Building the worlds of tomorrow

THE SCHOOL IN FIGURES
2017-2018
Present in the best international rankings, 3rd in France’s benchmark Etudiant/Express ranking, École des Ponts ParisTech enjoys an undisputed national and international reputation. The quality of its multidisciplinary education, based on innovative teaching methods, is rooted in the excellence of its research and its close links with the world of business. While the historical source of its prestige lies with civil, environmental, and mechanical engineering, today École des Ponts ParisTech offers education of the highest quality in varied domains, be it applied mathematics, economics, or industrial engineering.

École des Ponts ParisTech educates high-potential engineers and future top-level executives with a scientific and technical background, ready to take on society’s great challenges of today and tomorrow, especially in fields associated with the city and the environment, and their engineering needs.

The School in Figures offers an overview of our school in all its richness and diversity, relating to its three primary missions: education, research, and the dissemination of knowledge.

Sophie Mougard
Director of École des Ponts ParisTech

**A WORD FROM THE DIRECTOR**

**STUDENTS**

- 827 engineering students
- 1,847 students, 1/4 of them women
- 104 enrolled in Masters programs including 44 for double degrees
- 288 on the MBA program
- 273 École des Ponts ParisTech PhD candidates
- 15 enrolled in post-examination education as State Architects and Planners (AUE)
- 384 enrolled in Advanced Masters and specialist programs

**FACULTY**

- 349 teachers in charge of course modules
- 1,278 part-time lecturers
- 88 École nationale des ponts et chaussées professors, assistant professors and lecturers
- 441 research and teaching staff

**RESEARCHERS**

- €8,843M in partnership research including 54% directly with companies
- 530 PhD candidates
- 72 postdoctoral researchers
- 924 publications (WoS or Scopus), including 43% with a foreign partner

* Scope: School laboratories
The engineering degree program

△ FIRST YEAR
- Consolidation of scientific and general knowledge, projects (research and departmental)
- Work experience: the year ends with a 4-weeks hands-on internship in a company

△ THE MASTERS PROGRAM
2nd Year: choice of a Department for specialization
- Civil and Structural Engineering
- City, Environment, Transportation
- Mechanical Engineering and Materials Science
- Industrial Engineering
- Economics, Management, Finance
- Applied Mathematics and Computer Science

Year 2: Internship
Between the 2nd and 3rd Year, some 80% of the year group undertake an optional long internship (1 year), more than 30% of them abroad. The other students do a short internship in a company or research facility (3 months), 20% of them abroad.

Year 3: Final Project (PFE)
For at least 4 months, students apply the skills acquired in their program to a scientific or technical problem, in a company or research facility, either individually or in a group [Multidisciplinary Engineering Project].

△ INTERNATIONAL MASTERS DEGREES
- Master Renault Foundation Masters in Transportation and Sustainable Development (TRADD)
- Masters in Water, Soil and Waste Management and Treatment (GTESD)
- Masters In Mobility and Electric Vehicles (MVE)
- Master Internacional en Empresa y Políticas Públicas (MIEPP) - institutional degree

△ MASTERS
- Mechanical Engineering stream
  3 specialist options, including:
  - Multiscale Approaches for Materials and Structures (AMMS)
- Civil Engineering stream [co-accreditation with UPEM and UPEC]
  3 specialist options, including:
  - Mechanics of Soils, Rocks, and Structures in their Environment (MSROE)
- Materials Science and Engineering stream [co-accreditation with UPEM and UPEC]
  2 specialist options, including:
  - Materials Science for Sustainable Construction (SMCD)
- Transportation, Mobility, Networks stream [co-accreditation with UPEM and UPEC]
  1 specialist options
  - Transportation, Mobility (TM)
- Environmental, Energy, and Transportation Economics stream [co-accreditation with Paris Saclay University, Paris Ouest Nanterre La Défense University, and EHESS]
  3 specialist options:
  - Environmental Economics
  - Energy Economics
  - Forward Modeling
- Environmental Science and Engineering stream
  2 specialist options:
  - Aquatic Systems and Water Management (SAGE) - co-accreditation with UPEC and Paris 7 Diderot University
  - Ocean, Atmosphere, Climate, and Space Observations (OACOS) - co-accreditation with UPMC, ENS Paris, ENSTA ParisTech, and École Polytechnique
- Quantitative Economics stream
  2 specialist options:
  - Analysis and Political Economy (APE) - co-accreditation with ENS Paris, EHESS, ENSAE ParisTech, and École Polytechnique,
  - Public Policies and Development (PPD) - co-accreditation with ENS Paris and EHESS

△ Masters
- Economic Decision and Cost Benefit Analysis (ED-CBA)

4 IDEFI, Excellence in Innovative Education Initiatives
- Paris-Est d.school at École des Ponts dedicated to learning by «design thinking». Within multidisciplinary teams, it fosters the design of innovative products or services by matching user expectations, feasibility, and economic viability.
- IDEA seeks to provide a range of innovative courses to improve the quality of teaching and facilitate lifelong access to education and success.
- U-TOP is about constructing a multi-partner and interdisciplinary remote learning scheme.
- FORCAST enables students to use state-of-the-art digital tools to map scientific or technical controversies.
Advanced Masters - Mastères spécialisés®

- Full-time:
  - Planning and Urban Commissioning
  - Urban Engineering and Information Technology (UrbanTIC) with EIVP
  - European Civil Engineering
  - Engineering of Large Energy Structures with CentraleSupélec
  - Public Policy for Sustainable Development with AgroParisTech

- Part-time:
  - Design by Data, Computational Design, Digital Manufacturing, and Building Technologies
  - Sustainable Real Estate and Building, Energy Transitions and Digital Technology (formerly IBE)
  - BIM, Integrated Design and Life Cycles of Buildings and Infrastructures with ESTP Paris
  - Smart Cities Engineering and Management (formerly Integrated Urban Systems) with EIVP
  - Rail and urban transit systems with ENSIAME Valenciennes and Hainaut Cambrésis University, Compiègne University of Technology, and ENTPE
  - Smart Mobility - Digital Impact on Mobility Systems with Télécom ParisTech:
  - Supply Chain Design & Management with IML
  - Infrastructure Project Finance
  - Advanced Public Action Morocco with Mohammed VI Polytechnic University: first academic year April 2018

École des Ponts Business School

The business school, accredited by the MBAs Association, has just celebrated its 30th anniversary. It provides programs that are resolutely innovative both in their philosophy and in their teaching approach:

- Executive Doctorate of Business Administration (Paris)
- Global Executive MBA (Paris and Casablanca)
- TEE Executive MBA (Beijing, Franco-Chinese degree)
- Full-Time MBA in Innovation Management (Paris)
- «International Management» program (cIM - open to Écoles de ParisTech engineering students and PhD candidates)

Lifelong learning

Ponts Formation Conseil is the leading lifelong learning body for engineering schools

The PhD programs

The research labs at École des Ponts ParisTech are a training ground for many PhD students.

- 530 PhD candidates present in 2018: 45% of foreign origin, 39% women
- 170 theses defended in 2017, including 88 École des Ponts ParisTech theses

10 main graduate schools (ED) affiliated to the laboratories:
- 4 Université Paris-East Graduate Schools: City, Transportation, and Territories; Science, Engineering, and Environment; Mathematics and ICT, Organizations, Markets, Institutions.
- 6 Île-de-France Graduate Schools: Agriculture, Food, Biology, Environment and Health [AgroParisTech] / Advanced Social Science Studies / Île-de-France Environmental Sciences (UPMC) / Île-de-France Astronomy and Astrophysics (Paris-Saclay University) / Mechanical, Energy, Materials Sciences and Geosciences [Paris-Saclay University] / Economics Panthéon-Sorbonne (EHESS).

IHEDATE (Institute of Advanced Development and Planning Studies in Europe):
IHEDATE’s annual training program is supported by the state (General Commission for Regional Equality, Ministries), regional groupings (Régions de France, AdCF), the City of Paris, private and public companies (Immochan, Caisse des dépôts, Colas, ERDF, EDF, Groupe La Poste, SNCF Réseau, Bouygues, RTE, SMA-BTP), and professional bodies (ASFA, FNTP, USIRF, UIMM).
The laboratories

12 research laboratories, including 6 national mixed research units (individual labs or in partnership with academic entities, public bodies, and companies).

4 FLAGSHIP DISCIPLINES

- Mathematics and Computer Science
  - CERMICS: applied mathematics, scientific calculus, modeling, optimization
  - LIGM: computer science, natural language analysis, image and signal processing, algorithmics, formal calculus

- Mechanics and Physics of Materials and Structures
  - NAVIER: mechanics and physics of materials and structures, applications to geotechnics, to civil engineering, to geophysics, and to oil development
  - LHSV: fluid mechanics applied to hydraulics and the environment (riverine, coastal, and harbor zones)

- Environmental Sciences and Engineering
  - CEREA: air quality, pollutant dispersion and transportation, atmospheric modeling at urban and regional scale, data assimilation
  - CIRED: developmental and environmental economics, issues of energy/waste/transportation/water/food, global environmental issues, precautionary principle, modeling
  - HM&Co: multiscale observation and analysis, system-based modeling, managing water as risk and resource, hydrology for a resilient city
  - LEESU: the urban milieu and its environment, analysis of urban and periurban territories in their sociotechnical and environmental behavior
  - LMD: atmospheric dynamics, study of climate and its interannual fluctuations, continental and global scales

- Economics & Social Sciences
  - LATTs: social sciences, spatial planning, history, dialogue between social sciences, technology, and engineering, in both the corporate and public sectors
  - LVMT: analysis and modeling of the interactions between transportation and spatial planning
  - PjSE: theoretical economics in public economics and in labor market economics

Programs that structure the scientific communities

- Bézout (LabEx): Deterministic and stochastic models, discrete mathematics and algorithms, large dimension phenomena, imaging and geometry
- Futurs urbains (LabEx): Environment, transportation, planning, architecture for urban conditions
- L-IPSL (LabEx): Climate change and consequences at the relevant spatial and temporal scales for political and economic decision-making
- MMCD (LabEx): Multiscale modeling and testing of materials for sustainable construction, properties of civil engineering, and environment materials
- OSE (LabEx): Economics, globalizations and development, markets and organizations, foundations of individual, strategic, and social behaviors
- SITES (LabEx): Science and technology, society, research and innovation processes and policies
- ESEP (LabEx): Spatial exploration of planetary environments
- Efficacity (ITE): Institute for Urban Energy Transition - founding member
- Advancity (competitiveness cluster): Sustainable city and mobility

The industrial chairs

CITY AND MOBILITY SYSTEMS
- Innovative Solutions for a Sustainable and Responsible Habitat in partnership: with Saint-Gobain
- Transportation Infrastructure Management: with Abertis et IFSTTAR
- Reinventing Stations in the 21st Century (LVMT): with SNCF Gares & Connexions
- Sciences for Rail Transportation (NAVIER): with Eurotunnel
- Smart Cities and Value Creation: with KPMG

MANAGEMENT OF RISKS, RESOURCES, AND MILIEUS
- Fluid Mechanics Applied to Hydraulics and the Environment (LHSV): with EDF
- Hydrology for a Resilient City (HM&Co): with Veolia

INDUSTRY OF THE FUTURE
- Operational Research and Learning (CERMECS): with Air France
- Materials Science for Sustainable Construction (NAVIER, CERMECS): with Lafarge
- Sustainability of Energy-Related Materials and Structures (NAVIER): with the European Foundation for the Energies of Tomorrow, EDF, ENGIE, GRT Gaz, and MINES ParisTech

ECONOMICS, PRACTICES AND SOCIETY
- Forward Modeling for Sustainable Development (CIRED): with EDF, Total, Schneider Electric, ADEME and Mines ParisTech
- Socio-Economics and Modeling of Public Urban Passenger Transit (LVMT): with Ile-de-France Mobilités
- New Economic Approach to Territorial Mobilities (LVMT): with SNCF, IFSTTAR and UPEM
- Development and Financing of Sustainable Infrastructure Projects (CIRED): with Meridiam

4 socio-economic priorities for ecological transition:
Research activities contribute to tackling the challenges of 4 socio-economic priorities of sustainable development:
- City and mobility systems
- Management of risks, resources, and milieus
- Industry of the future
- Economics, practices, and society
La Source, the school’s learning centre

- 200 seats, 6 project-spaces, 4 carrels, individual workspaces
- 32,000 visits a year, 6,145 registered users, 8,000 documents supplied each year
- 61 opening hours per week from October to June inclusive
- 212,000 documents third-year undergraduate, Masters and research level documents, covering the School’s fields of teaching and research
- 14,500 e-books, 15,000 electronic journal titles
- 120,000 visits to the library portal bibliothèque.enpc.fr and its search engine search.enpc.fr - 202,000 pages accessed on the digital library platforms
- two excellence awards: Associate Branch of the French National Library for civil and structural engineering, CollEx (excellence in research collections) on the theme of the City: architecture, civil engineering, urbanism

An exceptional legacy and heritage

- A collection of 80,000 documents, manuscripts, and prints from the 18th to the 20th centuries
- digitized library collections : patrimoine.enpc.fr, bibliothèquesdesphares.fr, gallica.bnf.fr, archive.org, photo-arago.fr for photographic collections
- a photo library of 13,000 images (bridges, canals, stations, portraits of engineers...)
- 14,000 archive dossiers, i.e. 1,514 linear meters of historical and contemporary archives
- museum collections, a witness to the history of France’s first engineering school

Targeted services for researchers

- A dedicated portal for scientific and technical resources and information services for researchers http://espacechercheurs.enpc.fr
- Access to the main scientific journal platforms and scientific, technical, and economic databases

PERSONNEL AND RESOURCES

513 staff employed by the School and its subsidiaries as of December 31, 2017 (excluding part-time lecturers and civil servants in training)

192 including 513 researchers

PRE-TAX REVENUES OF SUBSIDIARIES IN 2017

Ponts Formation Conseil €6.9 million
MIB Développement €2.65 million

Resources of
€49.4 million

€26.4 million Public service subsidy from MTES (Ministry of Ecological and Community Transition)
€10.4 million Research contracts (including sponsorship: €1.7 million)
€0.6 million Apprenticeship tax
€4.4 million Various
€7.6 million Tuition fees

Tuition fees

513

Including

192

researchers
AVERAGE SALARY IN FIRST JOB

€43,800
€51,800 with bonuses and allowances

THE SCHOOL IN NATIONAL AND INTERNATIONAL RANKINGS

International QS Rankings 2019: the School rises 7 places compared with 2018.
It is placed 263 in the overall international ranking and 8th among French institutions. This ranking places the world’s top 1000 schools in 85 countries.

2018 THE (Times Higher Education) international ranking: the School rises 100 places compared with 2017. It is placed in the 251–300 bracket out of almost 1000 institutions worldwide. It is also in the 251–300 bracket in the «Engineering and Technology» category among 500 institutions worldwide. It has risen 50 places compared with the 2017 edition.

National Etudiant/l’Express ranking 2017: the School is ranked 3rd among French schools. It is recognized as one of the best engineering schools, notably on the criteria of academic excellence, openness to the world, and contacts with the business community.

DEGREES AWARDED IN 2017

240 engineering degrees
111 Masters degrees
88 PhDs
162 École des Ponts Business School MBAs
244 masters specialises®

CAREER PATHS

795 international students in 2017
87 of them studying for a double-degree in engineering
42 double-degree agreements with universities in 25 countries
65 students training as engineers (3rd year) abroad

INTERNATIONAL RELATIONS

67 partner universities in 34 countries on 4 continents
42 double-degree agreements with universities in 25 countries
65 students training as engineers (3rd year) abroad
87 students on engineering courses abroad

Source: 2017 survey of 2016 graduates (excluding civil servants)
LES PRESSES DES PONTS

Established in 1977, Les Presses des Ponts has a catalog of 220 books and scientific and technical software applications primarily in the fields of civil and structural engineering, and spatial planning.

FONDATION DES PONTS

Officially recognized as a public interest entity, the Foundation collects contributions from companies, graduates, and friends of the School who, through their donations, help the School to be ever more open to the world of today, more innovative and effective, and thereby to maintain its image of excellence against a background of ever-growing international competition.

In the last 10 years, more than 650 graduates from year groups 1929 to 2017 and more than 70 companies or organizations, both private and public, have given their support to the development of education, research, innovation, and entrepreneurship, and have helped the best students gain access to the School’s course programs.

Resources collected in 2017 (net of management costs)
- donations or legacies from individuals: €0.7 million
- chairs or partnerships: €1.7 million

Use of donations:
80%: Research, teaching, and innovation (chairs, «Paris-Est d.school at École des Ponts program, mastères spécialisés®)
20%: Prizes for excellence, scholarships, and loans for international travel, incentives for entrepreneurship, social diversity

PONTS ALUMNI PARISTECH

Ponts Alliance changed its name in 2018, to become Ponts Alumni ParisTech. A public interest entity established in 1860, this organization encompasses the School’s 20,240 graduates: civil engineers, state engineers, holders of Masters degrees, PhDs, or MBAs. The alumni network, run by Ponts Alumni ParisTech, is present in 99 countries and in all the School’s sectors of activity. It notably encompasses 22 geographical groups, 17 professional groups - four of them jointly with other grandes écoles - and 6 social club.