

2nd ENAEE Conference

EUR-ACE®, the European Quality Label for Engineering Degree Programmes: Impact and Perspectives

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The Professionals involvement in the Accreditation of Engineering Studies

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Summary

The Engineering Institute of Spain (IIE) considers absolutely necessary, for Spain, the voluntary accreditation of the academic programs in the universities of engineering (technical schools or faculties) and, therefore, the IIE has been working for several years for the establishment of an authorized Spanish agency according with the ENAEE requirements, for the implementation in our country of the accreditation of the EUR ACE System for engineering training

After a complex negotiation, the IIE and Spanish National Accreditation Agency (ANECA) have formally agreed to develop the said agency. It has been already sent to ENAEE the corresponding application, as it is intended that the Spanish Agency would be operational as soon as possible in 2014

Then, it is exposed the IIE involvement in the Spanish Agency and it is commented some practical issues both at academic as professional level

Finally, it suggests the desirability of organizing by ENAEE a similar system EUR ACE for accrediting individual European professional engineers

Text

The Engineering Institute of Spain (IIE) started more than 100 years ago, gathering the Associations of nine (9) Engineering professional branches; Mechanical, Civil, Telecommunications, Agricultural, Forestry, Electrical, Mining, Aeronautical and Naval.

For more than three years, the IIE is working on and developing a Spanish Authorized Agency to award the EUR-ACE label, which finally we have achieved, forging an alliance with the Spanish Accreditation Agency ANECA,

As we have explained several times in ENAEE, this alliance, has required long time to solve a series of problems for the new agency: formed by a public organization with purely academic spirit (ANECA) together with a private organization purely professional (IIE), combining properly the structure and the means available to develop new Spanish Agency within the efficiency promoted by ENAEE, and finally, considering the territorial organization of Spain

The IIE has a huge potential of well-trained engineers in all branches and specialties of engineering to cover as professional evaluators the needs to form the Evaluation Panels and the Evaluation Commissions Evaluation of Spanish Agency "ANECA" (with the agreement with the IIE) when it is duly authorized by ENAEE. In any case, obviously, the evaluators will be properly approved for the EUR ACE accreditation

In addition, IIE representatives will participate, with the same number of representatives than ANECA in the High Commission of the agency, the technical commission and the Commission of Appeals. The IIE will represent the Spanish Agency ANECA in ENAEE

The IIE is extremely concerned, as professional engineering institution, by the entry into force of Bologna system, with the maintenance in Spain of the high level of academic training achieved so far, both in the formation of the Long Cycle Engineers as the Short Cycle Engineers,

The Bologna system breaks the outline of the two cycles that came running fine in Spain, for over a century and entered a continuous system degree / master in which both titles begin with the same academic training, however for the degree training, technical schools and universities short-cycle engineering and long cycle have, in theory, the same category as training institutions and, unfortunately, in many cases, it is a real blunder for the lack of well prepared teachers as well as for the absence of technical means necessary to achieve the degree (probably, this is what may have happened in other countries, especially, in southern Europe)

Moreover, we must not forget the important level of autonomy that universities have in Spain, which makes, even more complex, the quality control of programs and media, as well as the qualifications of masters. Many masters titles have an important technical base, but others (specialized) may have more interest in obtaining a "title" than a proper technological base

The IIE therefore considered absolutely necessary the EURACE accreditation of academic programs for engineers training for having a transparent information about what are the technical schools and engineering universities accredited and what not, both in grade level and in master level.

The purpose of any technical university shall be to prepare their students for becoming capable of carrying out the Society needs and increase the quality of life of their citizens.

The better preparation, the more successful shall be the University to continue his activity.

A problem in many countries is the endogamic character of the universities that sometimes it may create a separation between the academic and the professional world

I remember an old joke of my students days: at the beginning there was, by accident, a professor expert on a hidden science, with such mastery that many students were engaged and specialized in the science.

When the times goes, they went to the real world and not finding the way to survive on its application, they turn back to the university to keep teaching the hidden science and ensuring the survivability of the full cycle.

Apart from the joke, we have to be open minded, and capable to adapt to the new circumstances.

Thank to ENACE, the professional organizations are deeply involved in the European Accreditation procedures.

The engineering studies are a mix of a strong basic science mathematics, physique & chemical base, followed by the so important basic engineering matters; elasticity and strength of materials, fluid mechanics, thermodynamics, hydrodynamics, electricity, etc...

Finally the matters related with the engineering projects covering all incorporated disciplines; structure, architecture, electrical, instrumentation and control, cooling and heating, safety, etc

If the basic science matters can be taught by their specific professions or engineers, and the basic engineering matters can be taught by academic engineers, the applied engineering matters require “in exercise professionals with the know-how acquired in the development of their careers.

Such statement may be not agreed by some academics but it is paramount to reach our targets.

The process to accreditate EURACE in Spain has been arranged between the Spanish Quality and Accreditation Agency (ANECA) together with the Engineering Institute of Spain (IIE).

The IIE will provide the professional assistance to ANECA with the purpose to insure that Eurace will grant the Excellency to the engineering studies, insuring that the studies plan, professors, labs and learning level reached has the quality required for the already existing professional European open market.

I would like to address in this forum a very important issue regarding the European professional market.

We all know that the engineers are able to move worldwide and easier in Europe, with the only comment that if your university is accredited, you may have more opportunities in the destination country.

At such respect, EURACE is clearly the way to solve the problem.

However, we all know that the possibility to work does not mean that you can sign projects at least in many countries.

Brussels laws indicate that any engineers shall be able to sign in all Europe the projects that he can sign in his own country, except if there is any particular concern.

Most of the times the Engineers Associations are the organizations granting the experience needed to sign a project.

In a few cases, there are no an additional proof experience and the insurance companies will define who can sign and such is again granted by the engineering association.

It is simple, but there is a lot to do to insure a proper understanding by the authorities.

To simplify the above professional problem, I would ask ENAEE that it could develop an European accreditation system for individual professionals in a parallel form as ENAEE has developed the EURACE system for engineering academic programs. In such case, the National Engineering Organizations, fulfilling the necessary requirements could be the accreditation agencies