Every year, specialists of our institute make a significant contribution to the development of this industry and work in cooperation not only with our country, but also with foreign partners.

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