



Quality Assurance for EIT Degrees

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To say what I am going to say...

- ① **Setting the stage**
 - ① The case for sectoral and branch specific descriptors
- ② **What I bring to you Today**
 - ② Two conceptual issues
 - ② View Qualifications Frameworks in three layers
 - ② Bring in field-specific QF and QA approaches
 - ② Topics for the questions raised by the organizers
- ③ **After hours...**
 - ③ A case study of engineering / chemical engineering presenting the integrated/vertical vision of QF

Setting the Stage

I - Keywords Characterizing Issues at Stake

- ☞ Within Europe - **COOPETITION = COOPERATION + COMPETITION**
- ☞ Keywords - **MOBILITY** and **ACCREDITATION**
- ☞ On the end of the day, the name of the game is **BUILDING TRUST**
 - ✓ **MOBILITY AND COOPERATION** require professional recognition
 - ✓ **Professional recognition** requires **TRUST**
 - ✓ **TRUST** requires transparency and readability of structures and professional qualifications
- ☞ Such is achieved through
 - ✓ **COMPARABLE QUALIFICATIONS FRAMEWORKS**

And

 - ✓ **QUALITY ASSURANCE PROCEDURES ACCEPTED BY STAKEHOLDERS**

Setting the Stage

II - Relevance of Sectoral and/or Branch level Frameworks

Taken from the Leuven/Louvain-la-Neuve Communiqué -
29 April 2009

“ ...
Curricular reform will thus be an ongoing process leading to high quality, flexible and more individually tailored education paths.

Academics, in close cooperation with student and employer representatives, will continue to develop learning outcomes and international reference points for a growing number of subject areas
... ”

What I bring to you Today

I - Conceptual issues

(I) Qualifications Frameworks at three different layers

- ☞ High level descriptors - Meta Frameworks
 - ✓ Characterized at institutional level of governments and stakeholders
 - ✓ They represent the 'legal crust'
- ☞ Complemented by Sectoral descriptors
 - ✓ By area and specialty
 - ✓ In close cooperation with higher education institutions and professional associations
 - ✓ In transnational cooperation
 - ✓ They represent Bologna in practice
- ☞ Complemented by descriptors at branch level
 - ✓ Typically developed in Education Working Parties and Academic Consortia, at European Level, or within regulatory bodies at national level
 - ✓ They are the basis for credibility of the whole system

What I bring to you Today

I - Conceptual Issues

(II) Field-specific QF and QA approaches are required

- ☞ Reference document for QA - The ESG - European Standards and Guidelines for QA in Higher Education (Bergen 2005)
 - ✓ Lead to general QA procedures - More attention to the educational process than to the learning outcomes
- ☞ Field-specific vs. General QA approaches
 - ✓ The choice is not '..Either .. Or', but rather '... how to best combine..'
- ☞ It is Today widely recognised that "the relationship between qualifications frameworks and quality assurance is crucial the key point is to further develop descriptors for subject specific knowledge competences and skills..."
- ☞ Field-specific QA align the goals of education programmes with the expectations of the relevant stakeholders from the point of view of ensuring relevance for the labour market

What I bring to you Today

II - Topics for the questions raised by the organizers (I)

- ☞ **Specific tools required ?**
 - ✓ Programme accreditation through recognised systems that adopt sensible field specific descriptors
- ☞ **Are the regular HE QA procedures sufficient from the point of view of EIT's objectives?**
 - ✓ Most probably not. LO may not include the type of outcomes that are the main concern of EIT
- ☞ **If so, how to integrate different methods?**
 - ✓ Engage in conversations with the European Networks that are concerned with field-specific QF and QA
 - ✓ Example - The ENAEE - European Network for Accreditation of Engineering Education, responsible for the EUR-ACE accreditation system

What I bring to you Today

II - Topics for the questions raised by the organizers (II)

- ☞ **How should Universities proceed? How should they cooperate with Business and Industry?**
 - ✓ I believe that, Today and in general, Universities are fully aware and willing to strengthen cooperation with Society.
 - ✓ Final year master dissertations should be employed for enhancing such cooperation
- ☞ **How to relate QA for EIT degrees with ESG and EQAR**
 - ✓ As mentioned above - through appropriate sectoral and field-specific framework standards
- ☞ **How can the Quality Culture for EIT programmes and degrees plug in LO oriented approaches ?**
 - ✓ Equally, already answered - engaging in conversations with the relevant stakeholders

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Meta Qualifications Frameworks and the Directive for Recognition of Professional Qualifications

- ☞ **(Two plus One) major documents at High Level**
 - ✓ **The QF-EHEA -Qualifications Framework for the European Higher Education Area - An Agreement**
 - Adopted in Bergen 2005, within the Bologna Process
 - ✓ **The EQF-LLL - European Qualifications Framework for Lifelong Learning - A Recommendation**
 - Adopted by the EC - approved on April 23, 2008 by the Parliament and the Council of the European Union
 - ✓ **The Directive for Recognition of Professional Qualifications, approved by the European Parliament and by the Council on September 7, 2005 - A Law within the Union**
 - National laws should have been passed in all EC Countries till the end of 2007....

Sectotral Qualifications Frameworks for Quality Assurance The EUR-ACE Qualification System for the Engineering Field

- ☞ **European Project that aimed at establishing an European System for Qualification of Engineering Education programmes**
- ✓ **14 European Institutions, among them “Ordem dos Engenheiros - Engineers Portugal”**
- ✓ **FEANI, SEFI, CESAER, EUROCADRES, ENQHEEI, ASIIN, CTI, IEI, CoPI, UNIFI, OE, UAICR, RAEE, EC-UK**
- ☞ **First Phase for setting the standards, supported by the European Commission (DG EaC) within SOCRATES and TEMPUS programmes; Concluded in 2005**
- ☞ **Second Phase for implementation, supported by the European Commission (DG EaC) within SOCRATES and TEMPUS programmes; concluded in 2008**

The EUR-ACE System I - The concept and objective

- ☞ **EUR-ACE developed Framework Standards, that were compiled as a “synthesis” between existing National Standards**
- ☞ **An European accreditation system that aims at**
 - ✓ **Ensuring consistency between existing national “engineering” accreditation systems;**
 - ✓ **Adding an European “quality label” to accreditation;**
 - ✓ **Introducing “accreditation” in other European and third countries;**
- and thus**
 - ✓ **Improving quality of education**
 - ✓ **Facilitating transnational recognition**
 - ✓ **Facilitating (physical and virtual) mobility**

The EUR-ACE System II - System Characterization

- ☞ **Programme Assessment Procedures should include clear information and evidence on the following components:**
 - ✓ Needs, objectives and outcomes
 - ✓ Educational process
 - ✓ Resources
 - ✓ Assessment of the educational process
 - ✓ Management system

- ☞ **Developed and maintain fully compliance with recognised European standards for quality assurance**

How does EUR-ACE fit with Meta-Frameworks? QFs, the Directive and the EUR-ACE System

Bologna QF-EHEA CYCLES	European Union EQF-LLL LEVELS	EUR-ACE	EU-Directive of Professional Recognition Art. 11 - LEVELS
Third Cycles	Level 8		
Second Cycles	Level 7	Second Cycles	Art 11° e)
First Cycles	Level 6	First Cycles	Art. 11° d)
Short Cycles Linked to or Within First Cycles	Level 5		Art. 11° c)

Three indicators of relevance I - The OECD-AHELO Initiative Assessment of HE Learning Outcomes

- ☞ Report about the engineering sector published on June 23, 2009
- ☞ Proposes a set of qualifications descriptors for First Cycles that was the result of a synthesis between:
 - The ABET EC 2000 criteria
 - The EUR-ACE criteris for FIRST CYCLES
- ☞ And gives one further relevant step:
 - Proposes descriptors of 'Learning Outcomes at branch level (Civil, Electrical and Mechanical Engineering).

Three indicators of relevance II - Report on progress in quality assurance in higher education (Text with EEA Relevance), European Commission, Brussels, 21.9.2009 COM(2009) 487 final

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Good practice**

The EUR-ACE label in engineering exists at the bachelor and master level. Standards were defined at European level, but are applied through national quality assurance agencies that are authorised to issue EUR-ACE "labels" together with their national accreditation. Several hundred labels have already been awarded, but they are still available from only seven National agencies

Three indicators of relevance

III - Report - The EU Contribution to the European Higher Education Area, Vienna, 12.03.2010

Distributed in the Budapest-Vienna Meeting of European Ministers of Higher Education, 11-12 March, 2010

On page 8, we can read:

“The Register is open to agencies operating in Europe, be they national or international, public or private, general or subject-specific. The Commission is supporting the development of a series of subject-specific European quality labels, which could/may lend their standards to existing agencies or become agencies in their own right. Examples include the EUR-ACE label in engineering and the Eurobachelor, Euromaster and Eurodoctorate labels in chemistry.”

CLOSING VERTICALLY THE PROCESS

Descriptors at Branch/Programme Level

- ☞ The Recommendations in the TUNING AHELO conceptual framework of expected/desired Learning Outcomes in Engineering (2009)
 - Specific LO for Civil Engineering - 1st Cycles
 - Specific LO for Electrical Engineering - 1st Cycles
 - Specific LO for Mechanical Engineering - 1st Cycles
- ☞ The Recommendations of the WPE-EFCE - Working Party on Education - European Federation of Chemical Engineering (2010)
- ☞ The VDI-GVC Recommendation for Chemical and Processing Engineering (2008)
- ☞ The CHEMPASS Project (2006-2009) - that aimed at identifying relevant general and specific Learning Outcomes for Chemical Engineering Programmes

Descriptors at Branch/Programme Level Recommendations of the WPE-EFCE (I)

- ☞ **WPE-EFCE - Working Party on Education - European Federation of Chemical Engineering**
 - ✓ **Currently with 41 members, representing 26 Countries**
- ☞ **In 2005 - EFCE Board approved a set of Recommendations on core curriculum for chemical engineering - contents and methodologies**
- ☞ **In 2010 - EFCE Board approved a major revision of the Recommendations, aligning them with the Bologna Process main concepts (Learning Outcomes) and with the EUR-ACE Framework Standards**
- ☞ **See EFCE Site at <http://www.efce.info/wpe.html>**

Descriptors at Branch/Programme Level Recommendations of the WPE-EFCE (II)

- ☞ **These recommendations cover**
 - **Learning outcomes**
 - ✓ **Adopting the EUR-ACE Framework Standards for Accreditation of Engineering Education**
 - **Achieving the learning outcomes**
 - ✓ **Core curriculum**
 - ✓ **Teaching and learning**
 - ✓ **Industrial experience**
 - ✓ **Review of the educational process**
 - ✓ **Student assessment**