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Introduction of Problem Based Learning to Mechanical Engineering Curricula



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Project information

Starting date: 18/5/2009
Termination date: 30/4/2012
Institution: Brno University of Technology, Brno, Czech Republic
web: <http://opvk22.umt.fme.vutbr.cz/>

Project description

The project aim is the innovation of several bachelor's and master's programmes forming the basis of the machine and industrial design study at the Faculty of Mechanical Engineering of Brno University of Technology to augment the assertion of the graduates on the labour market. In accordance with the survey of needs and international experience, the innovations should move the educational process from instructive to constructive type of learning. There are many types of activities that are included in these innovations of study programs. Especially, the most important improvements are the *Problem Based Learning* (PBL), practical and laboratory forms of education and *soft-skills* training and development. The dialog with the academia, scientists, industrial establishments and other institutions is included as a part of the project solution.

Problem-based learning (PBL) is a student-centered instructional strategy in which students collaboratively solve problems and reflect on their experiences. The basic characteristics of PBL are small collaborative groups of working students and driving of the learning by challenging and open-ended problems. Accordingly, students are encouraged to take responsibility for their group and organize and direct the learning process with support from a tutor or instructor. PBL can be used to enhance content knowledge and foster the development of communication, problem-solving, and self-directed learning skill.

The trends discussed above are included in the innovations of the bachelor's and master's programmes *Applied Computer Science and Control, Machine and Equipment Construction, Mechatronics, Production Machines, Systems and Robotics, Constructive Engineering and Engineering Mechanics and Biomechanics*. The cross-disciplinary field of activity is covered by the applicant team composed of lecturers, scientists and specialists of the Faculty of Mechanical Engineering, Faculty of Electrical Engineering and Communication and other specialists.

Partners

Honeywell spol. s r.o., ŽDAS a.s., UNIS a.s., Siemens Electric Machines s.r.o., Slováké strojírný a. s.



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