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# Teaching methods for special mathematical disciplines in the senior years

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*The article outlines the issues of setting the content of special courses in higher mathematics for undergraduate students of technical specialties. We present the experience and innovations in teaching methods, based on using model calculations that include standard problems in educational process. We give sample calculations for the students' homework on the equations of mathematical physics, methods of optimization, discrete mathematics, probability theory and mathematical statistics. In particular, we describe the methodological impact of modern computer-assisted construction of the analytical solutions of mathematical problems on the students' learning process. We discuss the psychological aspects of the teachers' work with the students. The problem of improving the existing technology training is common to the disciplines of physical and mathematical profile and the higher school.*

**Keywords:** *educational process in university, Bauman Moscow State Technical University, special courses of mathematical disciplines, model calculations, methods of teaching.*

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