



Academic Degrees and Recognition of Professional Qualifications: Profiles, Levels and Accreditation

Sebastião Feyo de Azevedo
Faculty of Engineering, University of Porto
Order of Engineers, Portugal
sfeyo@cdn.ordeng.pt
<http://www.ordemengenheiros.pt>

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To say what I am going to say...

Professional Recognition and Qualifications

- ① What is at stake - European Strategy for Development
- ② Two major documents in 2005
 - ② The Bergen Communiqué and the European Directive on professional Recognition
- ③ Academic Degrees and Recognition of Professional Qualifications
 - ③ Characterization of Levels and Profiles
 - ③ Outcomes and Accreditation
- ④ Summarizing routes for different professional qualification levels



Recall what is at stake... European Strategy for Development

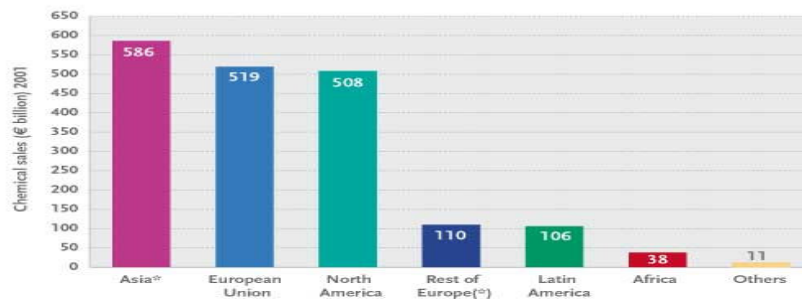
- ☞ Last quarter of the 20th Century - Intense search of new routes for Europe and for the World
- ☞ Culminated with the European Council of Heads of State and Governments, March 2000, Lisbon
 - ✓ Competitive positioning relatively to the other blocks of the Planet
 - ✓ Stating of a strategic objective:
“By 2010, making Europe the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion” .

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A simple example of World Competition Geographic breakdown of world chemicals production



World chemicals production in 2001 is estimated at € 1,878 billion.
The EU accounts for 28% of the total.

Sources: Cefic, NCF (National Chemical Federations), United Nations and ACC (American Chemistry Council)

Notes: * estimated
(*) Rest of Europe= Switzerland, Norway, Central & Eastern Europe, and Turkey
Asia: including Japan and China



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The Lisbon Strategy for 2010: The three dimensions of the Strategy

- ☞ **The Economy Dimension** - where we can identify the movement that converged in the creation of the EURO
- ☞ **The Social Dimension** - seen on the multiple objectives of social nature set in the “Lisbon Strategy for 2010”
 - ✓ In line with the European culture of humanism, reasoning, freedom and democracy
- ☞ **The Knowledge Society Dimension** - identified with the Bologna Process
 - ✓ with all the social, human capital and economical implications



What matters...for the discussion Today...

- ☞ **The new paradigm of European pattern of development is based on transnational co-operation and mobility**
- ✓ **Mobility requires professional recognition**
- ✓ **Professional recognition requires TRUST**
- ✓ **TRUST is the result of transparency, readability of qualifications**
- ✓ **Readability of qualifications means understanding and making differences clear**
 - in qualification levels and in profiles
- ☞ **These differences must be embedded in accreditation procedures**



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Two major documents in this framework of development I - The Bergen Declaration within the Bologna Process (I)

- ☞ **The Bergen Communiqué signed by Ministers of Education of 45 Countries reaffirms the Bologna Process and gives a step forward**
 - ✓ **Adopts the overarching framework for qualifications in the EHEA, comprising three cycles**
 - ✓ **Adopts the standards and guidelines for quality assurance in the European Higher Education Area as proposed by ENQA.**
 - **Will introduce a model for peer review of quality assurance agencies on a national basis,**
 - **Welcomes the principle of a European register of quality assurance agencies based on national review.**



Two major documents in this framework of development I - The Bergen Declaration within the Bologna Process (II)

- ☞ Innovates the offer of education, promoting a more basic level of professional relevance

'..... We adopt the overarching framework for qualifications in the EHEA, comprising three cycles

(including, within national contexts, the possibility of intermediate qualifications),

generic descriptors for each cycle based on learning outcomes and competences...'



Two major documents in this framework of development II - The Directive for the Recognition of Professional Qualifications (I)

- ☞ Reaffirms previous Directive, accepting 7 professional areas with recognized specifications

- | | |
|-----------------------------------|-------------------------------|
| ✓ Medical training | Minimum education - 6 anos IT |
| ✓ Training of veterinary surgeons | Minimum education - 5 anos IT |
| ✓ Basic dental training | Minimum education - 5 anos IT |
| ✓ Training as pharmacists | Minimum education - 5 anos IT |
| ✓ Training of nurses | Minimum education - 3 anos IT |
| ✓ Training of midwives | Minimum education - 3 anos IT |
| ✓ Training of architects | Minimum education - 4 anos IT |

- ☞ Engineering is out of this group



Two major documents in this framework of development II - The Directive for the Recognition of Professional Qualifications (II)

- ☞ **Article 11 - Five levels of qualification particularly relevant for professions that are out of the Annex**
 - ✓ **2 levels requiring secondary education, general or vocational**
 - ✓ **1 level, requiring short post-secondary education, not necessarily at higher education level, plus professional training**
 - ✓ **2 levels of post-secondary education at higher education level, plus adequate professional training**



Two major documents in this framework of development II - The Directive for the Recognition of Professional Qualifications (III)

- ☞ **Art. 11, e)**
...completed a post-secondary course of at least four years' duration...at a university or establishment of higher education...and where appropriate completed professional training...
- ☞ **Art. 11, d)**
...training at post-secondary level of at least three and not more than four years' duration...at a university or establishment of higher education...as well as the professional training that may be required...
- ☞ **Art. 11, c)**
...training at post-secondary level other than that referred in d) and e) of a duration of at least one year...as well as the professional training which may be required in addition to that post-secondary course...



A striking coincidence or concerted action?

- ☞ **The Bergen Declaration and the Directive point out in the same direction**
 - ✓ Recognition of different qualification levels and profiles
 - ✓ Recognition that qualifications can be attained through routes in two different subsystems
- ☞ They fit remarkably well in the world of engineering and the offer of engineering education in Europe
- ☞ They should obviously be translated into our accreditation system



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Academic Degrees and Recognition of Professional Qualifications I - Concerning level of qualification - (I) - Art. 11, c)

- ☞ **Level of Qualification: Art. 11, c)**
 - **1 year of post-secondary course work + Professional Training \geq Z, with Z=1**

- ☞ **At least for the time being, in most countries, not leading to a recognised competence group of Engineering, though they are vital for the 'Engineering Act'...**

- ☞ **Let's identify them as Technicians**



Academic Degrees and Recognition of Professional Qualifications I - Concerning levels of qualification - (II) - Art. 11, d) and e)

- ☞ **Two levels of qualifications associated to those levels approved in the Directive**

- ☞ **LEVEL 1 - Art. 11, d): (3-4)U + Professional Training \geq Y, with Y=?**
 - **First Cycle Degrees are the basis for achieving the qualification of Technical Engineer, or equivalent European designation**

- ☞ **LEVEL 2 - Art. 11, e): \geq 4U + Professional Training \geq X, with X=?**
 - **Second Cycle Degrees are the basis for achieving the qualification of Engineer, or equivalent European designation**



Academic Degrees and Recognition of Professional Qualifications II - Concerning Profiles

- ☛ **Two main engineering profiles**
 - **More Theoretically oriented**
 - ✓ Programmes with a stronger emphasis on basic and engineering sciences in the first years
 - ✓ Generally linked to Second Cycle degrees
 - **More Applications oriented**
 - ✓ Designed to qualify after First Cycle, independently of pursuit of studies through Second Cycles, be it directly or through bridging programmes



Academic Degrees and Recognition of Professional Qualifications III - Programme Outcomes for Accreditation (I)

- ☛ **Programme outcomes for accreditation should always be related to potential professional recognition of engineering qualifications**
- ☛ **As such:**
 - ☛ **There must be only one set of programme outcomes for accreditation of Second Cycle Degrees**
 - ☛ (Whatever the profile and programme, to be discussed below)
 - ☛ **There must be only one set of programme outcomes for accreditation of First Cycle Degrees**




Academic Degrees and Recognition of Professional Qualifications III - Programme Outcomes for Accreditation (II)

- ☞ **Programme Outcomes must be evaluated in relation with the level of intervention in the Engineering Act**
 - Social responsibility (namely, signing projects)
 - Capacity to tackle large, complex problems
 - Capacity to adapt to new jobs of high complexity and responsibility
 - Capacity for effective activity in the production line
 -
- ☞ **For the different subsets of Programme Outcomes, and for the First and Second Cycle Degrees, the differences in requirements are mostly related with**
 - **scope, depth and breath**



Academic Degrees and Recognition of Professional Qualifications III - Programme Outcomes for Accreditation (III)

- ☞ **The reference should be the Programme Outcomes for Accreditation of Second Cycle Degrees**
- ☞ **Whatever the programme and profile, be it an 'Integrated Programme' (?) or First-Second Cycle Degree, we must evaluate Integrated Outcomes**
 - ✓ **We are not going to accredit the part corresponding to '120 ECTS'...**
- ☞ **Programme Outcomes for First Cycle Degrees are most relevant, with most relevant implications in professional qualifications**
 - ✓ **In Integrated or 'more theoretically oriented profiles', most probably not always the 'First Cycle within these programmes' will meet the requirements for accreditation**
 - ✓ **First Cycle Degrees for 'more applications oriented programmes' must aim at satisfying such requirements**



Professional Recognition and Qualifications

Recognition of Professional Qualifications Characterisation of Qualification Levels and Profiles IV - A possible matrix			
	Professional Theoretical Engineers	Professional Applications Engineers	Designation ?
Level of Qualification Art. 11, e) >= 4U + Prof.Training >= X	PTE_LQ-2 (M. Eng; M.Sc?)	PAE_LQ-2 (M. Eng.; M. Tech ?)	Engineer
Level of Qualification Art. 11, d) (3-4)U + Prof. Training >= Y	PTE_LQ-1 Possible in some, but not all areas (B. Sc.)	PAE_LQ-1 (B.Eng.; B.Tech ?)	Technical Engineer

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Professional Recognition and Qualifications

Academic Degrees and Recognition of Professional Qualifications V - Facts and Future of Routes for Qualification (I)	
<ul style="list-style-type: none"> ☞ Whatever the School and profile, I do not favour ‘fully integrated programmes’ with one only way out... ➤ The Spirit of Bologna is relevant for the future of Europe and two-cycle programmes should be implemented! 	<ul style="list-style-type: none"> ☞ We must recognize two main profiles that lead to two main offers of Programmes in Engineering Education ➤ The offer of two-cycle programmes, within a philosophy of integrated studies, aiming mainly at fulfilling the requirements of accreditation and professional recognition at LEVEL 2 ➤ The offer of two-cycle programmes, aiming at fulfilling at both levels the requirements for accreditation and professional recognition

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Academic Degrees and Recognition of Professional Qualifications V - Facts and Future of Routes for Qualification (II)

- ☞ **Research Oriented Schools should favour one route with two cycles, with more theoretically oriented programmes**
 - Programmes should be designed in terms of integrated outcomes after the Second Cycle
 - Academic competence either in Engineering or in Engineering Science, should be recognized in the form of a First Cycle Degree, comprising 180 to 210 ECTS, not more...
 - ❖ This means that the requirement of accreditation of the First Cycle should not be an a priori constraint in the design
 - ❖ This also means that in some areas, First Cycle Degrees of these more theoretically oriented programmes, may fulfil requirements for accreditation and professional qualification of LEVEL 1
- ☞ Moreover, the Second Cycle of such programmes should be flexible enough to accommodate new public, within mobility programs

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Academic Degrees and Recognition of Professional Qualifications V - Facts and Future of Routes for Qualification (III)

- ☞ **As for the the general or wider offer, in some Universities and all Polytechnics**
 - One route with two cycles, where at both levels it is expected that programmes meet the requirements for accreditation and professional recognition
- ☞ **What in all is most relevant, an not so much spoken** ➤
 - Increase the attractiveness of the offer in order to bring into the system students with different backgrounds and interests
 - Providing bridging programs
 - Implementing the concept of 'accumulated credits'
 - Creating a true offer for lifelong learning through complementary modules of (advanced) specializations courses

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Academic Degrees and Recognition of Professional Qualifications VI - The EUR-ACE Project (I)

- ☞ **European Project of significant relevance, aiming at establishing an European System for Accreditation of Engineering Education programmes**
- ✓ **14 European Institutions, among them the Portuguese Order of Engineers**
 - **FEANI, SEFI, CESAER, EUROCADRES, ENQHEEI, ASIIN, CTI, IEI, CoPI, UNIFI, OE, UAICR, RAEE, EC-UK**
- ✓ **Will award the EUR-ACE Accreditation Label**
- ✓ **Will lead to creating na European Agency for Sccrediting National Agencies**



Academic Degrees and Recognition of Professional Qualifications VI - The EUR-ACE Project (II)

- ☞ **The EUR-ACE Project will establish:**
 - **Standards for Second Cycle degrees, viewed in an integrated perspective**
 - **Standards for First Cycles**
- ☞ **The Order of Engineers is already preparing and running pilot accreditations within the new accreditation moddels for Second Cycle Degrees**



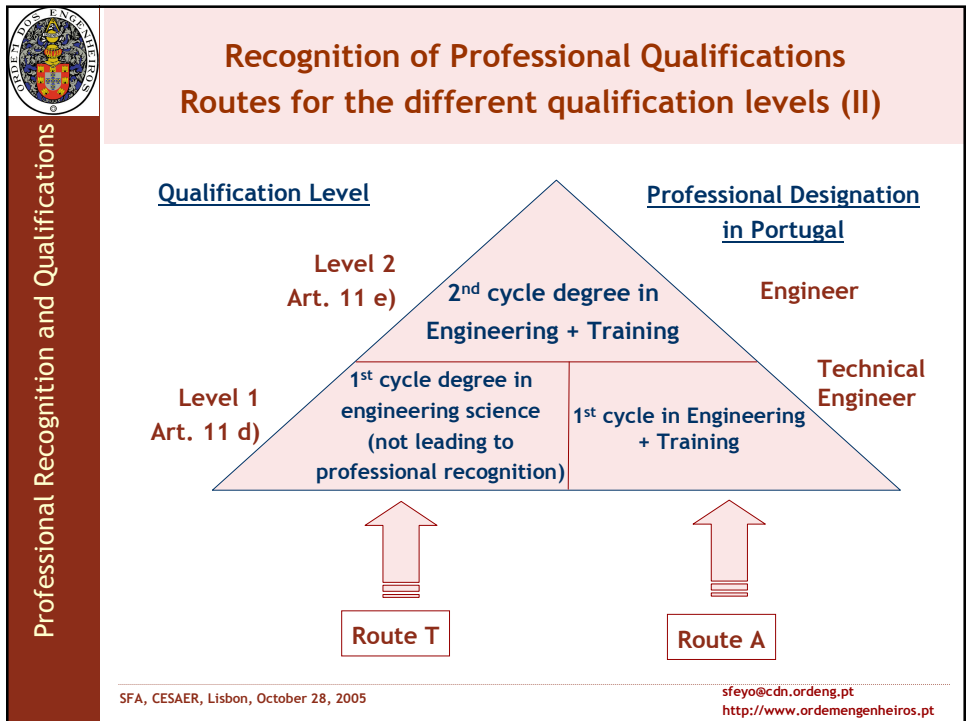
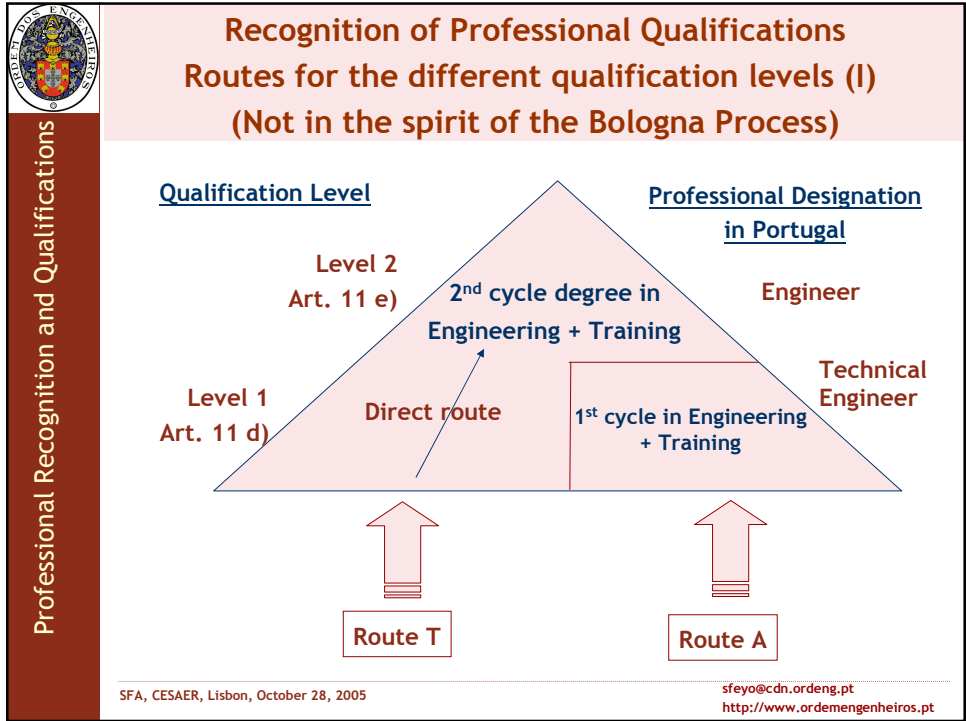
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So, Routes for Professional Qualification Standards for Accreditation

- ☞ We should offer two-cycle programmes for engineering education, be it with a philosophy of integrated studies or with the aim of leading to the two levels of engineering professional qualifications
- ☞ Standards for Second Cycle Programmes should be the reference
 - ✓ One only set of standards to be evaluated in terms of integrated outcomes
 - ✓ Outcomes and competence associated to Second Cycle Education should meet the requirements for professional recognition (Engineer or equivalent designation at European level), to be reached by whatever route...
- ☞ Standards for First Cycle Degrees
 - ✓ One only set of standards
 - ✓ Outcomes and competence associated to First Cycle Education may or may not meet the requirements for professional recognition (Technical Engineer or equivalent designation at European level)





Recognition of Professional Qualifications Routes for the different qualification levels (III)

