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<sup>1,2</sup>*Industrial aesthetics and her Knowledge in preparing*

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### **Industrial aesthetics and the importance of the designer in training and activities**

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**Abstract:** *A creative person today is in demand in all areas of activity. The pace of modern life is constantly accelerating, the professional tasks of specialists are complicated, because continuously developing science and production. Only a creative person is capable of flexible and adequate solution of problems, active perception of the surrounding reality, independent search for solving problems, self-development, self-education and adaptation to new conditions. The designer, who acts creatively in a situation of impossibility of choice, i.e. creates an original design product with high aesthetic and ergonomic qualities on the existing equipment, using the available materials and tools. In addition, the designer should have a clear idea of what the consumer expects from him, follow the trends of time and place, scientific and technical progress, respond to socio-economic changes and, most importantly in this situation, be able to anticipate time and create a product that is in demand, in future.*

**Key words:** *artistic design, industrial design, industrial aesthetics, ergonomics, anthropometry, engineering psychology, artistic and design analysis.*

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**Introduction.** Industrial aesthetics (Fundamentals of Artistic Design) in higher education depends largely on a proper

understanding of the reasons for its necessity and the importance of the sciences that make up this course. The need for industrial aesthetics is caused by.

The high level of development of industrial design, social consciousness of the culture of the people. All this causes the human need for beautiful and comfortable in the use of industrial products in the aesthetic subject environment.

Studies of the change in the concept of quality of industrial products shows began to take into account the aesthetic qualities of the product. The consequence is the production of industrial products, which are not inferior to the best technical and aesthetic indicators of the world's samples. Creating a product that meets modern requirements, offers close cooperation engineer-constructor with the designer, so industrial aesthetics design should give, the necessary knowledge to engineer-designer for his work together with specialists in the field of technical aesthetics and artistic design. The design engineer must properly understand the tasks of artistic design, professionally speak intelligently with the design engineer and in cooperation with him to create industrial products and environments that meet modern technical and aesthetic requirements.

Industrial aesthetics is the science that studies aesthetic laws in the sphere of production. Industrial aesthetics is very close to the concept of industry. Industrial design includes several scientific sections.

1. Ergonomics - the science of human-machine interaction in labor processes, which in its turn consists of anthropometry, engineering psychology and occupational hygiene.

2. anthropometry is an extended characteristic of a human being. Anthropometric data are the basis for the design of machines, tools, premises, and consumer products of the production environment, which makes it possible to operate these items correctly and efficiently.

3. Engineering psychology studies the so-called "man-machine" system and allows for a better distribution of functions between

them and thus ensures the best possible working conditions and results.

4. Occupational hygiene is the science of comfortable and safe working conditions. There cannot be a beautiful machine and workshop if there is no convenience in operation of the machine, if elementary hygienic conditions are absent in the workshop. 5.

5. Color science, color and functional coloring plays a big role in the aesthetization of industrial products and the object environment. Color can please and sadden, irritate and soothe, so the design engineer must know what effect color has on a person.

6. Composition is the science of form harmony. Any industrial form with artistic qualities is holistically created through composition. Compositional means are relations, proportions, rhythm, nuance and contrast of elements of the form of volumes

7. Artistic and design analysis, which includes the study of existing analogues in order to identify their shortcomings, testing of product models, assessment of ergonomic and compositional, economic and other advantages of the designed product. As a result of the analysis the requirements for the artistic design of the product are formed.

8. Assessment of consumer properties of industrial products. Consumer properties are directly manifested in the interaction of the consumer with the product in the process of consumption. This means that the object of the study is a real system "man-product-environment" or its laboratory model. The demand for industrial products depends on the correct consideration of consumer properties, so when designing them it is necessary to take into account the national peculiarities of the growth of favorite colors. In the modern design of industrial products is characterized by a comprehensive design in industrial design in which the engineer - designer to develop new industrial products, so the structure of industrial aesthetics included special general engineering disciplines without knowledge of which no design.

9. The culture of production means the degree of perfection of production in scientific-technical, economic, aesthetic and other respects.

The culture of production is closely connected with the improvement and development of industrial production on the basis of the achievements of science and technology, in accordance with the spiritual needs of society. In today's design of industrial products is characterized by a comprehensive design of industrial design in which the design engineer develops new industrial products, so the structure of industrial Aesthetic includes special general engineering disciplines, without which no design.

**Conclusion.** Consequently, industrial design considers and analyzes:

- the conformity of the product to technical capabilities and functions;
- compliance of the product with the structure of the human body, ergonomic needs;
- the profitability of production;
- the new shape and color of the product;
- convenience in operation, safety.

The relevance of modern designer's work is to stimulate changes in the design, shaping, manufacturing technology, since any new development should contain an innovative solution.

The widespread introduction of new technologies, web-resources, materials and multimedia information products has created a need for highly qualified interdisciplinary specialists with a fundamental education in design, materials science, mechanical engineering, processing technology, automation of technological manufacturing processes, as well as in computer technology to solve professional creative tasks.

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### **Өнеркәсіптік эстетика және дизайнердің дайындығы мен қызметіндегі маңызы**

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***Аңдатпа:** Шығармашылық тұлға бүгінде барлық қызмет салаларында сұранысқа ие. Қазіргі өмірдің қарқыны үнемі жеделдейді, мамандардың кәсіби міндеттері күрделене түседі, өйткені ғылым мен өндіріс үздіксіз дамып келеді. Тек креативті тұлға проблемаларды икемді және барабар шешуге, қоршаған шындықты белсенді қабылдауға, проблемаларды*

шешуді тәуелсіз іздеуге, өзін-өзі дамытуға, өзін-өзі тәрбиелеуге және жаңа жағдайларға бейімделуге қабілетті. Таңдау мүмкін емес жағдайда креативті әрекет ететін дизайнер кәсіби сұранысқа ие болады, яғни. қолда бар материалдар мен құралдарды қолдана отырып, қолда бар жабдықта жоғары эстетикалық және эргономикалық қасиеттері бар түпнұсқа дизайн өнімін жасайды. Сонымен қатар, дизайнер тұтынушының одан не күтетіні туралы нақты түсінікке ие болуы керек, уақыт пен орын тенденцияларын, ғылыми-техникалық прогресті ұстануы керек, әлеуметтік-экономикалық өзгерістерге жауап беруі керек және бұл жағдайда ең бастысы, уақыттан озып, болашақта сұранысқа ие өнімді құра білуі керек.

**Кілт сөздер:** көркемдік дизайн, өнеркәсіптік дизайн, өнеркәсіптік эстетика, эргономика, антропометрия, инженерлік психология, көркемдік-конструкторлық талдау.

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## **Промышленная эстетика и значение в подготовке и деятельности дизайнера**

**Аннотация:** Творческая личность сегодня востребована во всех сферах деятельности. Только креативная личность способна к гибкому и адекватному решению проблем, активному восприятию окружающей действительности, самостоятельному поиску решения задач, саморазвитию, самообразованию и адаптации к новым условиям. Профессионально-востребованным становится тот дизайнер, который действует креативно в ситуации невозможности выбора, т.е. создает оригинальный дизайн-продукт с высокими эстетическими и эргономическими качествами на имеющемся оборудовании, с применением имеющихся материалов и средств. Кроме того, дизайнер должен иметь четкое

*представление о том, чего ждет от него потребитель, следовать тенденциям времени и места, научно-техническому прогрессу, реагировать на социально-экономические изменения и, самое важное в этой ситуации, уметь опережать время и создавать продукт, востребованный в будущем.*

**Ключевые слова:** *художественное конструирование, промышленный дизайн, промышленная эстетика, эргономика, антропометрия, инженерная психология, художественно-конструкторский анализ.*

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