Case Study Spain:

Why Spanish accreditation of informatics degree programmes needs a European dimension

Javier Segovia and Frauke Muth, EQANIE, October 11th, 2010
Overview

1. Development of Informatics as a discipline in HE
2. Main Players
3. Standards and guidelines for informatics education in Spain
4. Quality assurance
5. Comparison with the Euro-Inf Framework Standards and Accreditation Criteria
Before 2005

- Presumption: Spanish informatics community considers itself closer to engineering than to science.

- Official catalogue of degrees
  - one degree per profession
  - Field of ICT divided in informatics and telecommunications
Degree structure

until 2005

Ingeniero Superior

3y

Ingeniero Técnico

6y

2005-2007

Master,
60-120 ECTS,
Any specialisation, no restrictions

Bachelor „Informatics Engineering“, 240 ECTS, no specialisations
Degree structure

2005-2007

BA
Bachelor „Informatics Engineering“, 240 ECTS, no specialisations

MA
Master, 60-120 ECTS, Any specialisation, no restrictions

2007

BA
Bachelor, No restrictions on field, content, title etc. 240 ECTS

MA
Master, 60-120 ECTS, no restrictions
Degree structure

2007

Master, 60-120 ECTS, no restrictions

Bachelor, No restrictions on field, content, title etc. 240 ECTS

Engineering Professional Colleges

Engineering catalogue of degrees
- Electrical engineering
- Power engineering
- Civil engineering
- Etc.

Contents
- Mathematics
- Statics
- Electrical circuits
- Etc.
Degree structure

Equal terms!

We are engineers!

Engineering catalogue of degrees
- Electrical engineering
- Power engineering
- Civil engineering
- Etc.

Contents
- Mathematics
- Statics
- Electrical circuits
- Etc.

Gov.

MA

BA

10/18/2010
Degree structure

"Non-engineering-related" informatics

MA
Master, 60-120 ECTS, no restrictions

BA
Bachelor, No restrictions on field, content, title etc. 240 ECTS

"Engineering-related" informatics

MA

BA

Engineering catalogue of degrees
• Electrical engineering
• Power engineering
• Civil engineering

Informatics Engineering
• Etc.

Contents
• Mathematics
• Statics
• Electrical circuits
• Etc.
Degree structure

„Non-engineering-related“ informatics
- MA
  - Master, 60-120 ECTS, no restrictions
- BA
  - Bachelor, No restrictions on field, content, title etc. 240 ECTS

„Engineering-related“ informatics
- MA
  - 1 degree „Ingeniero en informática“=Master, 60-120 ECTS
- BA
  - 5 specialisations „Ingeniero técnico en informática“=Bachelor, 240 ECTS
Degree structure

„Non-engineering-related“ informatics

BA in Mathematics and Informatics
MA in Artificial Intelligence
MA in Software Engineering

Bachelor, No restrictions on field, content, title

„Engineering-related“ informatics

Bachelor of Engineering in Information Systems
Informatics Engineer in Software Engineering

Informatics Engineer

Master, no restrictions

1 degree "Ingeniería en informática"=Master, 60-120 ECTS

5 specialisations Bachelor of Engineering in Information Systems

BA Bachelor, "Non-engineering-related“ informatics
No restrictions

10/18/2010
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Main Players

Government

- at national level Ministry of Education
  - Adoption of QA standards and criteria at national level
- at regional level:
  - Provision of the major part of the university-financing
  - Adoption of regulations complementing the NQF
Main Players

- **CODDI**
  - Conference of heads of all faculties/schools/departments offering courses leading to degrees in informatics
  - Representing 79 University Computing Centers belonging to 62 universities
Main Players

- **Council for University Coordination** (until 2007)
  - main responsible of the Bologna implementation in Spain
  - chaired by Minister of Science and Education
  - further composed of
    - the council of rectors
    - Representatives of HE-departments in the regional governments and
    - 21 representatives from academic, scientific, cultural, professional, economic and social life
Main Players

- Council for University Coordination
  - Working group: Engineering and Architecture (covering Informatics too)
    - CODDI represented with two members
Main Players

- **ANECA**, National Agency for Quality Assessment and Accreditation
  - Initial accreditation of a new degree: assesses if a degree related to informatics engineering follows the recommendations.
  - Passes on its recommendation to the Council of Universities
  - In general: evaluation and (re-)accreditation of programmes leading to the award of recognised degrees nationwide
  - (regional QA-agencies with other responsibilities)
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Standards and Guidelines for Informatics HE

- Elaboration of a set of recommendations by CODDI, submission to Ministry
- Amendments /Modifications by a technical commission set up by the Ministry
- Adoption by the Ministry
- Entry into force 2009
Standards and Guidelines for Informatics HE

- **Bachelor**: Statements of expected learning outcomes at programme level

- **Additional requirements:**
  - 240 ECTS credits
  - Minimum LO to be attained at module level in the following categories
    - dedicated to the fundamentals (60 cp);
    - informatics analysis, design, implementation (48 cp)
    - Thesis (12 cp)
    - Diploma Supplement???
Standards and Guidelines for Informatics HE

- **Master:** Statements of expected learning outcomes at programme level

- Additional requirements:
  - Not exceeding 120 ECTS
  - Admission prerequisites (Bachelor in Inf.Eng.)
  - Diploma Supplement
  - Minimum LO to be attained at module level in the following categories
    - leadership/management capacities (12 cp);
    - informatics professional LO (48 cp)
    - Thesis (6-30 cp)
Standards and Guidelines for Informatics HE

Impact:

- Recommendations treated as requirements by the government
- Professional colleges only admit graduates who have degrees following the recommendations
- Most faculties offer two Masters – one professional, one research
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Quality Assurance - internal

Minimum level

- By law, each programme must have
  - a person/unit responsible for QA of the programme
- and procedures
  - for assessing and improving the quality of teaching
  - to ensure the quality of external training and mobility programmes
  - to analyse graduates’ entry in the labour market and their satisfaction with the education received
  - to analyse the satisfaction of the different stakeholders (students, teachers, etc.).
Quality Assurance - external

- Programme accreditation
- Peer review
  - Academia, QA experts from industry
- Validity of accreditation: 6 years
- Costs for the HEI: n.a.
Stages of External QA

1. **Ex-ante accreditation**
   - Since 2007
   - Valid for 6 years

2. **Follow-up Procedure**
   - Monitoring
   - “By unobtrusive means”

3. **Ex-Post (or: re-accreditation)**
   - The first round yet to come
   - ALO are mapped against ILO
Ex-Ante Accreditation

University Council

Final Decision

Notification

Accreditation Report

Assessment

Programme

Programme

Programme

Programme

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### STAGE 1  Ex-ante accreditation

#### BACHELORS

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#### MASTERS

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Since 2007 curriculum design in Spain has to be oriented at learning outcomes

National Report Bologna Process 2009:

c) How many HEIs have described their programmes in terms of learning outcomes?
   - All HEIs □
   - Most HEIs X
   - Some HEIs □
   - No HEIs □

d) Are student assessments at HEIs designed to measure the achievement of the intended learning outcomes (based on published criteria) applied in a consistent way?
   - All HEIs □
   - Most HEIs □
   - Some HEIs X
   - No HEIs □
Conclusion

- Spanish informatics is split, but could be united via the Euro-Inf Framework

- **Challenge:**
  - „Fait accompli“ of the current system – end of terms in 4-8 years
Thank you!!