International Exchanges and Qualifications in the Bologna Era

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Transnational Mobility in the Bologna Era

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Universidad Politécnica de Valencia (UPV), Valencia/Spain, June 13-14, 2008
1 The Bologna Process
   • Transition from Diploma System to Bachelor/Master System
   • Cycles of the Bologna Process

2 Transnational Mobility
   • Existing Mobility Models
   • Proposals for Future Transnational Mobility

3 International Master Programs at the Univ. of Stuttgart
   • Existing Programs
   • International Graduate School (IGS)
   • Excellence Program
1. The Bologna Process

Transition from Diploma System to B/M-System

**Diploma-System**
- Secondary School Degree
- Intermediate Exam
- Diploma Degree
- Cl. Prep.

**B/M-System**
- Bachelor Degree
- Master Degree
- Doctoral Degree
- Secondary School Degree

**Profession**
- Diploma Degree
- Intermediate Exam
- Cl. Prep.
The 3 Cycles of the Bologna Process

1. Cycle: Undergraduate Studies → Bachelor
   3-4 years (180...240 CP) "Employability"-Level

2. Cycle: Graduate Studies → Master
   2-1 years (120...60 CP)

3. Cycle: Postgraduate Studies → PhD
   (≥) 3 years

Notes:
- Module System
  Basic modules (fundaments)
- 1 CP equiv. to 30 real work hours
  Core modules (specialization)
- 30 CP per semester
  Supplementary modules
- Key qualifications
- Accreditation
2. Transnational Mobility: Existing Programs

1. Erasmus-Exchange Program (non-degree)
   - 1 or 2 semesters with partner universities in Europe
   - Learning agreements, scholarship
   - Extendable as "free mover" (without scholarship)

2. Exchange Programs with non-European Universities (non-degree)
   - Individual partnership agreements

3. Degree Programs (usually: Master degree)
   - Individual partnership programs
   - Financial support by national programs
   - Typical: foreign phase after 4 years of studies
     one year abroad
     return to complete diploma program

Double Diploma Programs (double degree programs)
   - Partnership double-degree agreement
   - Typical: 4 years at home university, 3 semesters abroad
   - Final diploma thesis jointly supervised and evaluated
Double Diploma El. Engin. & Inf. Technology

Arrival (August / September)

Check-In
Interview, Fixing of Study Program
Acknowledgement of Exams

Project (3 m.)

Diploma Thesis Project (6 months)

Industrial Internship (3 ... 6 months)

Major:
El. Power Systems
- Power Nets & Plants
- Power Convers.
- Power Prot. & Mmt.
28 SWS Courses & Labs
Project (3 m.)

Automotion & Control
- Automation & S. E.
- Control & Power Electr.
- El. Systems
28 SWS Courses & Labs
Project (3 m.)

Commun. Technology
- Telecommun.
- Radio Freq. T.
- Signal Process.
28 SWS Courses & Labs
Project (3 m.)

Computer Engineering
28 SWS Courses & Labs
Project (3 m.)

Micro- & Optoelectronics
- Optoelectr. Systems
- Integr. Circuits
28 SWS Courses & Labs
Project (3 m.)

In-depths:
- El. Power Automotion Systems & Control
- Commun. Technology
- Computer Engineering
- Micro- & Optoelectronics
- Industrial Internship (3 ... 6 months)
- Diploma Thesis Project (6 months)
- Check-In
- Interview, Fixing of Study Program
- Acknowledgement of Exams
- Arrival (August / September)
2. Transnational Mobility: Terminology

Horizontal Mobility
(non-degree programs)

Vertical Mobility
(degree programs)

Options:
- independent application
- joint-degree program (based on mutual agreement)
- double-degree programs (based on mutual agreement)
London Accord (Communiqué), May 18, 2007)

- Realization of the European Higher Education Area (EHEA)
- Compatibility and comparability of higher education systems
- Mobility of staff, students and graduates => core elements of the Bologna Process
- Acceptance of the 3-cycle-degree system (B/M/D)
- EHEA in context with global setting of the OECD/UNESCO ➔ Guidelines of quality position in cross-border higher education
- Towards a "EUROPASS"
  - CV
  - Mobility pass, learning outcome
  - Diploma supplement
  - Transcript of records
  - Language pass
2. Transnational Mobility: Proposals (horizontal)

- Use of Erasmus/Socrates programs for 1 semester within B or M-cycle
- Agreement based on EU regulations (→ LT agreements of 5-6 years)
- Selected partnerships bilaterally or even multilaterally based on comparable institutions and previous experiences
- Definition of a "Mobility Window" where the programs are mutually agreed upon (→ fitting of foreign phase into home study program)
  ➜ For effective mobility, necessity of a higher degree of mutual cooperation!
- Alternatively to university exchange:
  Industrial internship abroad without/with support by partner university
2. Transnational Mobility: Proposals (vertical)

• **Use of existing/new Master programs**
  - offered in the local language
  - offered in English language (international Master Program)

• **Option 1: Joint-Degree Programs (1+1 yr.)**
  - Home Program
    - courses/labs
  - Foreign Program
    - Master Thesis
      - courses/labs
  - Based on mutual agreement with fully coordinated module programs
  - joint definition/supervision of Master project
  - joint certificate/transcripts including Diploma supplement
  - joint study and examination regulations respecting local rules

• **Option 2: Double-Master Programs (1+1.5 yr.)**
  - Home Program
    - courses/labs
  - Foreign Program
    - Master Thesis
      - courses/labs + internship
  - Extended programs for foreign phase
    - industrial internship (3 months)
    - more specializations (research)
    - more business/language/management skills
  - agreement framework analogical to joint-degree program
<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
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<tbody>
<tr>
<td>COMMAS</td>
<td>Computational Mechanics and Materials Structures</td>
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<tr>
<td>GEOENGINE</td>
<td>Geomatics Engineering</td>
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<tr>
<td>INFOTECH</td>
<td>Information Technology</td>
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<tr>
<td>MIP</td>
<td>Master’s Program in Infrastructure Planning</td>
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<td>PHYSICS</td>
<td>Physics</td>
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<tr>
<td>WAREM</td>
<td>Water Resources Engineering and Management</td>
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<tr>
<td>WASTE</td>
<td>Air Quality Control, Solid Waste and Waste Water Process Engineering</td>
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see: [http://www.uni-stuttgart.de/studieren/angebot/master/index.html](http://www.uni-stuttgart.de/studieren/angebot/master/index.html)
**Excellence Programs**

**Existing:**
- 6 special research centers (SFB, German Res. Council)
- 6 transfer programs
- Numerous research programs funded by
  - German Research Council
  - European Universities
  - Fed./Loc. Government
  - Industry
- 3 graduate doctoral programs
- 1 Center for Culture and Technology Research
- 1 Center for Aerospace Engineering (DLR)
- 6 Fraunhofer Institutes of Applied Research
- 2 Max-Planck Institutes of Basic Research (Metal, Solid State)
- 10 special research centers
  - Micro/Nanotechnology
  - Automotive Research
  - Energy Research
  - ...

**New:**
- 1 Excellence Center for Simulation Technology
- 1 Graduate School for Simulation Technology
- 1 Graduate School for Advanced Manufacturing Technology