

2006-2028: EUROPEAN APPROACHES TO PREPARE STUDENTS FOR INTERNATIONAL PRACTICE

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European approaches to prepare students for international practice

Abstract

The contribution focuses on various activities undertaken in Europe in the context of the Bologna process and in addition by the European Union (EU) to promote mobility of students and graduates and to prepare them for a European and global labour market and an international practice. The activities comprise respective political frame conditions and financial support schemes as well as program developments at Universities attempting to strengthen internationalisation and global education.

The demand for global education

For engineers to work in an international context will become a common if not predominant dimension of their professional life. In the majority of cases it will not even require to go abroad. It can take various forms: working with international companies, collaboration in international teams (increasingly web-based), designing, manufacturing and marketing products and services for international markets, dealing with customers from foreign countries, managing international projects or an international workforce. Applying for a job and professional career in a foreign country may become an option for many professional engineers. In order to be prepared for the various kinds of an international practice and to be competitive on international job markets engineering graduates and professionals need to develop a range of additional competences. Besides foreign language abilities it comprises intercultural competences, abilities to collaborate in international teams or function as manager in international companies or projects based on appropriate leadership skills. In addition, applying for a job or professional career abroad requires mobility and the sensitivity and ability to adapt to new work, social, political and cultural environments. Life long learning abilities and appropriate attitudes will be indispensable.

Europe is a continent of many nations, languages and cultures. After world war II European countries started the process of collaboration, harmonisation and integration, beginning already in 1955 with the Treaties of Rome. Since that time Europe has increasingly promoted students, graduates and the work force in general to be prepared for an internationally oriented practice and at least a common European labour market. Strengthening the global competitiveness of Europe in general and of the European Union in particular the activities shifted more and more from “Europeanisation” towards a global focus. The European Union in cooperation with its meanwhile 25 member states increased its activities to prepare students and graduates for an international practice and to attract students from abroad to study and do research in Europe. In addition, the Bologna process, agreed on and supported by meanwhile 45 European governments, since 1999 aims to facilitate mobility and recognition of graduates and to arrive at a common European Area of Higher Education (EHEA) by 2010. The European Association of Universities (EUA) and other associations like e.g. the European Society of Engineering Education (SEFI) are strongly supporting the various measures and activities. The Universities as the main stakeholders in this process increasingly perceive and include internationalisation and global education of their students as part of their mission and a dimension of their competitiveness. With a wide range of curricular and other measures they try to prepare their students and graduates for an international practice.

European Union: Promotion of foreign language learning and studying abroad

Foreign language learning as one essential for preparing students for an international practice is a common feature of secondary and even primary school curricula in most of the European countries. At least one, often two foreign languages are required. Additional modules may be offered or required at higher education level. This does not necessarily involve studying in a foreign country.

The European Union contributes with a variety of measures to the promotion of student mobility, in particular with different programs to support students taking semesters, internships, foreign language courses etc. abroad. Universities are encouraged and financially supported to develop joint programs and to host staff from partner universities for curriculum development and lecturing. Already in 1976 the EU started to support student exchange within joint program agreements. In 1987 the so called ERASMUS program was started aiming to increase the number of students going abroad for a certain time of their studies. With the SOCRATES I program from 1995 to 1999 and the SOCRATES II program from 2000 to 2006 with a subset of various initiatives including ERASMUS the activities were significantly increased supporting not only foreign language learning and student mobility but also additional measures like the creation of subject oriented Thematic Networks of Universities in order to promote transparency and recognition, the development of common standards of outcomes and of joint programs. The development of a common European Course Credit Transfer System (ECTS) was initiated and its implementation encouraged. In addition, with the LEONARDO program focusing on vocational education it was possible to financially support students applying for internships abroad. This corresponds to the requirements of for example German Universities where in engineering education internships of 26 weeks up to even 1 year constitute an essential part of the programs of study. Mostly it is welcomed and recognized when these internships are taken in a foreign country.

The general aim of the EU is to arrive at least at 10% of the European students to go abroad for a certain period of their study. It is required that these phases should not only be a nice experience of a foreign country and culture but that they fully contribute to global education and the aims of a certain program, in other words be credited and fully recognized by the home universities. The 10% benchmark has not yet been achieved but will continue to be on the agenda for the new SOCRATES/ERASMUS program starting in 2007. Whereas in general the 10% is not achieved currently there are countries, universities and subject areas like engineering where a much higher participation rate can be observed. This applies in particular to Universities which inserted a study abroad period as a compulsory part of their programs.

The Bologna Process: Facilitating mobility and recognition of learning outcomes

Internationalisation and promotion of student mobility is one of the driving forces of the development of the European Higher Education Area (EHEA) by 2010. This is the aim of the so called Bologna process which started in 1999 by the Bologna Declaration and was signed by meanwhile 45 European countries. The process embraces 10 different objectives or measures. The implementation of a common three cycle reference structure for higher education is the most challenging task for many European countries so far using systems with long cycle programs leading directly to a master level degree. Studying in a foreign country for a certain time shall be facilitated by this common three cycle structure of the higher education system comparable to the bachelor-, master-and doctoral-degree structure in the UK and countries outside Europe. A Qualifications Framework for Higher Education with a set of

qualitative and quantitative standards including a commonly shared description of necessary generic learning outcomes at the end of each level together with a common Credit System (ECTS) shall improve transparency and guarantee mutual recognition of programs and degrees including study abroad periods. It is expected that horizontal and vertical mobility of students will be significantly increased. Hopefully students will take the opportunity to prepare for an international practice and compose their individual program of study, fully recognized by their home universities and including one or two study abroad periods. The periods or modules available may be foreign language courses, credited summer courses, a full semester or year of study abroad, internships in companies or research institutes, joint international project work..

However, as it is far from certain that students to a satisfactory degree decide to gain international experience and intercultural competences many universities tend to look for university partnerships and for joint programs whereby student exchange or study abroad phases are compulsory elements of a certain curriculum. Within the Bologna process the promotion of joint or double degree programs became part of the policy of improving mobility based on experiences which have been gained even before the Bologna process started, e.g. in double degree programs between French and German or Dutch and German Universities. The European Union has recently started the so called ERASMUS MUNDUS program where outstanding European joint master programs offered by consortia of three or more Universities from different European countries shall attract not only European students but to the same extent students from outside Europe. These programs require students to go abroad and study at least at two foreign Universities. After usually two years of successful study following a bachelor degree they receive a Joint European Master Degree..

Strategies and developments of Universities to prepare for international practice

On a national and institutional scale many additional measures are under way to attract or even force students to gain international experience. Besides of additional grants and social support and guidance it comprises curricular offers or requirements like semester or internship abroad, joint degree programs, partnership agreements for student exchange. Certain Universities have started to highlight their international orientation as part of their mission. They are trying to use it as an asset for their reputation and the competition for outstanding students.

Increasingly Universities in Europe are looking for adequate partner Universities abroad for agreements on student exchange or the development of joint programs. Currently the focus of interest is not just on European partners but more and more on partners in China, India and Latin America. First double degree programs between German and Chinese Universities have been established recently. But also the partnership and collaboration with Universities in the USA is continuously and even increasingly welcomed, based on the assumption, that with the shift to a comparable structure of higher education with undergraduate and graduate programs student exchange and joint programs may be facilitated. In a pre-conference to the ASEE 2006 Annual Conference the German Academic Exchange Service (DAAD) will investigate the possibilities of developing joint programs in engineering education between Universities in USA, Canada and Germany in addition to traditional study abroad offers.

However, the majority of students still prefer to start and continue their studies at their home University. But also these students need to be prepared for an international practice. More and more Universities and faculty are concerned how to contribute to this aim. A first step seems to be a broader outcomes oriented definition of the competences Universities intend to

achieve by their program offers and educational provisions towards a first or second cycle degree. It has to include abilities, skills and attitudes which favourably can contribute to an international practice in its various facets. Following these definition of necessary or intended learning outcomes appropriate teaching/learning arrangements have to be provided including respective assessment procedures.

Traditional offers embrace subject related courses in a foreign language, modules to develop intercultural competence, hiring staff from foreign countries either on tenure or as guest lecturers, exploring the advantages of an international student body in tutorials, language learning and extra-curricular activities. More demanding approaches comprise cooperation with companies and research institutes abroad on research or thesis work and, increasingly, international student project work using web based and other modern communication technologies. One example is a cooperation of the Technical University Berlin with the University of Michigan, Ann Arbor, and the Seoul University in the area of “Global Product Development” where students in mixed international teams develop a product, starting with a one week face to face interaction, followed by three months of web-based collaboration and finally a one week meeting for the discussion and presentation of the products. Similar examples of good practice from different European Universities are available. It can be taken for granted that more and more Universities will enhance their curricula and teaching/learning environments to ensure a global education and prepare the engineering graduates for the cultural diversity and various forms and contents of an international practice.

Bibliography

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