

Abstract of Contribution 152

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MS1: Modern teaching and didactics in mathematics and mechanics

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Basic concepts of didactics and examples of competence-oriented implementations.

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Higher education in general and especially in mathematics and engineering is facing major challenges. On the one hand, the steadily increasing heterogeneity of students has to be taken into account. On the other hand, professional requirements - both in academia and industry - have changed significantly in essential aspects within a short period of time. To cope with these challenges, the implementation of sophisticated didactical concepts is urgently needed. This paper therefore explains the basic concepts such as "constructivism", "learning objectives", "taxonomy levels" and "constructive alignment". Frequently, misunderstandings and hasty conclusions regarding the feasibility of these concepts occur. For this reason, this paper also aims to dispel these misconceptions and to present and discuss concrete examples. These examples include, among others, the targeted reduction of the previous teaching content and the reorientation of various focal points, e.g., to the integration and use of computer programs and programming languages.