



## **The Role and Significance of General Sciences in the Training of Civil Engineers**

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Students of the "Building and Structures Construction" bachelor's course of study, approved by the Minister of Higher and Secondary Special Education of the Republic of Uzbekistan on August 24, 2017 hours and in which semester it is studied are listed in Table 1.

**Table-1 Science of construction physics**

Subject name	Total hours	Auditorium hour					Semester			
		Total	Lecture	Practical	Laboratory	Independent education	5	6	7	8
Construction physics	96	56	28	28	-	40			56	

**The purpose of teaching science** – students to study the physical processes that occur in the building and its parts and the impact of these processes on the building and people, natural and artificial light, heat, air movement and sound, their nature of perception by humans and sociological, hygienic, and to teach the theoretical foundations and practical methods of the rules of shaping the architecture of buildings and structures, taking into account their economic aspects.

**The task of science** – in the field of construction climatology, the basic descriptions and parameters of the landscape and climate of the regions, climatic zones for construction, physical and geological data for the design of buildings, solar radiation, temperature, humidity, wind speed and directions, building volume of the climate - impact on planning and constructive solutions, use of regulatory documents on climate; thermophysical properties of building materials in terms of thermal engineering, theoretical foundations of heat flow in building barrier structures, design of external barrier structures from the point of view of thermal engineering, taking into account winter and summer conditions, assessment of their moisture regime; the physical nature of light in the field of natural lighting, the basics of regulating the amount of natural lighting in buildings, designing structures that provide natural lighting, determining the coefficient of natural lighting, designing means of protecting buildings from the effects of solar radiation; in the field of building acoustics is the formation of knowledge and skills such as physical and physiological properties of sound, sources of noise, noise propagation in the building, protection from air and shock noise, design of appropriate acoustics of halls.

The purpose of science and its role in the preparation of construction bachelors. Physical processes in parts and constructions of buildings and the impact of these processes on buildings and people.

**Main characteristics and parameters of the landscape and climate of Uzbekistan.** Climatic and physical-geological data used in the design of buildings: outdoor air temperature, humidity, wind speed and directions, solar radiation and other data. Climatic zoning of the territory of Uzbekistan for construction.



**Heat transfer in the external barrier constructions of the building in winter under conditions of stationary heat flow.** Types of heat transfer: heat conduction, convection, radiation. Thermal technical characteristics of building materials. Single-layer, multi-layer, homogeneous and non-homogeneous external barrier constructions. Thermal technical calculation of one-layer and multi-layer homogeneous external barrier structures: heat flow and temperature distribution in the external barrier structure; resistance to heat exchange of internal and external surfaces of the structure; resistance to heat transfer (thermal resistance) of the structural layer; total resistance of the external barrier construction. Thermal inertia.

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