Foundations for a new type of Design-Engineers: Experiences from DTU

Since 2002 a new design-engineering education has been organized at the Technical University of Denmark. It fulfils most of the requirements in the CDIO concept but builds in addition on a change in what is considered core disciplines in engineering as three fields of knowledge are represented almost equally in the curriculum: natural and technical sciences, design synthesis and socio-technical analysis. Combined with an integration and co-ordination of disciplines, a series of projects providing a progression of challenges to the students learning, and a focus on the outcomes of the learning processes of competences needed in design engineering, the curriculum represents a radical innovation in engineering curriculum. The paper describes the background as well as the foundational elements constituting the educational program and presents an assessment of the key factors that has made it attract new groups of students to engineering. An evaluation has been carried out based on their own and their employers experiences. This supports the visions build into the curriculum and adds important components to what might be needed to carry out reforms in engineering education.

General information
State: Published
Organisations: Innovation and Sustainability, Department of Management Engineering, Engineering Design and Product Development
Contributors: Jørgensen, U., Brodersen, S., Lindegaard, H., Boelskifte, P.
Number of pages: 346
Pages: 275-286
Publication date: 2011

Host publication information
Title of host publication: Proceedings of the 18th International Conference on Engineering Design: Impacting Society through Engineering Design
Volume: Vol.8 Design Education
Publisher: Design Society
Keywords: Multidisciplinary, Socio-technical competences, Engineering education, Design
Source: orbit
Source-ID: 285819
Research output: Research - peer-review: Article in proceedings – Annual report year: 2011