

## BASIC PROFESSIONAL RULES FOR STUDENTS OF A HIGHER EDUCATIONAL INSTITUTION IN THE DESIGN OF INFORMATION

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### Annotation

Modern requirements for the fundamental training of students can be ensured through the use of fundamentally new technical, technological, organizational and managerial tools, as well as teaching methods implemented on the basis of ICT.

**Keywords:** Education, conditions, base, professional, training, basis, rule, process, OSM, student, technical, form, method, tool, important.

### Introduction

The implementation of the rules mentioned in the traditional methodological system of education due to its closeness, strict regulation and stability of the content of academic disciplines, the inability to make serious changes, becomes complex, and sometimes even impossible[1].

Therefore, the following are required:

1. Creation of a unified system for the training of students of engineering and construction CSR on the basis of ICT tools.
2. Information-based integration of Education, Science and production. The main component of such integration should be the correlation between the fundamentality of knowledge and professional orientation.
3. Linking the training of students with information-activity methods aimed at developing skills for the implementation of educational-informational and research-analytical activities, involving students in research and research-analytical work on the Internet.
4. The individual and differentiated teaching of students on the basis of ICT, on the basis of which a multi-stage theoretical framework is formed, provides for the strengthening of basic professional-oriented mastering in natural sciences and general technical sciences.
5. Base and information expand educational goals, which implies the integration of practical knowledge, the development of methods, forms and means of training and training on the basis of ICT.
6. Implementation of the choice of the content of the base Sciences on the basis of the invariant-project principle: the invariant component retains the existing traditional teaching methods and tools, the projective component connects with the achievements of the development of Science

and technology in the field of information and analytical activity.

7. The modularity of the base subjects to be studied.

8. Interdisciplinary compatibility of the software and methodological support of Natural Sciences and General Technical Sciences on the basis of ICT tools.

The implementation of ICT capabilities stimulates the emergence of new tools, organizational forms and styles of teaching, as well as the improvement of existing ones that have proven themselves well. This leads to an expansion of the goals of teaching science and a change in the criteria for choosing the content of educational material: they are based on the acceleration of teaching, the development and self-development of the student's personality, the absorption of skills for the formation and independent separation of knowledge, the differentiation of laws, the use of ICT tools as [2].

In our opinion, it is necessary to take into account the following components when improving the base preparation in the ICT conditions of students of engineering and construction universities.

**1. Motivational** – includes the need for self-realization in the use of information technology tools for solving professional tasks, the need for continuous independent education using ICT tools, the desire to make professional and research activities acceptable.

**2. Project** – The ability to justify the choice of ICT tools, the possibility of designing the technological process of solving their educational (later professional) tasks using selected tools, the ability to assess the accuracy of the results obtained before completing the project.

**3. Organizational** – information and communication is represented by the ability to organize self-knowledge activities in the context of the science environment.

**4. Research** – the search and selection of professionally relevant information includes the ability to use ICT for its effective analysis.

**5. Adaptation** – to solve a specific task involves the ability to adapt existing tools and technologies, to correct information technologies.

**6. Constructive** – includes the skill of using the base information and communication tools to manage the development and implementation of its own project.

Modern requirements for the fundamental training of students can be ensured through the use of fundamentally new technical, technological, organizational and managerial tools, as well as teaching methods implemented on the basis of ICT.

The speed of changes taking place in the field of ICT is very high. The education sector, in

turn, applies these technologies in a delayed mode.

We form the rules that we use as a basis for the training of specialists of engineering and construction OSMS in the ICT environment with a base professional orientation.

**Rule one** - modularity of fundamental preparation. We list the principles of the formation of modules that we have improved:

1. Structuring principle – the separation of educational material into structural elements with certain content and didactic purposes, which implies the use of ICT as a teaching tool and an instrument of cognition.
2. Principle of dynamism – provides an evolutionary but responsible change in the content of modules.
3. Principle of systematicity – provides interdisciplinary and internal logical-substantive connections between the fundamental and special training disciplines of students.
4. Flexibility principle – in the development of the principle of dynamism – provides not only a change in the purpose and content of the module, but also its adaptation to changing scientific and technical and socio-economic conditions.
5. Principle of efficiency and speed – the module provides for the organization of a quick feedback system in the educational process with the aim of timely control, correction and assessment of the level of assimilation of educational information.

**Rule two** – in the study of fundamental and special Sciences, continuity is based on the following principles:

1. The principle of a unified information and Communication Science Environment – provides continuity in the information-methodological provision of the disciplines of fundamental and professional Periods, Methods of access and use of information for educational purposes.
2. Principle of continuous use of ICT – consistency in the use of ICT tools in fundamental and special training.

**Rule three** – the visualization of educational information is provided by the following principles:

1. Content principle – the training focuses on the use of visual means of displaying real objects and processes.
2. The principle of knowledge visualization – the implementation on the computer of an abstract concept, a visual-visual representation of the phenomena, laws under study.

**Rule four** – the professional and technical orientation of fundamental training is ensured by the following principles:

1. Principle of research activities – allows you to switch to active methods of education and

knowledge.

2. The principle of professionally oriented tasks – provides for the consideration of not only educational, but also practical and realistic tasks.

The above rules for the fundamental training of students, in our opinion, should be supplemented with the following technological principles.

I. Integrative principle of preparation in an information environment – it provides for the complex (taking into account logical-meaningful science links) nature of teaching subjects to students based on the use of a wide range of information resources and technologies.

II. Open teaching principle – it allows the student to define the form, methods, technology and means of teaching, including distance learning.

III. The principle of design " everything is for everyone" – refers to the "subject-object-subject" interaction between students and faculty[2].

**Conclusion:** In the context of educational informatization, the identified requirements for the modern methodological system for teaching engineers basic educational subjects lead not only to the search for new forms, methods and tools of teaching, but also to the search for new approaches to the formation of this system based on openness and mobility, which allows integrating various types of student activities within the framework of [1].

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