
Strategic Partnership Erasmus+

Improvement of innovative teaching methods in the fields of Technology and Chemical Engineering according to the best standards of the Bologna Process

Chemical engineering and technology are the foundation of innovative fields such as: nanotechnology, biotechnology, and also modern technologies of medicine production. The growing demand for innovative products makes the demand for chemical engineering and technology specialists growing as quickly as the development of our civilisation. To fulfil these requirements, it is necessary to analyse and improve the effectiveness of higher education of the graduates majoring in Chemical Engineering and Technology in Europe.

The strategic aim of this project is the development and implementation of the unified module of English courses into the curriculum of Chemical Engineering and Technology according to the Bologna process and the best practices created by the project members which are formed by the universities from member countries. The Project Coordinator is Cracow University of Technology, Poland, and three partners are: Muenster University of Applied Sciences (FH-MS), Germany, National Graduate School of Engineering Chemistry of Lille (ENSCL), France, and The Polytechnic Institute of Bragança (IPB), Portugal.

The partnership will enable the development of novel IT educational tools and an online cooperation platform where the students will be able to learn, teach and co-create the content of the novel courses in Chemical engineering and technology. Moreover, the teaching component will be strengthened by the organization of 1 conference at the end of the project as well as 3 short-term joint staff training events. At the end of the project and EU funding, the developed modules of courses will be introduced into regular curriculum and will be accessible for all interested parties on an e-learning platform (open educational resources).

Major advantages of the e-learning platform are: asynchronous, convenient, and self-paced learning (especially if students have other commitments), easier communication between the students and tutors from different partner countries, selection of a preferred method of learning, time-saving (attending the place of education is not necessary; students do not have to leave their daily routines), and also adjustment to the personal needs of every participant. Additionally, the online courses will be organised in a way that will enable the testing of tools developed by the partnership of students and tutors. Trainings of joint staff will also enable the education of the tutors with regard to the utilisation of these tools.

As results of this project we expected to receive the following results :

a) the results achieved during the project:

- (i) Innovative and international academia cooperation model consisting of representatives of the four partner universities,
- (ii) the acquired knowledge and experience of project participants,
- (iii) greater cooperation and mobility skills in an international environment,
- (iv) improving language skills and communication skills,

b) the results achieved at the end of the project:

- (i) new educational offer tailored to the expectations and requirements of the job market for all partner universities,
- (ii) developed online courses available on the e-learning platform for Technology and Chemical Engineering (Open Educational Resources),

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- (iii) development of e-learning platform in English,
 - (iv) other educational materials.

As the impact, the project will attract more international students from EU and other countries for existing international M.Sc. programme in Chemical Engineering and Technology. Due to the improved self-learning and collaboration components, barriers between different groups of students (domestic, European, international) will be reduced. The existing scheme for double graduation at all the partner universities will be strengthened and may be expanded with further partners. For other stakeholders like companies the project increases their link with the European students and enhance the possibility to recruit graduates with a better and updated background knowledge to reinforce their European and international dimension. For National Agencies and European Commission the project will contribute for the success and visibility of the new Erasmus+.

The courses produced and validated along the project lifetime will be available at the website of all the member universities which means that the public will have free access to it. Moreover, all the member universities will ensure availability by integration of the results into regular course work/curriculum to ensure their sustainability. Since these courses are part of double graduation processes at all the member university, students will automatically use these elements. The courses will be based on the current knowledge to meet the requirements of future employers from the European and global labour markets.