



École des Ponts
ParisTech



ESCOLA
POLITÉCNICA
DA USP



ÉCOLE DES PONTS PARISTECH
Building the worlds of tomorrow

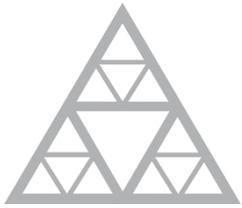


École des Ponts

ParisTech

A world-class Higher Education and Research Institution

- A public engineering school recognised for the excellence of its graduate studies
- Founded in 1747
- International outlook
- A unique combination of fundamental and applied sciences, to transform business and society.
- Flexible and interdisciplinary engineering curriculum
- Leading to executive careers
- Striving for the ecological and digital transition



École des Ponts

ParisTech

A long and prestigious history

The oldest School of engineering in Europe

- **1747:** École nationale des ponts et chaussées founded by King Louis XV
- **1851:** First research laboratory
- **1988:** 1st Double Degree agreement with international universities
- **1997:** Relocation in Marne-la-Vallée, Green City Campus
- **2021:** Founding member of EELISA European University



Henri Becquerel
1852-1908
-Physicist-
Nobel prize 1903



Augustin Cauchy
1789-1857
-Mathematician-
One of the founders of modern
analysis



Eugène Freyssinet
1879-1962
-Engineer, entrepreneur-
The father of prestressed
concrete



Louis Ménard
1931-1978
-Engineer-
Developer of the pressiometer



**Claude-Louis-Marie-Henri
Navier**
1785-1836
-Engineer, scientist-
Inventor of general theory of
elasticity



Jean Résal
1854-1919
-Engineer-
Builder of the pont Mirabeau
and pont Alexandre III in Paris



Jean Tirole
1953-...
-Economist-
Nobel prize 2014



Louis Joseph Vicat
1786-1861
-Engineer-
Inventor of concrete



École des Ponts

Alumni in industry and government



Elisabeth Borne
Ponts 1986
Former Prime Minister



Benoit de Ruffray
Ponts 1993
CEO Eiffage



Diane D'Arras
Ponts 77
Europe Delegate for
Water, President IWA



Jean-Marc Samuelian
Ponts 2011
CEO Alan / Expliseat



Estelle Brachlianoff
Ponts 1997
CEO Veolia



Mostafa Terrab
Pont 1979
CEO OCP Group



Christelle Heydemann
Ponts 1997
CEO Orange



Frabrice Fourcade
Ponts 1989
Chairman EDF China



École des Ponts
ParisTech

Remarkable works, designed by Ecole des Ponts ParisTech Alumni



Viaduc Millau - Michel Virlogeux



Beijing Opera – Paul Andreu



Gardens by the Bay (Singapore)
© Atelier one – passage project



Cristo Redentor
Albert Caquot



École des Ponts

ParisTech

Rankings and certification



International QS Rankings 2024: + 71 spots in one year.

#174 worldwide

#180-190 Graduate Employability Ranking

#6 France



2024 THE (Times Higher Education) international ranking: +8 spots in one year.

#251-300 worldwide

#1 France < 5000 students



National Etudiant ranking :

#4 France



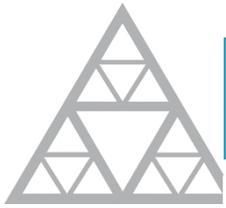
Choose France certification

Highest level of certification of welcome procedures and programmes for international students



AFAQ ISO 9001 certification

Quality management



International partnerships

École des Ponts
ParisTech

71 partner universities

IN 35 countries

ON 4 continents

47 double-degree agreements with universities

IN 25 countries

1 European University



Europe:
39 partner universities
19 double-degrees
20 Erasmus exchange agreement

ETH zürich

Imperial College London



TU Delft



Asia:
9 partner universities
8 double-degree
1 exchange agreement

MIT
MANAGEMENT
SLOAN SCHOOL



Americas
16 partner universities
13 double-degree
3 exchange agreements



GT
GEORGIA TECH

Tufts

4 Global initiatives

Programme de Formation d'Ingénieurs d'Excellence - PFIEV (Vietnam)
Co-Innovation Center (Tongji, Shanghai)
Joint Education and Research Center (UM6P, Maroc)
Capacity Building Program funded by the WorldBank (INP-HB, Côte d'Ivoire)



UFRJ

UFMG

USP
Universidade de São Paulo

Africa / Middle-East:
9 partner universities
6 double-degrees
2 exchange agreements



東京大学
The University of Tokyo





École des Ponts ParisTech and Brazil

École des Ponts

ParisTech

Academic partnerships, and Research cooperation

- Long standing relations with top Universities



ESCOLA
POLITÉCNICA
DA USP



- Brazilian students are #1 international students : 15 / year

With EP-USP :

Double-degree agreement since 2002, 6 students per year

Exchange agreement : 3 students per year

113 alumni since 2002

- Active community of Alumni in Brazil (250)





École des Ponts

ParisTech

Governance and funding

- **State-owned institution**
 - Reports to the Ministry for the Ecological Transition and to the Ministry of Higher Education, Research and Innovation
- **Governing bodies:**
 - Board of Directors, 24 seats, 8 for industry representatives
 - Graduate School Council
 - Scientific Council
- **Funding:**
 - Annual budget: 47 M€
 - 50% by the Ministry for the Ecological Transition
 - 50% by industry



École des Ponts

ParisTech

Key facts and figures

Students :

- 870 students in the MSc in engineering / Diplôme d'ingénieur
- 130 in Master's programmes
- 300 in Advanced Master's programmes
- 500 PhD candidates and postdocs
- 200 in Business Administration programmes

i.e. a total of: **2 000** students, **33%** female

45% international students, **45** nationalities

1 200 instructors (academics, researchers, business practitioners)

12 research laboratories

450 permanent scientists

7 labs of excellence

15 education and research chairs

1000 rank A publications, including **45%** with a foreign partner



École des Ponts
ParisTech

Close links with industry

AIRFRANCE KLM, RATP, île de France mobilités, setec, HAROPA Ports de Paris Seine Normandie, AÉROPORTS DE PARIS, Keolis, ALSTOM, Ansaldo STS, AIR LIQUIDE, AIRFRANCE, SNCF, abertis, BOMBARDIER l'évolution de la mobilité, ASFA, SYSTRA LA CONFIANCE TRANSPORTE LE MONDE

Transportation,
environment,
urban services

Capgemini CONSULTING. TECHNOLOGY. OUTSOURCING, accenture High performance. Delivered., OLIVER WYMAN, BCG THE BOSTON CONSULTING GROUP, KPMG, ATKearney, McKinsey & Company

Consulting

dalkia GROUPE EDF, AREVA, suez environnement, ENGIE, TOTAL, EDF

Energy

SAINT-GOBAIN, LafargeHolcim, INGÉROP Inventons demain, COLAS, BOUYGUES CONSTRUCTION, LEON GROSSE, EIFFAGE, egis, VINCI, RAZEL-BEC FAYAT, ARTELIA

Construction

RENAULT Passion for life, CISCO, WÜRTH, LVMH MOÛT HENNESSY LOUIS VUITTON, MICHELIN, VEOLIA ENVIRONNEMENT, SIEMENS, THALES, LAPEYRE, Nestlé, OCP, Valeo, unibail·rodamco, NAVAL GROUP, Schneider Electric

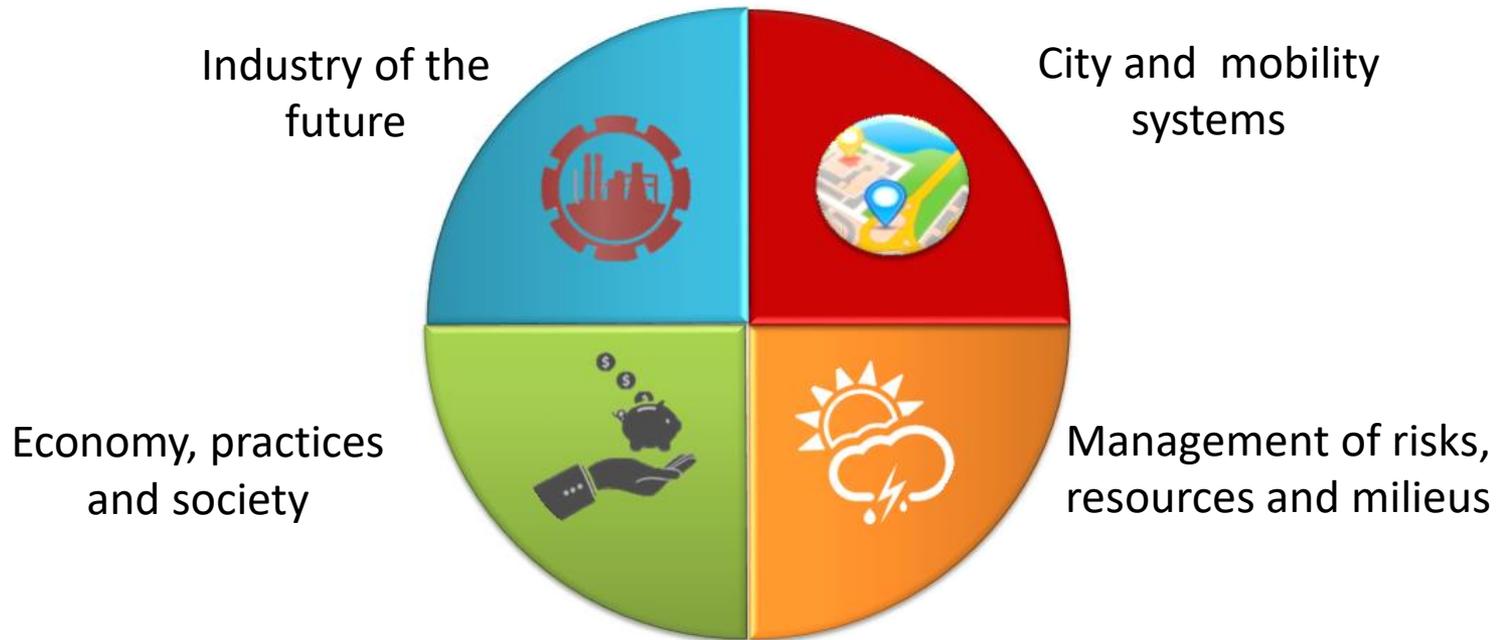
Industry

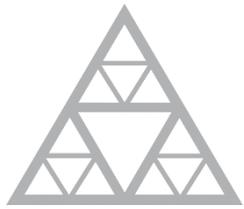
THE WORLD BANK, afd AGENCE FRANÇAISE DE DEVELOPPEMENT, HSBC, meridiam, BNP PARIBAS, SOCIETE GENERALE

Finance

Research for the ecological and digital transition

A challenge-based approach to address 4 socio-economic issues of sustainable development





École des Ponts

ParisTech

Research for the ecological and digital transition

- Ecomaterials
- Digital Manufacturing
- Innovative Structures
- Geomechanics

NAVIER

- Sustainable mobility
- Territorial dynamics

LVMT

- Modelisation of uncertainty
- Digital simulation
- Systems optimisation

CERMICS

LEESU

- Urban waters
- Alternative resources

- Data processing
- 3D vision
- Big data

LIGM

CEREA

- Atmospheric environment
- Air quality
- Renewable energy

- Cities of the future
- Infrastructures
- Practices

LATTS

HM&Co

- Hydro-meteorological risks
- Resilient cities

- Public policies
- Environmental economy
- Markets and governance

PjSE

LMD

- Physics of atmosphere
- Climate

CIRED

LHSV

- Sustainable development
- Climate change

- Renewable energy
- Natural risks





École des Ponts

ParisTech

The Co-Innovation Lab

Collaborative platforms improving transfer to industry



Fresnel : multi-scale observation and modelling platform for resilient cities
X-band dual polarisation weather radar, lidars, disdrometer...

Build'In : building systems and artificial intelligence, materials and structures optimisation, industrial processes
Robotic hall, large-scale additive manufacturing unit, concrete and composite materials modelling
...

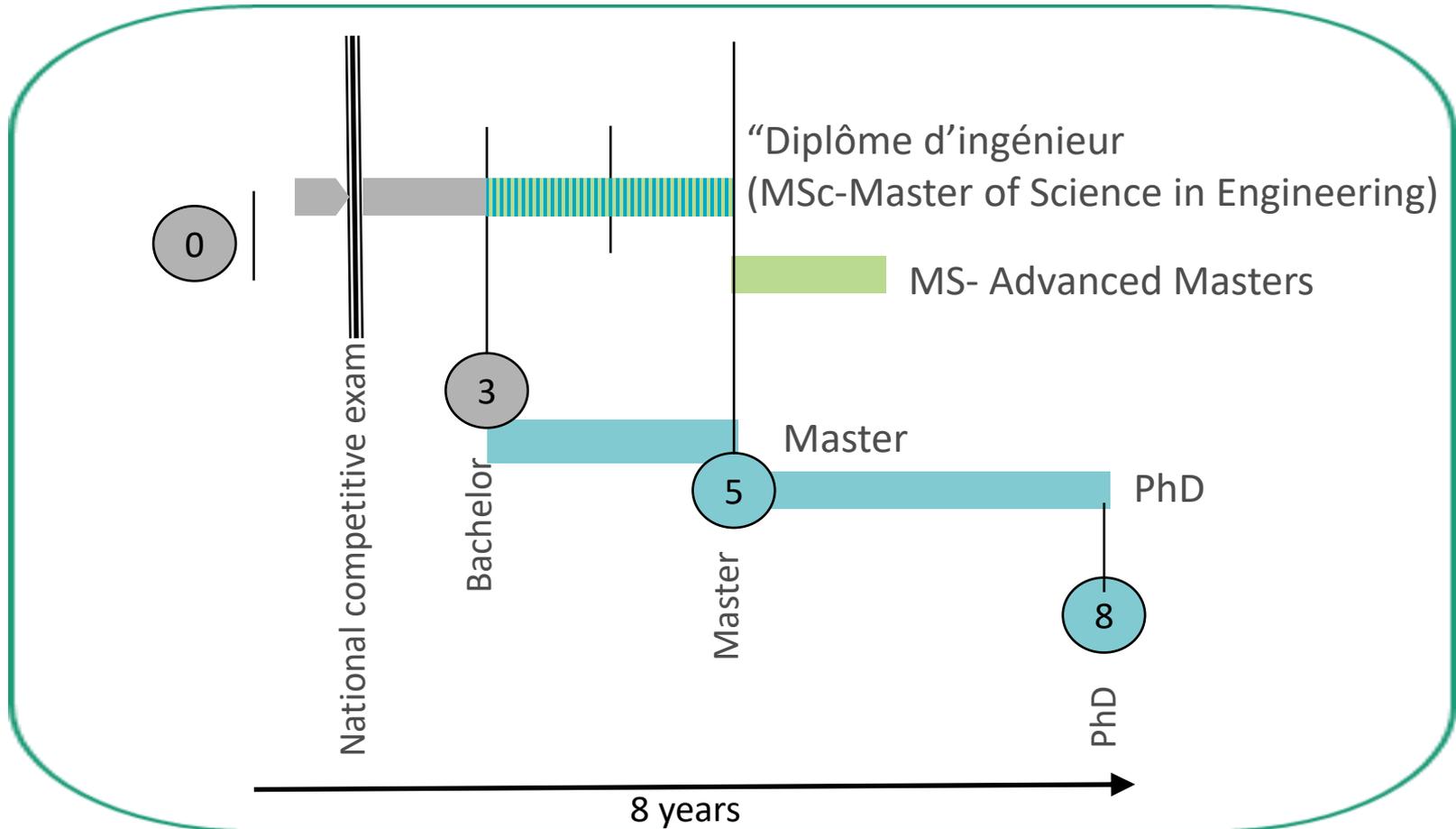
M μ : urban mobility modelling, new behaviors, infrastructures and urban planning, impact of public policies
Softwares, traffic simulators...



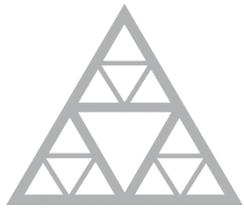
École des Ponts

ParisTech

Academics: graduate programs



Industry-oriented
Research-oriented



École des Ponts

ParisTech

« Diplôme d'ingénieur » (MSc in engineering)_International students

Bachelor cycle

At home institution

Master cycle

At Ecole des Ponts ParisTech

> Choice of a Department of studies

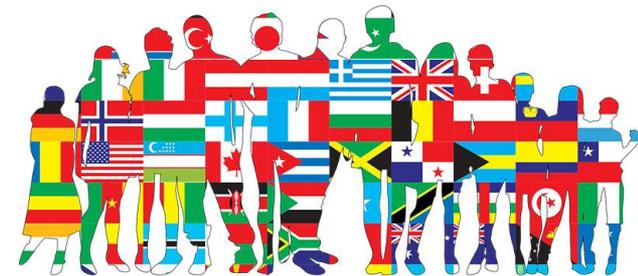
- Civil and structural engineering
- City, environment, transportation
- Mechanical engineering and materials science
- Industrial engineering
- Economics, Management, Finance
- Applied mathematics and computer science

Industrial internship

- 3 months or 1 year
- France or abroad

Final Project / Master thesis

- For at least 4 months, students apply the skills acquired in their programme to a scientific or technical problem, in a company or research laboratory.



Human-sized classes

30% international

25 nationalities

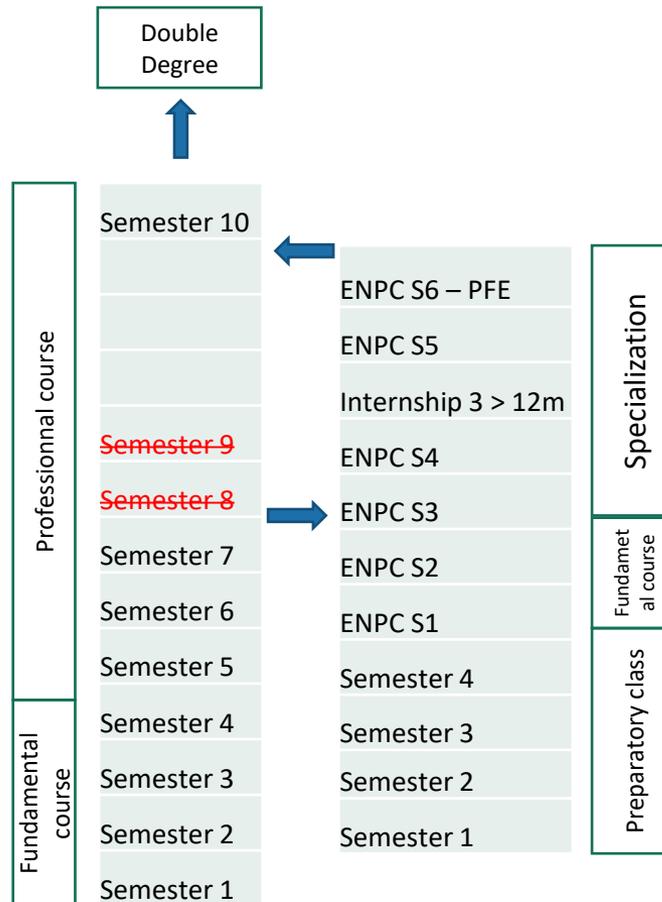
7 Semesters	Master courses	Master courses	Internship	Master courses	Final project / Master thesis	Semester 10
> Home university in Brazil	> Ecole des Ponts ParisTech		FR, BR or WW		> FR / BR or WW	> Home university in Brazil



École des Ponts

ParisTech

Double-degree curriculum for Brazilian students



At Ecole des Ponts Paristech :

120 ECTS to get the ENPC diploma,
composed by :

74 ECTS : scientific courses

12 ECTS : language

1 ECTS : sport

2,5 ECTS : internship

0,5 ECTS : professional orientation

30 ECTS : end-of-study project (PFE)

- Within academic departments :

Common courses : management, statistics, law,
human sciences

Compulsory courses of the department

Elective courses of the department

Opening weeks

- B2 in French and English compulsory



École des Ponts

ParisTech

Academics: Departments of studies

- **Civil and Structural Engineering**

Complex projects, site work organisation, innovation of new materials and construction technologies

- **City, Environment, Transportation**

Planification of complex urban systems and operation of urban services (transportation, water,...)

- **Mechanical Engineering and Material Science:**

Research and design of new products and materials in the fields of energy or transportation

- **Industrial Engineering:**

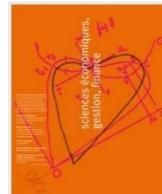
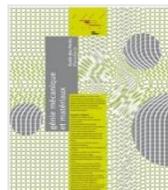
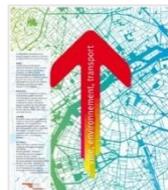
Innovation and supply chain. Robotics.

- **Economics, Management, Finance:**

Financial engineers(financial engineering, project finance, public/private partnerships) and economist engineers (urban, environment, transportation, construction and economic regulation)

- **Applied Mathematics and Computer Science:**

Modelisation of complex systems ; analysis of financial, industrial or natural risks ; challenges within big data

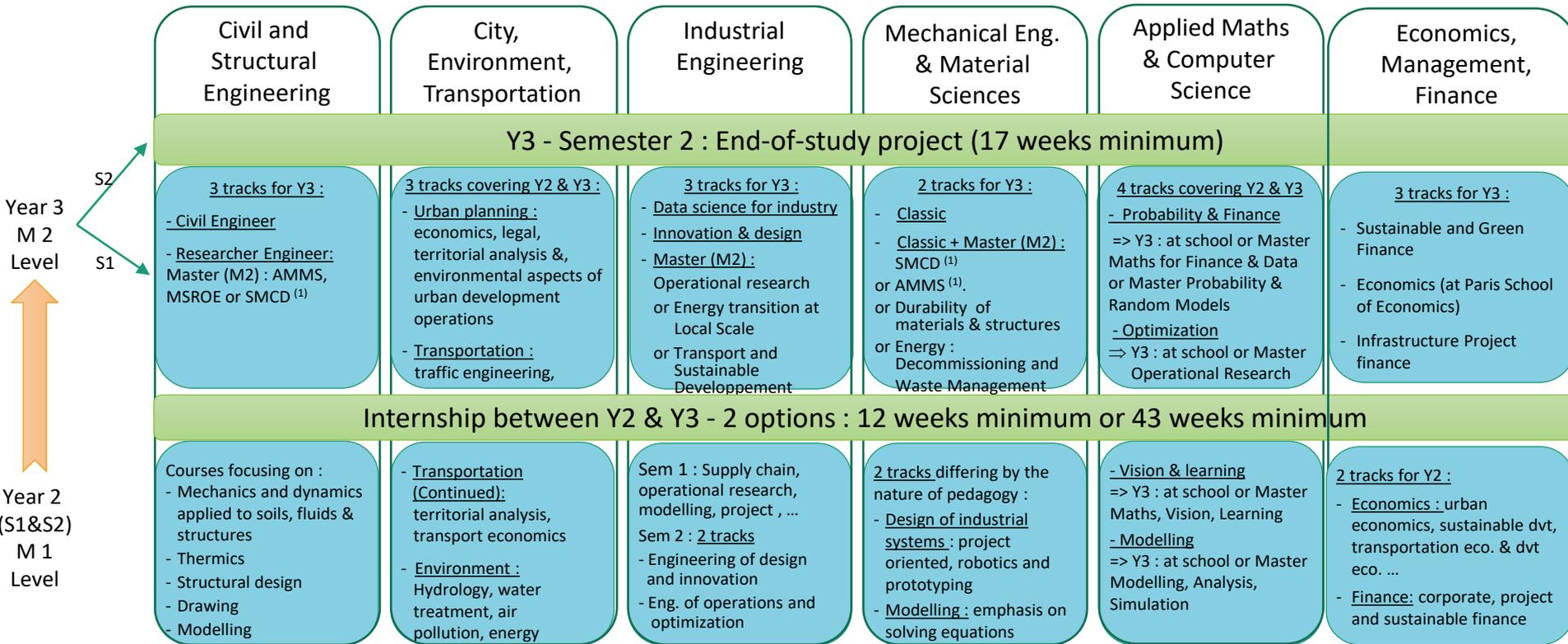




École des Ponts

ParisTech

Organization of courses in Departments of Studies



(1) AMMS : Multiscale Approaches for Materials and Structures; MSROE : Mechanics of Soils, Rocks and Structures in their Environment; SMCD : Materials Science for Sustainable Construction



Civil and Structural Engineering

École des Ponts

ParisTech

Fundamentals of the programme

- Theoretical bases of **mechanics** and **dynamics**, applied to structures, soils and fluids
- In-depth teaching in **geotechnics, structures or energy issues**, mixing theoretical courses and projects
- 2 **long projects** : building, bridge, port, road or dam ;
- **Several specific courses** covering all the aspects of civil engineering and construction to be chosen among a large variety of courses : advanced dynamics, physics of fire, special-risk structures, steel construction, wooden construction, management of construction projects ...
- **Department trip** : introduction to geology and construction materials
- **New** : tracks in common with our City Environment Transportation department
 - Transport and infrastructure
 - Urban planning and infrastructure
- Close links with **Navier** laboratory, and Industrial chairs :
 - Maintenance of Road structures (Sanef Abertis)
 - Sciences for rail transportation (Getlink)
 - Science of Materials for Sustainable Construction (Holcim)

Job opportunities

Construction

Structures

Structures for Energy

Public works

Geotechnics

Marine Engineering





Industrial Engineering

École des Ponts

ParisTech

OBJECTIVES AND STRENGTHS OF THE PROGRAMME

- Training engineers and future managers capable of **designing new industrial models and supporting the industry mutations** : ecological and digital transformation, new technologies (Big data, IA, IoT, additive fabrication ...), increased competition ...
- **Close links with companies** : Chair in **Supply Chain** (Decathlon, Louis Vuitton, Michelin, Renault), company projects ...
- Programme focusing on the **design, improvement and optimization of complex industrial systems** with an emphasis set on :
 - Planning and modeling of production systems
 - Tools for modeling and simulation
 - Software development
 - Operative research
 - Design thinking
 - Supply Chain Mgt

2 tracks in 2A :

- Engineering of **Design and Innovation**
- Engineering of **Operations and Optimization**

Job opportunities :

- **Great variety of positions :**
 - Supply chain manager
 - Production manager
 - Expert in operative research
 - Product manager (in design)
 - Data analyst
 - Manager of a BU
- **Many economic sectors** : luxury, automotive, aviation, cosmetics, energy, telecommunication, agri-business, construction, + Consulting





City Environment Transportation

École des Ponts

ParisTech

OBJECTIVES AND STRENGTHS OF THE PROGRAMME

- Training engineers capable of **designing and carrying out the challenges that cities face, in relation with climate change** : optimization of current solutions, development of new infrastructures compatible with the transition and massification of the most efficient solutions
- Application of **strong skills in mathematics and modeling to the main challenges faced by cities**
- Programme focusing on **field work** on issues like : land artificialisation, housing, transport engineering hydrology
- **Strong links with laboratories** (LEESU, LVMT, LHSV, HM&CO, LATTs ...) on issues like :
 - Water management in urban areas - Renewable energy
 - Sustainable mobility - Resilient cities

3 tracks :

- **Urban planning** : territorial analysis, economics, city and regional planning ...
- **Environment** : hydrology, energy, environmental risks, air quality ...
- **Transportation** : transportation systems, traffic engineering, economics, ...

Job opportunities :

- **Great variety of positions in public and private sector** :
 - Infrastructure operators : roads & highway, waste management, water ...
 - Consultancy in environment, transportation & urban planning
 - Government or local authorities
 - Research





Mechanical Engineering and Materials Science

École des Ponts

ParisTech

OBJECTIVES AND STRENGTHS OF THE PROGRAMME

- Solid command of concepts and tools of **materials mechanics**
- Pedagogical approach giving priority to **workgroup** and **learning through action**
- Close links with the industry : Chair **Sustainability of Materials and Structures for Energy (EDF)**, close contacts with engineers, ...
- Close links with the **Research**

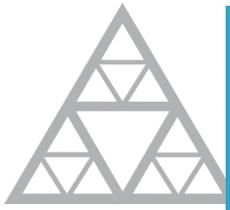
2 tracks in 2A :

- Design of Industrial systems track
- Modeling track

Job opportunities :

- **Research, development and design of new materials**
- **Product manager or Manager of industrial programme**
 - Example : Manager of a programme aimed at developing a new vehicle





Applied Mathematics and Computer Science

École des Ponts

ParisTech

OBJECTIVES AND STRENGTHS OF THE PROGRAMME

- Training engineers with a **strong command of complex mathematical tools**, in order to innovate in cutting edge sectors
- **Strong links with experts, managers and researchers** in finance, big data logistics or modeling.
- **Strong links with laboratories** (CERMICS, LIGM) on issues like :
 - Big data - Data processing - 3D vision
 - Digital simulation - Systems optimization - Modelisation of uncertainty

4 tracks :

- **Modeling** : programming and algorithemics, stochastic processes, optimization, finite elements ...
- **Optimization** : Operational reseearch, game theory, ...
- **Vision & Learning** : software design and dvt, deep learning, machine learning, image processing ...
- **Probability and finance** : stochastic calculs and finance, optimization, large dimension statistics ...

Job opportunities :

- **Great variety of sectors :**
 - Banking sector : quantitative analisis, risk analisis, trading ...
 - Research and Development in industries
 - High tech programs in industry
 - Scientific computation service providers
 - Engineering sectors dealing with optimization
 - Public research





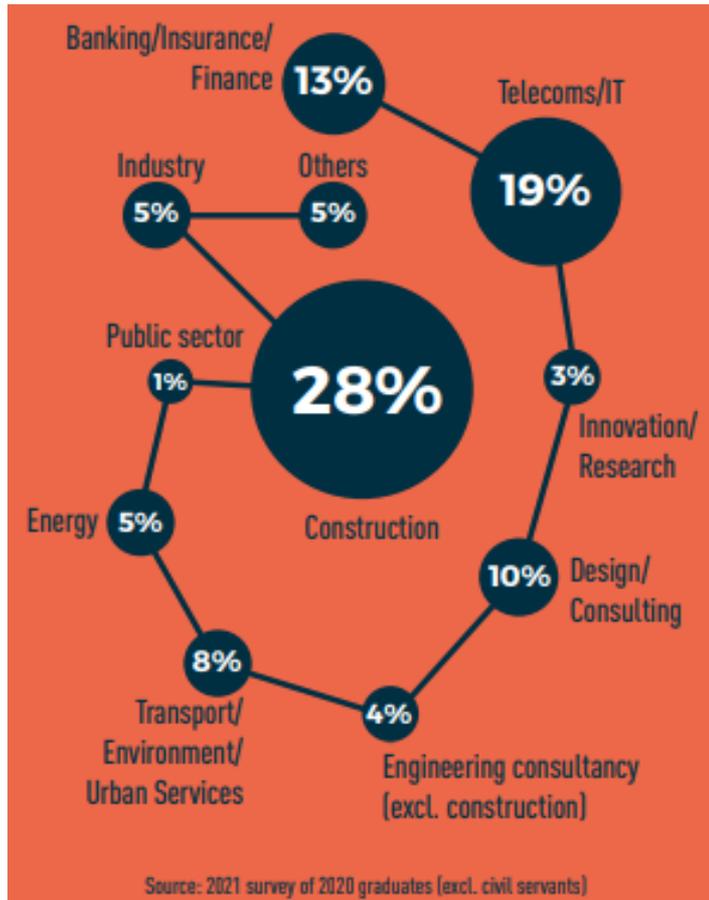
École des Ponts

ParisTech

Careers and placement

AVERAGE SALARY
IN FIRST JOB

€46,900 | €52,500 with bonuses



85% of engineering students are hired before graduation

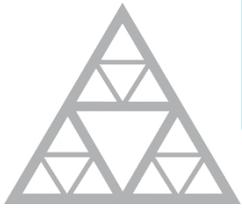


Experiences abroad

École des Ponts

ParisTech

- The 3 course semesters are at Ecole des Ponts ParisTech
- What can you do abroad ?
 - **Internship and/or PFE** : preferably outside your home country
 - **ATHENS week** :
 - ✓ 1 course week in a top level engineering school in Europe
 - ✓ During 2A and/or 3A, depending on the department
 - ✓ Germany, Austria, Belgium, Spain, Hungary, Italy, the Netherlands, Poland, Portugal, Czech Republic, Romania, Turkey
 - ✓ More information : <http://athensnetwork.eu/index.html>
 - **EELISA activities** :
 - ✓ EELISA : a European University – 9 members (France, Germany, Spain, Italy, Hungary, Romania, Turkey, Switzerland)
 - ✓ Possibility of academic activities at an EELISA partner
 - ✓ Example : 30 students from GCC went to Spain for a whole week

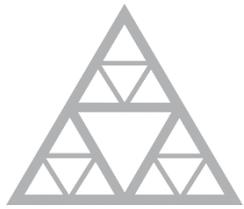


École des Ponts

ParisTech

Professional experience

- **Internship :**
 - Between 2A and 3A
 - ✓ May be short (10 weeks) or long (43 weeks)
 - ✓ If short : degree in 2 years – If long : degree in 3 years
 - ✓ In a company or in a lab
 - ✓ In France or abroad – If in France, compulsory payment to trainees
 - ✓ Prior validation by your department at ENPC
 - Support given to students
 - ✓ Workshops on CV and motivation letters
 - ✓ Preparation to interviews
 - ✓ Many opportunities to meet companies
 - ✓ Buddy programme with an alumni
- **End-of-study Project (PFE) :**
 - Last part of your mobility at Ecole des Ponts ParisTech
 - Mission in a company or in a lab
 - Theme to be chosen with your department at ENPC
 - Follow-up by a project director at ENPC
 - Master's thesis and defence
- **Some example of companies receiving students in a PFE**
 - Colas, Bouygues, Razel Bec, SETEC, BIEP, Méridiam
 - Chanel, Estée Lauder
 - SNCF, Ingerop, RATP, Cegelec

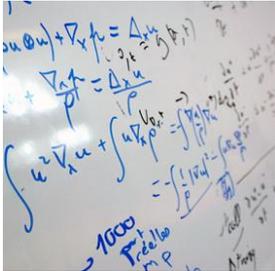


École des Ponts

ParisTech

Non-Degree English-taught Programmes



Level	Topic	Academic program
Bachelor-senior students	Applied Mathematics 	Mathematical tools for engineer Analysis and scientific computing Optimization Probability Introduction to programming Statistical physics Operational research and optimization Statistics & data analytics Language (French) Sport Project within lab
Graduate students	Green Finance 	Physics of climate change Energy economics ESG analysis Green financing Conferences Credit Risk Management of Climate Risks Project Finance Life Cycle Analysis Capstone Projects



Application process

Double-degree and non-degree student exchange

École des Ponts

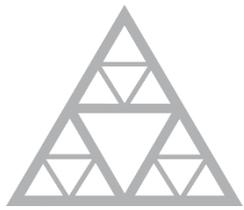
ParisTech

European Autumn session

Phase	Nomination by EP-USP	Application online	Remote Interview	ENPC Admission Jury	Deadline for sending certificates	Beginning of the academic year
Deadline	Early September	September 30th	Mid-October	Mid- November	Early June	Last week of August
Criteria	GPA Ranking by class Professional project Letters of recommendation	https://crm.enpc.fr/communit/enpc/custom_forms/184	30mn Motivations	Academic excellence Clarity of the project Recommendation letters Interview Maximum 6 students Maximum 4/department	A2 in French (B1 for VET Urban planning track) TOEIC 785	Assessment of language level, and upgrading courses in mechanics (in September)

European Spring session : for non degree exchange students only (2 semesters of coursework)

Phase	Nomination by EP-USP	Application online	Remote Interview	ENPC Admission Jury	Beginning of the academic year
Deadline	Mid March	March 31st	Mid-April	Early May	Last week of August
Criteria	GPA Ranking by class Statement of purpose Letters of recommendation	https://crm.enpc.fr/community/enpc/custom_forms/184	30mn Motivations	Academic excellence Clarity of the project Recommendation letters Interview Maximum 3 students	Assessment of language level,



École des Ponts

ParisTech

An entrepreneurial ecosystem for students

- Entrepreneurship courses
- 2 incubators (Descartes, Station F), 1 accelerator
- Annual Hackathon: « One night to launch a startup »
- Access to research equipment and mentorship
- Special awards, and seed-funds from Fondation des Ponts



Successful start-ups



Daylight system
with fiber optic



Roof mounted
small wind turbine



From 2D to 3D
BCUTE 3D
sculpture additive



École des Ponts

ParisTech

Maker space | d.school



Makerspace

- 3D Printing,
- Laser cut
- 4 poles (ceramic, wood, steel, water, electronics)

d.School Paris

Design Thinking as
an approach to
innovation and its
management

56 CORPORATE
PARTNERS

74 PROFESSIONAL
PROJECTS

100 ALUMNI
EXPERTS



- innovate – collaborate – share -



École des Ponts

ParisTech

Library, Heritage and Publishing.

La Source, Learning Center

- 250 seats
- 200 000 documents
- Open 71 hours/week

Scientific information services for researchers

- 25 000 scientific publications
- HAL ENPC Open Science Plan (65% publications in open access)

Archives

- Exceptional heritage
- Ancient manuscripts and maps since the 18th century.



Presse des Ponts

- 220 books and scientific and technical software applications primarily in the fields of civil and structural engineering, and spatial planning



École des Ponts

ParisTech

Campus Cité Descartes Greater Paris green cluster

- Housing (on campus or in Paris center)
- Sport facilities
- Vibrant campus life
- 15 student societies
- 20' from Paris center (direct urban train)
- International students welcome desk with « Feel Français »





École des Ponts

ParisTech

Alumni endowment and support



- 22 000 alumni worldwide, holding leadership positions in 100 countries
- 14 international groups
- Bespoke mentoring for international students over their stay in France
- Support for careers and internships



Fondation des Ponts

- Special scholarships program for international students
- Corporate Scholarship (Meridiam)
- Excellence awards
- A powerful network of donors



École des Ponts

ParisTech

Your budget

Tuition and fees

Tuition: ~~6900€~~/year. Waived

Fees (CMCI): 1000€/year

Scholarships

- Eiffel: 1180€/month
- Fondation des Ponts:
650€/month over 15 months
- Corporate scholarships
(Meridiam : 1200€/month)

Monthly Cost of living in Paris: ~850€

- Housing (including APL*)
 - Residence Meunier: 400€ or
 - Maison des Mines et des Ponts: 250€
- * Gvt Housing allowance : 150/200 €
- Transport (Greater Paris): 40€
- Food: 300€
- Entertainment: 200€
- Incidentals: 100€



École des Ponts

ParisTech

Contacts :

Marie-Christine BERT :

- Director of International Relations and Corporate Partnerships
- marie-christine.bert@enpc.fr

Emmanuel SIMANTOV :

- Head of international mobility
- emmanuel.simantov@enpc.fr

Useful links :

- School website : <https://www.ecoledesponts.fr/en>
- Course catalogue : <http://gede.enpc.fr/>
- Student union (in French) : <https://bde.enpc.org/>



École des Ponts
ParisTech



www.enpc.fr/en

ÉCOLE DES PONTS PARISTECH
Building the worlds of tomorrow