



THE ROLE OF THEORETICAL MECHANICS IN TRAINING SPECIALISTS IN TECHNICAL FIELDS

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<https://doi.org/10.5281/zenodo.19049639>

Abstract

This article analyzes the importance of theoretical mechanics in the training of specialists in technical fields. It examines the role of interdisciplinary connections in improving the effectiveness of teaching general professional disciplines. Methods and approaches for integrating theoretical mechanics with engineering and technological subjects are discussed. The study emphasizes the importance of theoretical mechanics as a fundamental discipline for developing engineering thinking, solving technological problems, and designing reliable machines and mechanisms.

Keywords: theoretical mechanics, interdisciplinary relations, engineering education, technical training, design, technology.

Introduction

The development of modern society and the transition toward a knowledge-based economy require highly qualified specialists with strong theoretical and practical training. In technical education, fundamental scientific disciplines play an important role in forming professional competencies. One of such fundamental subjects is theoretical mechanics.

Theoretical mechanics studies the laws of motion and equilibrium of material bodies and serves as the theoretical basis for engineering calculations. It includes three main sections: statics, kinematics, and dynamics. Mastering these sections allows students to analyze mechanical systems, design engineering structures, and solve various technical problems.

Methods and Educational Approach

In the training of specialists in technical fields, theoretical mechanics should be closely connected with other engineering disciplines. Interdisciplinary integration improves the effectiveness of education and helps students apply theoretical knowledge in practical engineering tasks.

Teaching this subject requires modern pedagogical approaches, including problem-based learning, analysis of real engineering situations, and the use of modern technological tools. These approaches help students develop analytical thinking and the ability to solve complex engineering problems.

Discussion

In modern industrial enterprises, new technologies, materials, and automated production systems are widely used. This increases the demand for specialists who possess strong theoretical knowledge and the ability to adapt quickly to technological changes.

However, several problems remain in the teaching of theoretical mechanics. These include insufficient teaching hours for the discipline, limited interaction between universities

and industrial enterprises, and a lack of coordination between educational programs of different higher education institutions.

Addressing these issues requires improving the structure and content of the discipline, strengthening interdisciplinary connections, and enhancing cooperation between educational institutions and industry.

Conclusion

The study shows that theoretical mechanics plays a fundamental role in the professional training of specialists in technical fields. The discipline forms the theoretical basis for engineering design, analysis of mechanical systems, and development of modern technologies.

Including theoretical mechanics among the core engineering disciplines in higher education programs ensures the development of competent specialists capable of solving complex technological problems and contributing to the advancement of modern industry.

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