

# COMPETENCES FOR THE FUTURE – AN IMPORTANT ELEMENT IN THE ACTIVITIES OF THE FEM PUT



**T**he question of how to prepare the new generation for entering the job market is still topical. In this rushing and dynamically changing world it is hard to quickly tell who is a professional with a potential for the future. A person's competences encompass knowledge, executive skills, experience, and the approach to the tasks being implemented. However, can declarations and recommendations be trusted? Maybe it is better to train the required professionals in company, using its own resources. This invokes a number of questions: what kind of knowledge should be communicated and how, which technologies should be taught in practice, and how can you influence future employees so that they will always be able to take a constructive approach to tasks and problems?

Currently many researchers emphasise the need to prepare workers for Industry 4.0. It is crucial to be fluent in IT technologies, making use of the possibilities offered by the Internet, but also to be familiar with state of the art technical solutions in the field of process automation and the transfer of knowledge on the applications of materials with newly discovered properties.

There is market pressure for creating new infrastructure, designing new products, and distributing them in a more competent and effective way, and also to ensure friendly maintenance services. This means that contemporary specialists should present a broad range of skills.

At Poznań University of Technology (PUT) the issue of availability and transfer of new technologies has always been regarded as a priority. At the beginning of the 21st Century a growing degree of technological exclusion resulting from the rate of development was observed. Thus, at the initiative of the employees of the Faculty of Engineering Management (FEM PUT), in 2006 the Technical Knowledge Accelerator (AWT©) was created, and has operated at Poznań University of Technology ever since. Thanks to the Accelerator, in cooperation with the Marshal Office of the Wielkopolska Region, a number of laboratories were created to enable students of technical secondary schools to stay in touch with state of the art technologies and to be better prepared for the professions of the future. The research projects implemented so far have demonstrated that in addition to professional abilities there is a demand for transversal competences, which are universal, and do not depend on the level of technology, or the sector. Their combination with professional competences forms a basis for social cooperation, as generally in every situation an individual should show:

creativity (manifesting itself in the will to create, readiness to take up new challenges, willingness to solve problems, and improve products and processes as well as work and living conditions),

team work (associated with readiness to work together, and co-operation and synergy, regardless of whether the cooperation is virtual or direct),

communicativeness (i.e. adjusting to the local communication methods, also in the technological and procedural senses),

entrepreneurship (associated with the willingness to earn individual financial surpluses and the pursuit of prosperity).

Despite the common belief (also confirmed in the studies carried out on enterprises) that transversal competences are necessary, the problem of their effective and efficient communication in the education process still remains. Such methods are being developed at the FEM under the ERASMUS + Strategic Partnership:

"The acceleration method of development of the transversal competences in the students' practical training process" 2015–2018 (Finland, Slovakia, Slovenia, Poland),

"Entrepreneurship and Communication in Multicultural Teams" 2016–2019 (Belgium, the Czech Republic, Finland, France, Germany, the United Kingdom, Poland).

Practical skills – an important component in the competences of FEM students – are developed during project classes, often run directly in companies. For instance, future logistics engineers present their assignments prepared in teams in the form of simulations of designed processes, created with the application of the latest FlexSim software during the annual Gala, organised every June. The audience, usually consisting of around 300 people and constituting the competition jury, includes not only other students, but first of all representatives of companies for which the projects are created. With such an approach there is no doubt that the presented solutions are useful, and that they in fact solve specific problems experienced by enterprises. The Gala also usually features a debate with honorary guests. So far, since 2000, these included professors from the University of Windsor Canada and the Mississippi State University, representatives of FlexSim from France, and the developers of the software from the US, and, in 2018, a delegate from the Ministry of Entrepreneurship and Technology.

The Faculty of Engineering Management Poznań University of Technology, by educating management, logistics and security engineers, not only communicates knowledge to students, but also convinces them that problems are made to be solved, and that the University's graduates know how it should be done.

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