CDIO-Concept for Engineering Education in Mechatronics

Danish experimental results of a research and developed CDIO-Concept, and an approach for active and integrated learning in today’s engineering education of MSc Degree students, and research results from using IT-Tools for CAE/CAD and dynamic modelling, simulation, analysis, and design of mechatronics solutions with fluid power actuators for motion control of machines and robots. The idea of CDIO-Concept is to take care of that the students are learning by doing and learning while doing when the students are active to generate new products and solutions by going through the phases from Conceive, Design, Implement and Operate related to en product design by them self in competition with others. The idea is based on the Danish implementation of a CDIO-Concept. A curriculum at Aalborg University, and Technical University of Denmark, offers courses for Motion Control, Fluid Power within mechatronics design, and advantages as well as challenges are identified and discussed. An IT-tool concept for modelling, simulation and design of mechatronic products and systems is proposed.

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