



ParisTech

*April 2017*

## A CONSORTIUM OF GRADUATE SCHOOLS IN ENGINEERING & SCIENCE

- ParisTech is a consortium of 10 Graduate Schools of Engineering & Science, which are among the most prestigious "Grandes Ecoles"
  - ❖ 6 ParisTech Schools are in the top 10 out of 250 Engineering Schools in France
  - ❖ Each School is ranked #1 at the national level in its specific domain

- Shared-values

- ❖ High level education based on a highly selective system
- ❖ Scientific Excellence
- ❖ Strong interaction with companies, at international scale, in a multidisciplinary context



## HISTORY



- 1741 – ENSTA ParisTech
- 1747 – Ecole des Ponts ParisTech
- 1780 – Arts et Métiers ParisTech
- 1783 – MINES ParisTech
- 1824 – AgroParisTech
- 1882 – ESPCI Paris
- 1878 – Télécom ParisTech
- 1896 – Chimie ParisTech
- 1920 – Institut Optique Graduate School
- 1942 – ENSAE ParisTech

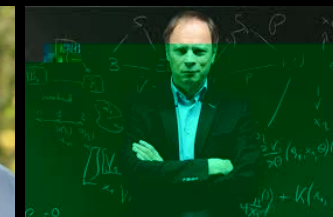
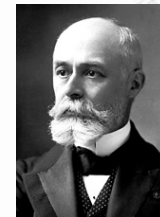
## FRENCH “GRANDES ÉCOLES”

- “Grandes Écoles”: Graduate Schools of Engineering, of Business ...
  - ❖ ≠ Universities
- Created in the 18<sup>th</sup> century, as a response to the needs of the industrial world
- Strengths of French Graduate Schools of Engineering & Science
  - ❖ Highly selective system
  - ❖ Degrees based on scientific and engineering courses as well as humanities, social, economic and business courses
  - ❖ Individually tutored students (small groups, 1:5 professor/student ratio)
  - ❖ Many group projects and several industrial and research internships in the curricula
  - ❖ Strong links with companies in research labs and teaching
- Very high employment opportunities: **top managerial positions** in all economic sectors, **high-level academic** positions, **leaders in the Public Sector**, entrepreneurs creating their own **start-ups**

## A LONG TRADITION OF SCIENTIFIC EXCELLENCE

*Cauchy, Coriolis, Fresnel,  
Navier, Gay-Lussac, Poincaré, ...*

- Pierre & Marie Curie, *Physics (Nobel)* - 1903
- Henri Becquerel, *Physics (Nobel)* - 1903
- Henri Moissan, *Chemistry (Nobel)* - 1906
- Marie Curie, *Chemistry (Nobel)* - 1911
- Frédéric & Irène Joliot-Curie, *Physics (Nobel)* - 1935
- Maurice Allais, *Economics (Nobel)* - 1988
- Pierre-Gilles de Gennes, *Physics (Nobel)* - 1991
- Georges Charpak, *Physics (Nobel)* - 1992
- Alain Aspect, *Physics (Wolf Prize)* - 2010
- Jean Tirole, *Economics (Nobel)* - 2014





## PARISTECH ALUMNI CORPORATE EXECUTIVES

- Philippe Varin, CEO, Areva
- Jean-Bernard Levy, CEO, EDF
- Isabelle Kocher, CEO, ENGIE
- Carlos Ghosn, CEO, Renault-Nissan
- Patrice Caine, CEO, Thales
- Patrick Pouyanné, CEO, TOTAL
- Jacques Aschenbroich, CEO, Valeo
- Xavier Huillard, CEO, Vinci
- Patrick Drahi, CEO, Altice (Virgin Mobile, SFR...)
- Tidjane Thiam, CEO, Crédit Suisse
- Eric Labaye, CEO, McKinsey Europe
- Jean Beunardeau, Director, HSBC Europe
- Patrick Pelata, Vice-President, Salesforce
- Jean-Luc Vaillant, Co-founder and CTO, LinkedIn
- Vincent Dureau, Co-founder, Google TV
- Henri Moissinac, former Director, Facebook Mobile, now at UBER
- Luc Julia, former Director, Apple – Siri, now Vice-President, Samsung
- Paul Andreu, Architect
- Jean-Marie Duthilleul, Architect
- Michel Virlogieux, Bridge specialist



UBER



## PARISTECH ALUMNI LEADERS IN THE PUBLIC SECTOR

As Presidents, Ministers, Chiefs of Staff to Ministers, Scientific and Technical Advisers, ParisTech Alumni have planned, designed and implemented the large-scale technological programs in France and in their home country



## PARISTECH ALUMNI SUCCESSFUL START-UPS



400 million+ members – Acquired USD\$26.2 billion by Microsoft



NASDAQ Market Capitalization USD\$2.8 billion



Valued at USD\$1.6 billion



100 million Euros raised



Acquired 50 million Euros by Dassault Systems



Acquired 50 million Euros by Crédit Mutuel



Inventor of the Nao Robot – Acquired by SoftBank



Acquired by Aldebaran Robotics



Ultra-light (4kg) Titanium Seats for Aircrafts



Acquired by Bentley Technologies



Daylighting System with Fiber Optic





## PARISTECH SCHOOLS

- **10** « Grandes Ecoles » in Engineering & Science
- **3** campuses: Paris, Saclay, Marne-la-Vallée
- **14 000** students / **2 500** professors / **110** Research labs
- **200 000** alumni



										
<b>Mathematics &amp; applications</b>				●	●	●			●	●
<b>Information and communication sciences and technologies</b>						●		●	●	●
<b>Life sciences and engineering</b>	●									
<b>Earth sciences and environmental engineering</b>	●			●					●	
<b>Physics, optics</b>						●	●	●	●	●
<b>Chemistry</b>			●				●			
<b>Energy</b>		●				●			●	
<b>Material science, mechanics and mechanical engineering</b>		●	●	●		●	●		●	
<b>Economics and social sciences, management, statistics</b>	●				●				●	●
<b>Industrial engineering</b>		●		●		●			●	

## AGROPARISTECH

- Life Science, Biology, Animal Science, Food Science & Technology, Agronomy, Crop Science, Plant Protection, Forestry, Environmental Science & Engineering, Management of Environment, Mathematics & Modelling for Life Sciences



## ARTS ET MÉTIERS PARISTECH

- Mechanics, Materials, Manufacturing Processes, Fluids and Energy Systems, Design Industrialization, Decision Making, Risk

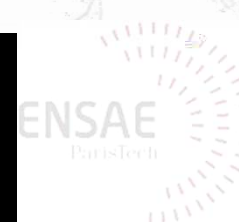


## CHIMIE PARISTECH

- Organic and Bioorganic Chemistry, Solid State Chemistry and Materials Science, Theoretical Chemistry, Nuclear Chemistry, Chemical and Process Engineering, Risk Management



ParisTech





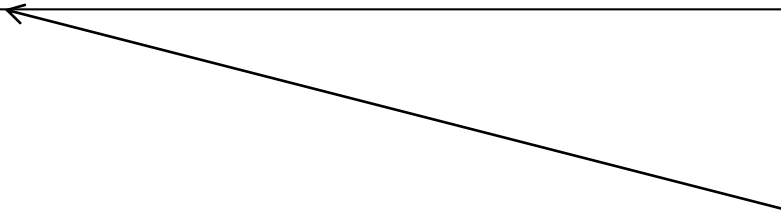
## ECOLE DES PONTS PARISTECH

- Transportation, Civil & Environmental Engineering, Mathematics & Finance, Engineering mechanics & Materials Science, Industrial Engineering & Logistics, Town & country planning



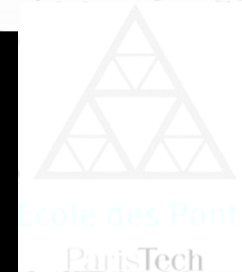
# ENSAE PARISTECH

Economics & Econometrics, Quantitative Economics & Finance,  
Statistics, Actuarial Science



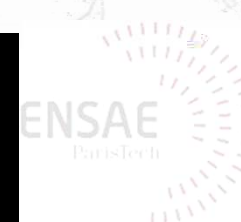
## ENSTA PARISTECH

- Automotive and Railway Transport, Maritime Engineering, Electronuclear Energy, Energetic Systems, Offshore Energies Engineering, Optimization, Operational Research and Command, Quantitative Finance, Modelling and Simulation, Robotics and Embedded Systems, Information Systems, Systems Engineering



## ESPCI PARIS

- Environmental chemistry, Organic synthesis Bioengineering and Biophysics, Optics, Acoustics and Imaging, Microfluidics and Soft Nanotechnology, Soft Matter and Complex Materials Engineering, Chemical Engineering, Fluid Mechanics



## INSTITUT D'OPTIQUE GRADUATE SCHOOL

- Physics of light and its interaction with matter, Mathematics, Electronics and computer science for signal and image processing, Ray optics and aberrations, Advanced wave optics, Instrumentation Optical system design, Imaging, Photometry, Detection, Lasers and electro-optics, non-linear optics, optical fibres, Detectors, Biophotonics, Nanophotonics, Space optics, Energy, Telecommunications with minors in technology and management of innovation





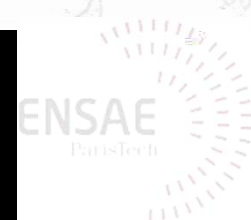
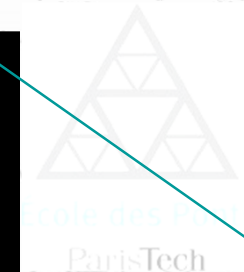
## MINES PARISTECH

- Major: Science and executive engineering, Minors: Applied mathematics, information technology, Control engineering and computer science, Computational Biology, Earth and environmental sciences, Materials sciences and engineering, Energy and chemical engineering, Economics and social sciences

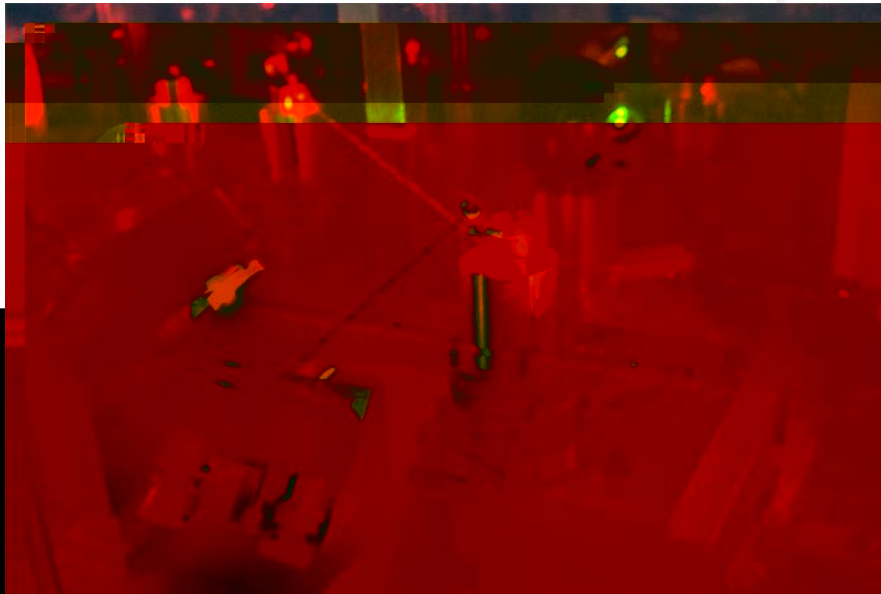


## TELECOM PARISTECH

- Information Technology, Telecommunications, Digital & Mobile Communications, Optical Communications, Electronics Computer Science, Networks, Signal & Image Processing, Security, Economics, Digital Society



## SCIENTIFIC EXCELLENCE



- 110 laboratories
- 5,000 research staff
- More than 500 PhD theses defended every year
- 18,000 publications along the last 5 years
- 350 M€ budget for Research
  - ❖ More than 100 M€ in research contracts with industry
- Research is the cornerstone of ParisTech Schools and occupies a prominent place. It is characterized by a wide multi-disciplinary approach in Science and Technology, international quality and close relationships with industry, services and the socio-economic world.

## STRONG INTERACTION OF PARISTECH WITH COMPANIES





## STRONG INTERACTION OF PARISTECH WITH COMPANIES

- Education
  - ❖ Lectures given by 2 900 engineers, researchers and managers

- Research
  - ❖ 60 chairs of teaching and research
  - ❖ 100 partner businesses
  - ❖ 1/3 of doctoral projects financed by companies
  - ❖ 2900 contracts with companies

- Entrepreneurship

- Executive Education
  - ❖ Nearly 25,000 participants of more than 80 nationalities per year

- Governance
  - ❖ Representatives of companies in the executive boards

- Examples of partnerships
  - ❖ VeDeCom – Institute of Excellence in Zero Carbon Energy
  - ❖ IMD – Sustainable Mobility Institute
  - ❖ Program in Nuclear Energy
  - ❖ Program in Bioengineering



## ENTREPRENEURSHIP AND INNOVATION

- More than 700 innovative projects already incubated
- More than 80% of the incubated innovative companies reach the milestone of the first five years of existence, or will either have been bought or merged with another group



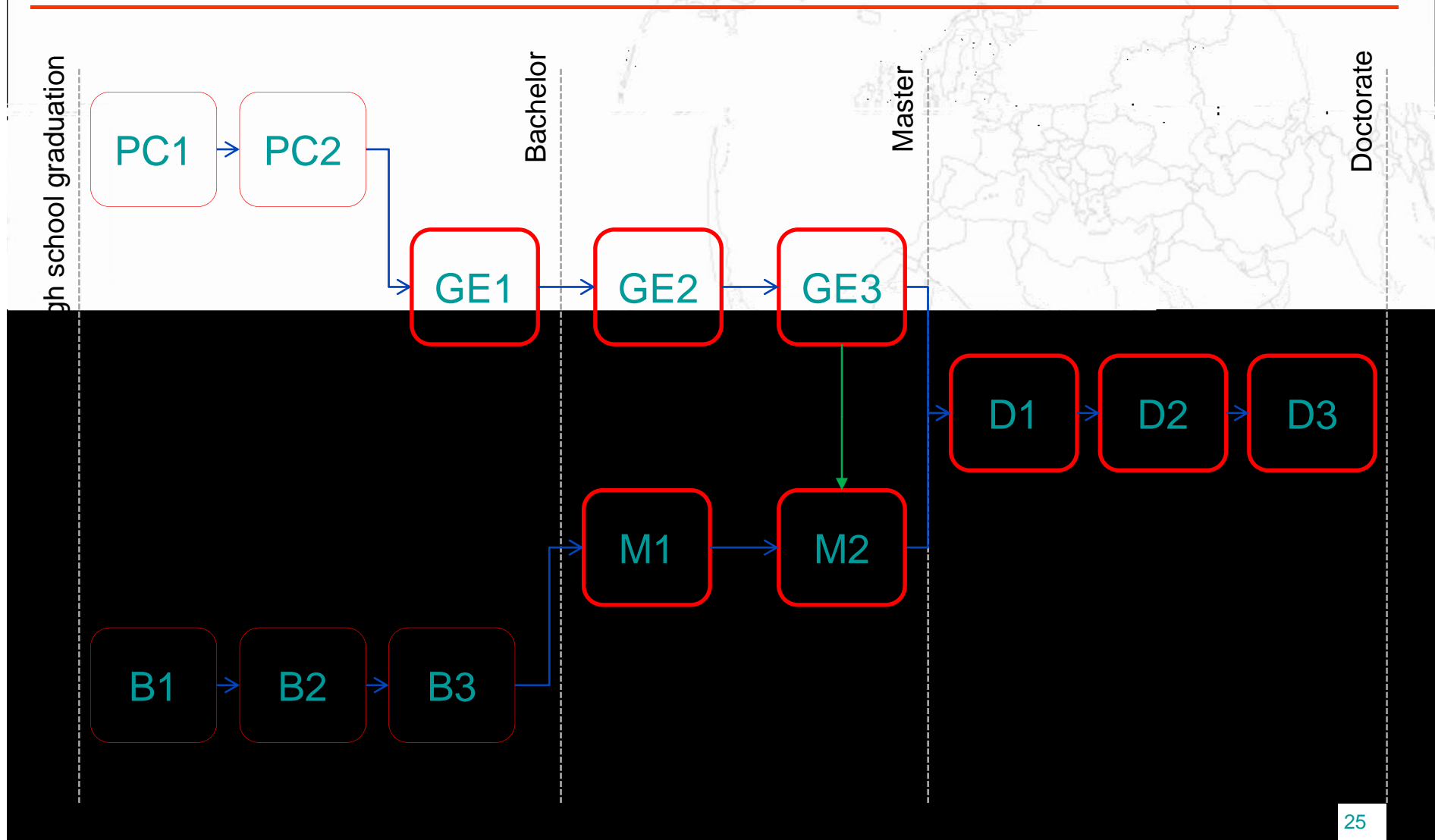
- The entrepreneurship network
  - ❖ Agoranov
  - ❖ ParisTech Entrepreneurs
  - ❖ Telecom ParisTech Eurécom Entrepreneurs
  - ❖ Incubateur du Centre Arts et Métiers ParisTech
  - ❖ Pollen
  - ❖ Le 503, entrepreneurship center of Institut d'Optique Graduate School
  - ❖ Incubateur Descartes
  - ❖ Incuballiance (in partnership with the schools of Paris-Saclay)

## PARISTECH SCHOOLS DEGREES

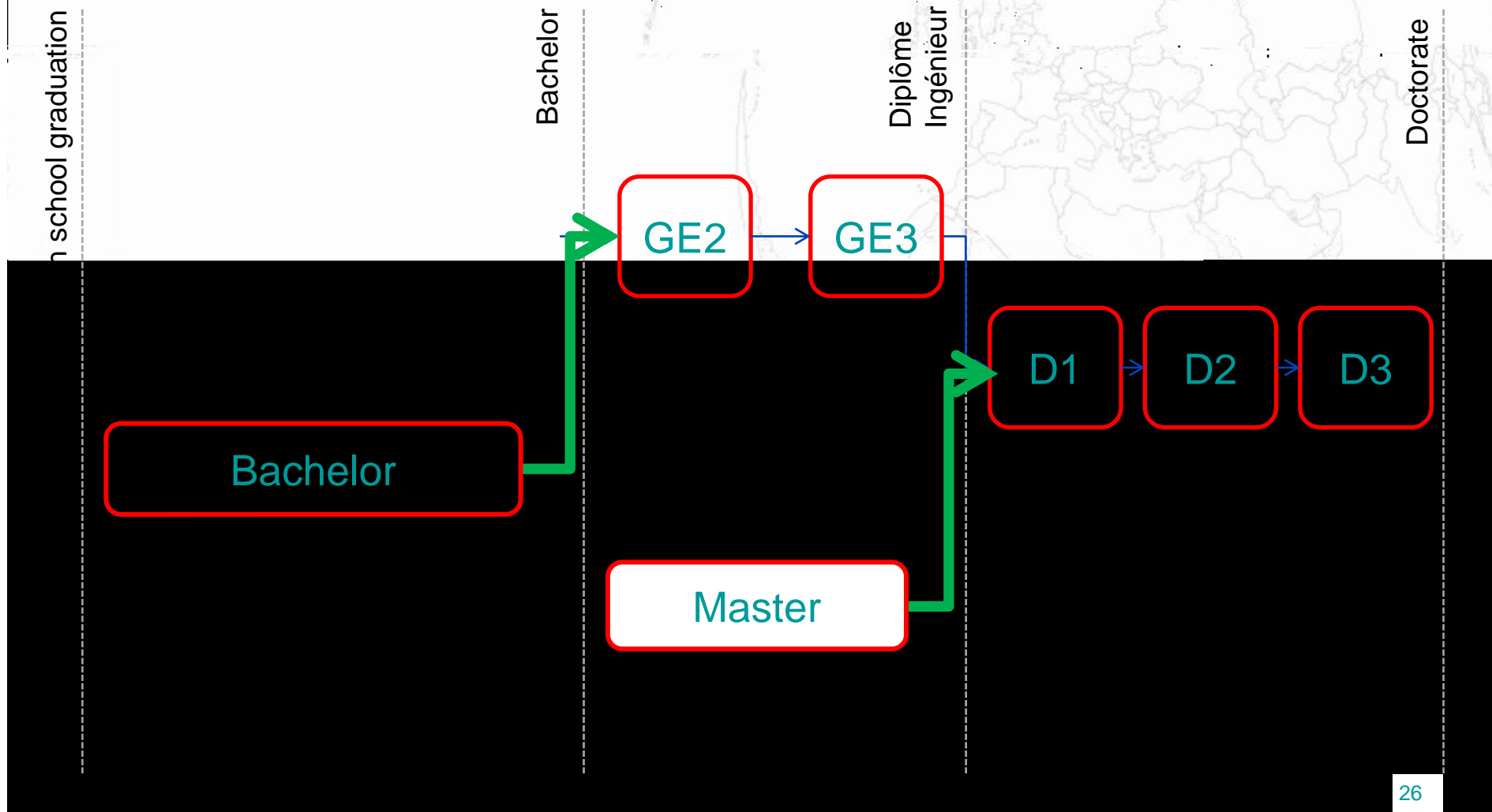
- *Diplôme d'Ingénieur* (MSc in Engineering)
  - Master of Science
  - Doctoral programs (PhD)
- 
- MBA
  - Executive Education



## ORGANISATION OF STUDIES PARISTECH SCHOOLS IN FRANCE



## MOBILITIES TO PARISTECH FOR INTERNATIONAL STUDENTS



## INTERNATIONAL

- More than 30% of international students, from more than 100 countries
- Foreign language courses (French, English, Arabic, Chinese, German, Hebrew, Italian, Japanese, Portuguese, Russian, Spanish, etc...)
- International exposure: internships, projects, exchanges & double degrees
- More than 85 agreements with international universities and institutes
- International and European exchange programs (ATHENS)
- Major involvement in European and international research projects
- Permanent offices in China and Brazil
- Sino-French Institutes in China
  - ❖ Sino-French Institute of Engineering and Management (IFCIM)
  - ❖ China-EU Institute for Clean and Renewable Energy (ICARE)
  - ❖ SJTU-ParisTech Elite Institute of Technology (SPEIT)
  - ❖ « Chimie Pékin » – Beijing University of Chemical Technology