

## **Embedding Corporate Social Responsibility in Engineering Education through Project-Oriented Courses**

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In a continual effort to promote the principles of innovative education through project-oriented learning and international cooperation, the chair of Assembly Technology and Factory Management of the Technical University of Berlin offers, under the direction of Prof. G. Seliger, several project-oriented courses, such as Production Technology Project, Global Product Development, and Global Engineering Team, where students work on research-based projects in international teams with partners from Brazil, South Africa, South Korea and the United States.

The initiative *Global Research for Industrial Development in Sustainability (GRIDS)* has been introduced by the chair to integrate the idea of corporate social responsibility into their engineering education as well as to address the global need for increasing regional development in sustainable, customer-oriented products, processes and production systems by uniting the core values of educational institutions through the integration of world class engineering and local communities.

GRIDS is an aligned course which both moderates the meaning of sustainability in a theoretical way and creates a defined space in which groups of students can develop a solution to a specific problem statement. Giving the students a realistic problem statement motivates them to develop solutions-based approaches to solve the problem. Groups are composed of different cultural and social backgrounds to ensure that the work on questions of social matters includes different perspectives. To shorten the process of problem finding, it cooperates with organizations whose aims correspond to the goals of the course. Non-governmental organizations, as well as companies willing to broaden their field of expertise, contribute by providing technical support.

*Global Product Development (GPD)* is a joint project-oriented course of the Technical University of Berlin, Germany, the University of Michigan, Ann Arbor, USA, and Seoul National University, South Korea. The main objective of the course is to enable students to develop products through global collaboration. Engineering design and project-related knowledge is taught via video conference as well as in a one-week long presence workshop. The solution space is narrowed down through a project definition including product classes and/or market segments, such as “learning instruments for engineering education which demonstrate engineering principles to pupils”, “internet-ready products for enabling sustainability,” and “unique physical product which enables social business by satisfying real customer needs”.

*Global Engineering Teams (GET)* is a joint master course of the Technical University of Berlin, Germany, the University of Stellenbosch, South Africa, the University of São Paulo, São Carlos, Brazil, the Educational Society of Santa Catarina, Joinville, Brazil, the University of Botswana, Gaborone, Botswana and the Pontifical Catholic University, Santiago de Chile, Chile. GET aims to develop technical competences as well as teamwork and digital cooperation skills of students with different technical and cultural backgrounds by engaging them in challenging projects provided and partially sponsored by industrial partners.