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PROBLEMS OF ENSURING CONTINUOUS MATHEMATICAL TRAINING IN TECHNICAL AND ECONOMIC HIGHER EDUCATIONAL INSTITUTIONS

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Abstract. In order to ensure the continuity of education, the stages of organization of continuous mathematical training, taking into account the specialty, were considered, the plan of continuous mathematical training was analyzed.

Keywords. Quality of education, continuity of education, continuous mathematical training, CMT stages, CMT plan, parts of the CMT plan.

At present, universal technologies are being developed all over the world to improve the quality of education, and various methods for their practical implementation are being created. In all educational institutions, a target system for improving the effectiveness of education and upbringing is being formed.

This system is aimed at ensuring that young people master perfect knowledge that meets world standards, educate them as people with high intellectual potential. The fulfillment of these honorable tasks is carried out in conditions when the processes of training decent personnel that meet international standards are being improved from year to year.

A special role in this is played by the problems of ensuring the continuity of education. Despite the fact that the topic of this article has a long history, it is obvious that the relevance in it in the complex of modern requirements is increasing.

In a number of higher educational institutions, a plan of continuous mathematical training (CMT) was drawn up and partially implemented in the 90s of the last century, which was subsequently not finalized as a result of changes in curricula and related regulatory documents.

Over the years, positive changes have been made in the learning process, and the attitude towards it has become even more serious. On this basis, it is advisable to raise the above topic in a modern interpretation, to increase attention to it.

The organization of the CMT should consist of three stages, taking into account the specialty, at which the problems of coordination between the general and natural sciences, as well as general education courses, should be solved.

At the first stage, there is an acquaintance with the mathematical needs of general education and special courses, as well as with agreed measures to satisfy them, while the departments of specialties for each course in the curriculum should look for answers to the following questions:

– what parts of mathematics that need to be taught, to what extent are necessary to study the course in question?

– what additional mathematical methods should be taught to a student in order to study the course in question (including mathematical approaches in journals, monographs in the specialty)?

– what is the degree of activity of using mathematical methods, as well as the presentation of the finished solution of the problem or ways to solve it in the course under consideration?

– who will provide training in the mathematical methods used in the courses?

– are the reasons for not using the mathematical methods necessary for a thorough study of the course in question due to a lack of knowledge among students or due to the fact that the teacher is not familiar with them enough?

– can the department teaching the course independently explain the necessary sections of mathematics or do you need the help of the department of mathematics?

– are mathematical methods, modeling and forecasting applied in course, final qualification works and master's theses?

– to what extent is modern information technology used?

– is the department of mathematics able to fully satisfy the needs of departments of specialties or is there an additional need to contact highly qualified specialists of research institutions?

At the second stage, it is planned to draw up an CMT plan for each specialty. The main goal of the plan is to systematize the requirements of general engineering departments and departments of specialties for mathematical knowledge and coordinate each course, taking into account the need for mathematics in topics, terms of study.

Thanks to this plan, teachers conducting special courses have the opportunity to widely apply mathematical teaching methods. This, in turn, increases the ability of students to form mathematical skills, the ability to apply them in practice.

In addition, one of the important tasks of the CMT plan is to create a strict system for the effective use of the mathematical apparatus in each course in the sequence of existing courses in the curriculum. Along with the fact that through the CMT plan, the cooperation of the departments of mathematics and specialties acquires a creative character, the necessary adjustments and clarifications are made to the work plans of these departments.

The CMT plan should contain information on which educational courses should take the baton of mathematical education in each semester, which sections of non-mathematical courses should use which of the various mathematical methods.

It is advisable that the CMT plan consists of an introduction and 5 main parts. The introduction provides the goals of the plan, features for each specialty, explanations of the plan, etc. Part 1 provides a list of courses that actively use math in the curriculum and information on their distribution by semester.

Part 2 covers the use of mathematics sections, the amount of time allotted for them, for which specialties they are needed. Part 3 provides ways to use mathematical methods: a) the ability to use the concepts covered in the course of mathematics; b) use through the introduction of new information.

Part 4 covers various options for using mathematical methods and models in general engineering and special courses. These sections and methods of mathematics are indicated taking into account which courses, when, on which topics and in which semester the curricula of non-mathematical departments correspond. Part 5 states that some topics that need to be used in non-thematic departments should be presented through multimedia means. Appropriate guidelines, analysis of computer results are indicated.

The third stage is to demonstrate the methods of practical implementation of the CMT plan and is the most difficult part of the plan. The main difficulty lies in the fact that teachers of the departments of mathematics and specialties are not fully prepared for the new version of the educational process, rebuilt in accordance with the CMT plan. At this stage, measures will be taken to overcome these difficulties and retrain teachers.

The development of the plan in compliance with the above stages is carried out in cooperation with mathematics and all departments that need it. The successful implementation of the plan depends on the scientific potential, interests and dedication of all departments involved in its creation.