



Using competence-based and project-related approaches to support students individually – An engineering science experience report

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The recent education of engineers, using the example of satellite geodesy at the Geodetic Institute of the University Karlsruhe (Germany), is still suffering from time pressure as well as from heavy curriculum content loading. Within this education field, where the academic teachers have to fulfill high requests from the new generation of students as well as from industry and from research institutions respectively, advanced satellite geodetic knowledge has to be transferred effectively and sustainably.

In order to enable the students to train newest aspects related to satellite geodesy as well as important key competences, e.g. capacity for independent and academic work, reflection and evaluation skills, presentation skills, an innovative teaching concept was developed, tested, and evaluated. This teaching concept makes use of very different teaching techniques like portfolio assignment, project work, input from experts, jig saw, advance and post organizer. The concept will be presented and discussed in detail.