
The Future of Engineering Education and Profession in Europe

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Positive and negative impacts of the Bologna process on European engineering education

- Positive in the view of an employer:
 - More transparency
 - Better information about engineering programmes in other countries
 - Diploma supplement
 - Module descriptions
 - Programme outcomes often accessible via internet
- No negative impacts in general
- Negative especially in Germany:
 - The „loss“ of a well known degree: Diplom-Ingenieur

Have we reached the final objectives for the European convergence on graduate outcomes and on the professional training framework? What are the hindrances?

- I don't think, that we have reached the final objectives for convergence
 - There still exist some gaps
- We made good progress:
 - EUR-ACE[®] Framework Standards and Guidelines, last revised 2015:
 - Europe-wide definition of engineering programme outcomes
 - Several international and national subject specific guidelines:
 - EFCE Bologna Recommendations (Chemical Engineering Europe)
 - VDI-GVC Qualification Framework (Chemical and Process Engineering Germany)
 - Both of them referring to EUR-ACE[®]
 - Some examples without any reference to EUR-ACE[®] :
 - IChemE Accreditation guidelines 2016
 - UK-SPEC 3rd edition 2013

In a global market of Higher Education and of jobs, is the concept of “European Engineer” meaningful, needed ...?

- I don't know, what does it mean: “European Engineer”
- In case the term „European Engineer“ means a title or degree: no
- If it means a set of qualifications typical for engineers in Europe: yes

Common objectives for the institutions: Faculty, Professional engineers organizations and QA agencies

- To make EUR-ACE[®] a success:
 - By referring to the EUR-ACE[®] Framework Standards and Guidelines when defining the outcomes of an engineering programme (Faculty, PEO)
 - By advertising for the EUR-ACE[®] Framework Standards and Guidelines (PEO)
 - By asking for EUR-ACE[®] labels for their programmes, also if they had undergone a systems accreditation
 - By making sure, that EUR-ACE[®] master labels are awarded only to real master programmes (students finally having 270 – 300 ECTS credits equal to 6.750 – 9.000 hrs workload), not to so-called “master” programmes with only 240 country-specific credits and students finally having only 4.800 hrs workload (ENAAE, QA agencies)
- Employers must be able to rely on EUR-ACE[®].