THE CURRENT STATE OF TEACHING THE DISCIPLINE "THEORY OF FUNCTIONS OF COMPLEX VARIABLES" AND ITS SIGNIFICANCE IN THE CONDITIONS OF THE CREDIT SYSTEM

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https://doi.org/10.5281/zenodo.10351650

Abstract. The study of the theory of functions of complex variables is an important task nowadays, as it finds application in various fields, including credit technologies. Changes in the requirements for its functionality are due to changes in the conditions of its application in the modern world. In this regard, teaching the discipline "Theory of functions of complex variables" should take into account modern requirements and focus on its application in real life.

Keywords: complex analysis, credit risk management, financial modeling, mathematical finance, quantitative analysis.

The study of the theory of functions of complex variables holds great significance within the modern educational context, particularly as academic environments shift towards credit-based systems. In recent years, there has been increased attention placed on the structure and delivery of this specific discipline within academic programs. Understanding the current state of teaching this complex mathematical theory is of paramount importance for educators and institutions as they seek to adapt to the evolving demands and requirements of the credit-based system.

Comprehending the underlying theoretical principles and practical applications of complex variables' functions is crucial for students pursuing a range of academic and professional paths, including mathematics, engineering, physics, and related fields. As such, the effective teaching of this discipline is instrumental in shaping the foundational knowledge of future professionals and scholars [2].

The significance of the theory of functions of complex variables within the credit-based system is underscored by its role in the overall academic progress and achievement of students. Given the credit-based framework's emphasis on efficient and transparent measurement of academic accomplishments, the effective teaching and learning of complex variable functions theory serve as crucial components in enabling students to acquire and demonstrate the requisite competencies aligned with credit requirements.

Efforts to assess the current state of teaching the theory of functions of complex variables should focus on evaluating the pedagogical methodologies, learning resources, and assessment practices employed in educational institutions. This assessment should also take into account the impact of technological advancements and their potential to enhance the teaching and learning experience in this domain. Furthermore, the integration of interdisciplinary perspectives and practical applications of complex variable functions theory can significantly bolster its relevance and appeal to students, ensuring its integration with varied academic pursuits and professional aspirations [5].

The implementation of teaching the theory of functions of complex variables within the credit-based system involves several key stages, which are essential to ensure effective delivery and understanding of the discipline. These stages may include:

1. Curriculum Design: The initial stage involves designing a comprehensive and structured curriculum that aligns with the requirements of the credit-based system. This includes defining the learning outcomes, course objectives, and assessment criteria, all of which should be in line with the credit-hour and credit-point system.

2. Pedagogical Approach: Educators should carefully consider the most effective pedagogical approaches for teaching complex variables, taking into account the diverse learning styles and needs of students within the credit-based system. This may involve the use of interactive lectures, problem-solving sessions, and practical applications to enhance student engagement and understanding.

3. Learning Resources: Providing suitable learning resources is crucial. This may involve selecting textbooks, academic journals, and digital materials that support the teaching and learning of complex variable functions theory. These resources should cater to the credit-based system's requirements and support students in achieving the stipulated learning outcomes.

4. Assessment and Evaluation: The implementation stage also involves developing robust assessment methods aligned with the credit system. This includes creating fair and transparent methods for evaluating student performance, such as exams, assignments, and projects, while ensuring that they reflect the credit hours assigned to the course [3].

5. Technology Integration: Incorporating educational technology and digital tools can enhance the learning experience and align with the modern demands of the credit-based system. Utilizing simulation software, online resources, and interactive platforms can facilitate the understanding of complex variable functions theory.

6. Faculty Training: Providing professional development opportunities for educators to enhance their understanding of the credit-based system's requirements and to refine their teaching methodologies for the theory of functions of complex variables.

7. Continuous Improvement: Regular review and refinement of the teaching approach based on student feedback, academic performance data, and changes in the credit-based system to ensure ongoing improvement and effectiveness in teaching this complex mathematical theory [1].

These stages collectively contribute to the successful implementation of teaching the theory of functions of complex variables within the credit-based system, ultimately supporting students in achieving their academic goals and acquiring the necessary competencies in the field.

Advantages of teaching the theory of functions of complex variables within the conditions of the credit system:

1. Structured Learning: The credit system provides a structured framework for organizing course content, assessments, and student workload, which can offer clarity and predictability for both students and educators.

2. Flexibility: The credit system allows for flexibility in designing the curriculum and learning outcomes, providing opportunities to adapt the teaching of complex variable functions theory to suit different student needs and learning styles.

3. Recognition of Effort: Credits provide a quantifiable measure of the effort required to complete the course, which can serve as a recognition of students' dedication and academic achievements in the discipline.

4. Transferability: The credit system often facilitates the transfer of credits between educational institutions, enabling students to continue their studies elsewhere if needed.

Disadvantages of teaching the theory of functions of complex variables within the conditions of the credit system:

1. Focus on Quantification: The credit system may lead to a focus on quantifying the educational process, potentially overshadowing the intrinsic value of learning complex variable functions theory [4].

2. Pressure for Standardization: There may be pressure to standardize the content and assessment methods to fit within the credit system, which could hinder the exploration of diverse teaching approaches and innovative learning experiences.

3. Potential for Overloading: While credits are meant to represent the workload, there is a risk of overloading the curriculum with excessive content to match credit requirements, potentially leading to superficial learning experiences.

4. Limited Emphasis on Mastery: The emphasis on credit acquisition may inadvertently diminish the focus on mastery and deep understanding of the theory of complex variables, as the primary goal may become meeting credit-hour requirements rather than comprehensive learning.

It's essential to note that the advantages and disadvantages of teaching the theory of functions of complex variables within the conditions of the credit system may vary across different educational contexts and institutions. Furthermore, effective implementation of the credit system can mitigate some of these disadvantages while capitalizing on its advantages.

Conclusion. The teaching of the theory of functions of complex variables is a crucial subject in higher education, with applications across various scientific and engineering disciplines. The significance of this discipline within the credit system lies in its ability to provide students with a solid foundation in a key mathematical subject while ensuring that the material is covered in a structured and manageable way. By aligning the curriculum with the credit hours assigned to the course, students are able to develop a comprehensive understanding of complex variables within the constraints of the credit system. This not only prepares them for further studies but also equips them with the necessary knowledge and skills for careers in fields where complex variables are essential.

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