Institutes of Technology (IUTs)

Short cycle and B-cycle Higher Education...

...with a difference
Institutes of Technology (IUTs)

- Presentation of the IUT network
- Research, Teaching and Learning
- Graduates’ career paths
- Focus on International Collaborations
Professional Higher Education within the University (1)

• Facts and Figures

  – 113 IUTs in 82 Universities
  – Created 1966 to meet the needs of the industry and service sectors

  – 145,000 students
  – 24 specialities taught in 631 departments
  – 1200 B-level Professional Bachelor’s degrees
  – Funding: State / entreprises
Professional Higher Education within the University (1)

- Facts and Figures: Research & Innovation
  - Research in IUTs
  - 70+ % of lecturers are Doctors active in Research
  - 163 Research centers in IUTs
  - Research in National Research Institutions
  - International Partnerships
  - 30% of French Ph.D receivers are alumni of IUTs
Professional Higher Education within the University (1)

• Facts and Figures: Research & Innovation

– Research in French Universities

Teaching & Learning / Research

University

IUTs
  Specific Law

Faculties
  Common Law

Research Labs

Research Projects

Research

Major Establishments
Professional Higher Education within the University (2)

• A specific Short cycle award: Diplôme universitaire de technologie (DUT) {EQF 5}

• Created 1966 to meet economic et social needs
  – National definition / national, network-based regulation, QA
  – Aim: train middle managers, middle level engineers
  – Innovative learning strategies: technology → Learning by Doing

• Ways and Means
  – 24 wide-spectrum specialities
  – Curriculum design and evaluation by academics and professionals
  – Emphasis on professionalisation
IUTs in the Regions

- 113 IUT’s in 83 Universities
- 40 years’ experience
- 1 million+ graduates
HAPHE > Higher Professional Education

- Harmonising Professional Higher Education
  - Academic vs. Professional vs. Vocational Higher Education
  - Interface with the world of work (pros and enterprises)
  - Research and innovation /Teaching and learning

- Specificity of PHE in Higher Education
  - Economic input (Innovation, TT, Teaching) in the territories
  - Training of a diverse body of learners
  - Innovation in Teaching and learning methods

- Quality Assurance
  - Curriculum development and validation
  - Assessment methodology and structures

European Reference
Study programmes (industrial sector)

Electrical Engineering and Control
Telecommunications and Network Engineering
Computing - Mechanical Engineering and Production
Chemical and Process Engineering - Chemistry
Biological Engineering - Energy Engineering
Health, Safety and Environment - Civil Engineering
Industrial Maintenance - Material Engineering
Biotechnology - Quality and Production Management
Study Programmes (tertiary sector)

- Social Careers
- Legal Careers
- Statistics and Data processing
- Communication and Information
- Business and Administration Management
- Marketing and Sales
- Logistics and Transport
Professional Higher Education within the University (3)

- B-Level Professional Bachelor’s Degree
  
  *Licence Professionnelle (Bac +3) {EQF 6} {IQF 6/7?}*

  - Created 1999
  - Aim: 1-year training for highly specialised competencies
  - Prepare for specific jobs
  - Study programmes defined regionally by academics, professionals and professional representatives
  - National QA and regulation
  - 1200 awards in the 113 IUTs
Teaching and Learning Strategy (1)

• **Academic and professional Training:**

  Permanent and coherent link with Research:
  ➔ Research
  • 2/3 of teachers are researchers and profs
  • Research is carried out in major labs and institution (CNRS…)

  ➔ Innovation
  • R&D, applied Research (member of the Univ of Applied Sciences Network)
  • Links between organisations (esp SMEs) and academia

  ➔ Technology Transfer
  • Specific platforms
  • Through Student projects / initiatives
  • Student placements
Teaching and Learning Strategy (2)

• Academic and professional Training:

  Teaching and Learning:
  1620 / 1800 h over 2 academic years
  → Lectures 20%
      • Academic approach; traditional teaching
  → Seminars 40 %
  → Lab / practical work / projects 40%
      • Inductive pedagogy
         Projects, Project Management, Team Management
      • Student-Centred learning
         Personal and Professional Project
      • ‘Profession-centred’
         10(14)-week placement
         Supervised projects: Company-sponsored projects
A Nationwide / Network-Based Approach

- Resources

> IUT teaching resources center: *Centrale des Cas*
> IUT online E-learning service: *IUTenLigne*
> IUT Entrepreneurship: *CréaIUT*

> National Challenges and competitions for projet work
Per speciality
A Nationwide / Network-Based Approach

• External Quality Assurance

1. Nationally defined curricula
   > Assembly of Heads of Departments
   > National Pedagogy Committee (professionals / academics / ministry)

2. Quality Assurance
   > National Pedagogy Committees
   > National Consultative Committee (+ students + independent experts)

Profesional Bachelors:

HCERES
Haut conseil de l'évaluation de la recherche et de l'enseignement supérieur
Examples of National Projects

• A nationwide / network-based approach

  • Simulations:
    > French / English serious games (Tertiary sector)
    > Robotics, E-Kart, Shell Marathon, etc. (Industrial sectors)

  • Competitions:
    > National Negotiation Masters
    > Engineering and Design; Sustainable development; green energy, etc.

  • Projects: input from professionals
    > Subjects / themes / real-life cases
    > Professional juries

  • Economic Intelligence, Entrepreneurship
Keeping in Touch with Reality

- Taken from the National Curricula (2013) for IUT courses

Opening to economic issues in the 21st century:

- Entrepreneurship:
  > 30-hour modules
- Economic intelligence
  > International environment course
- Sustainable development
  > Adapted to the speciality
- Project management
  > Supervised Projects
Employability (1)

Secondary education

Employment

L Pro

DUT 1

DUT 2

Non U 1

Non U 2

Employment

30%

50%

EQF 5

M 1

EQF 7

M 2

B 3

B 2

B 1

20%

20%

EQF 6
Focus on International Relations (1)

- A nationwide / network-based approach (complements local initiatives)

- Lobbying for Professional Education & Applied Research
  - European Commission / BFUG (Bologna Process)
  - Harmonising Professional Higher Education
  - Developing Quality Assurance
  - Quantifying / Advancing the Social Dimension

- Cooperation on T&L
  - Indonesia: RPL / APPEL
  - Business simulations: Hungary: French / English serious games

- Organising Study Visits on the T&L of technology
  - Work on skills and competencies
  - Rôle of / interface with the world of work
Focus on International Relations (2)

- Designing Professional Awards in cooperation
  - Morocco: Curriculum design for Logistics departments
  - Columbia: Professional Bachelor in Tourism (2012/3) Agribusiness / Logistics (on-going)
  - Jordan: Nuclear Maintenance for Major Project policy

- Student Mobility (sometimes in collaboration with French companies)
  - Brazil, China, Columbia, Equator, Thailand, Qatar
  - Angola, Gabon, Republic of Central Africa, Yemen…

- Creation of IUTs
  - Morocco (IST), Algeria (creation of a network of 5 IUTs)
Focus on International Relations (3)

• What about the Transatlantic Mobility Initiative?

The specific context of American Community College students
> Language English only
> Limited financing
> Limited time available for international University experience
> No knowledge of French

Solution(s)?
> Short internships in our research or teaching Labs
> Specific short term subjects (easy assessment of results)
> Limited cost (student residence 350€/month)
> English language

*Works well with Japanese and Canadian students!*
Thank you

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