Active learning in engineering design education by linking the digital and physical domain - DTU Orbit (27/07/2019)

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This hands-on session in the Design Studio of Copenhagen University College of Engineering (IHK) demonstrates how state-of-the-art hard- and soft-ware equipment for 3D laser scanning and rapid prototyping is used to enhance the motivation and engagement of students of the engineering design process. At IHK industrial and engineering design is becoming an integral part of the ordinary study program of Mechanical Engineering, the International Design Semester program, and the International Summer School of Design and Development. As an integrated element of the study programs students are solving real world design problems from industry by going through a full CAD/CAM circle (measuring, drawing, simulation, testing, and manufacturing) from a physical object (handmade or otherwise made available) through hand-held 3D laser scanning of the object, refined definition and modification of the object geometry in 3D computer programs and finally print out in a 3D printer or manufacture on a CNC machining center. A number of real world design cases will be demonstrated e.g. design configured to man-equipment interface, spectacular combinations of different products to a new product and also simple redesign of existing products. The participants will have the opportunity to get a hands-on experience with the involved equipment and also talk to students working in the Design Studio.

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