

Webinar – June 4, 2020

Agenda



- ❖ Institut Polytechnique de Paris
- ❖ Characteristics of the French *Diplôme d'ingénieur*
- ❖ IP Paris' science & engineering graduate schools
- ❖ IP Paris' *Ingénieur* Programs
International Entrance Exam
- ❖ Questions and answers

www.ip-paris.fr
engineer-admission@ip-paris.fr

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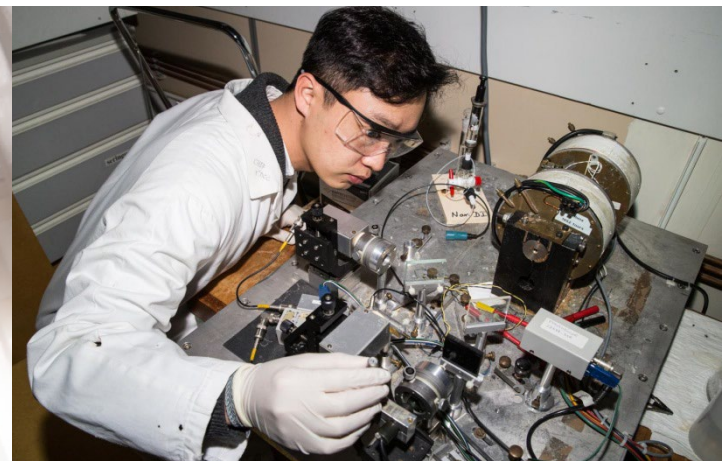


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- ❖ Characteristics of the French *Diplôme d'ingénieur*
- ❖ IP Paris' science & engineering graduate schools
- ❖ IP Paris' *Ingénieur* Programs
International Entrance Exam
- ❖ Questions and answers

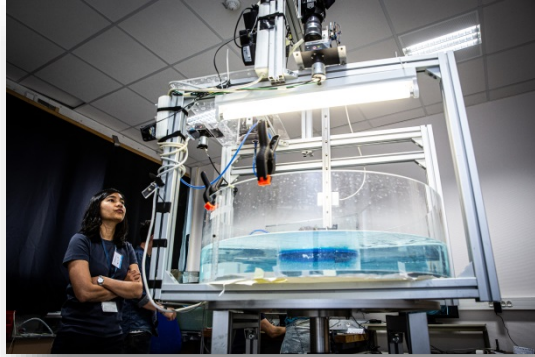
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**INSTITUT
POLYTECHNIQUE
DE PARIS**



Excellence in Education and Research



RESEARCH

Lead world-class research activities

Promote research conducted in laboratories towards companies & encourage entrepreneurship

In one of the top 8 innovation clusters in the world



EDUCATION

Recruit students worldwide and provide them with high-level educational programs

Train researchers and leaders to respond to future economic and social challenges

Top employability rate and salary after graduation



INDUSTRY AND INNOVATION

Working in close collaboration with companies

Support students projects and entrepreneurship

Key Facts and pillars

7,500 Students

950 Faculty members

2,200 Staff

900 PhD Students

30 Research Laboratories

95% employability rate
in under 4 months after graduation with an
average gross salary of 50 000 euros/year

Centuries of combined experience

International faculty members

Pluridisciplinarity

World-class research facilities

Industry & Society oriented education

A modern and green campus near Paris

An international recognition

Ecole polytechnique' world rankings

1st (France) and **18th** (world)

for student employability

QS 2020

2nd (France) and **60th** (world)

QS 2020

1st (France) and **32nd** (world)

CWUR 2020

1st (France) and **27th** (world)

of the 200 most international universities

THE 2019

2nd (France) and **6th** (world)

for the number of Nobel Prize winners
ranking published in Nature 2016

3rd (France) and **93rd** (world)

THE World University
Ranking 2020

Télécom Paris' world rankings

2nd (France) and **112th** (world)

for graduate employment rate

QS 2020

5th (France) and **188th** (world)

THE World University
Ranking 2020

6th (France) and **224th** (world)

QS 2020



Education & Research Ecosystem

A Strategic partnership with HEC

- Creation of a multidisciplinary academic alliance in the fields of technology and business innovation.



IP Paris benefits from the partnerships of its founding institutions

National research centers



International institutional partners

- EuroTech Network
- Columbia (Alliance Program)
- Top-ranked universities worldwide
- International Research Centers

Other national institutional partners

- Université Paris-Saclay
- IMT
- GENES
- ParisTech

AND MANY MORE INSTITUTIONAL PARTNERS...

Partnerships for Education & Research



Internships, coaching, conferences, case studies, company visits,

THALES

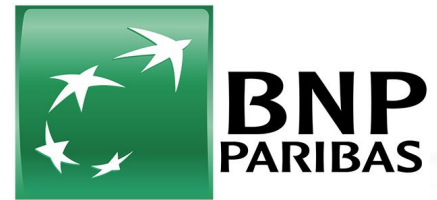


NAVAL
GROUP

AIRBUS



recruitment forums, networking, education and research chairs...



And many more industrial partners

IP Paris Educational Programs



Bachelor



3 yrs



Ingénieur degree



3 yrs

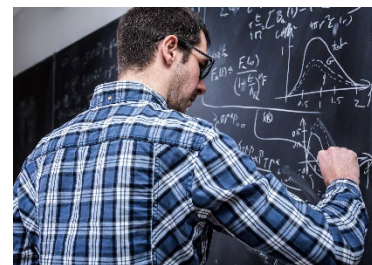


Master / MSc&T



INSTITUT
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DE PARIS

2 yrs



PhD / PhD Track



INSTITUT
POLYTECHNIQUE
DE PARIS

2 yrs
+ 3 yrs



Executive
Master

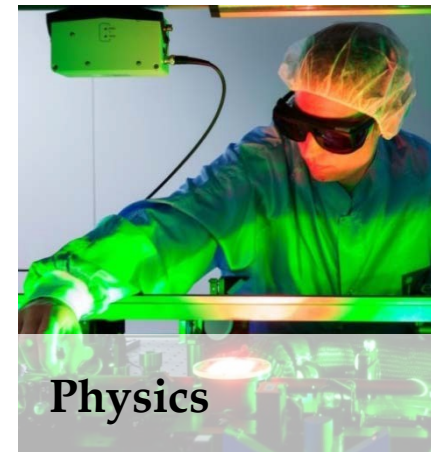
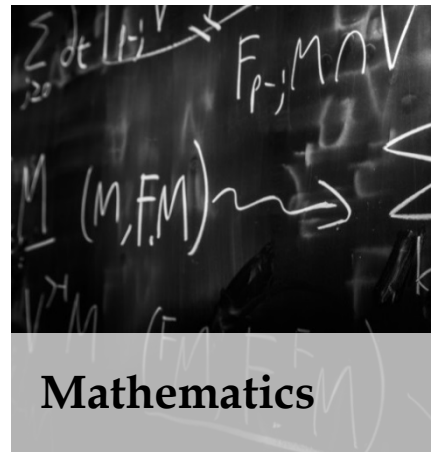
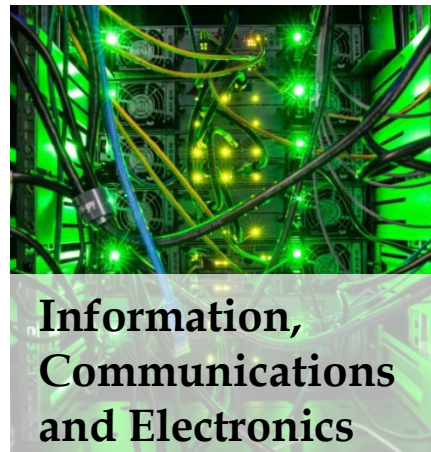
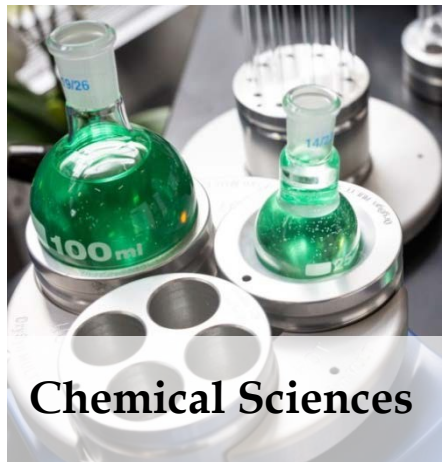
Advanced
Master

Executive
Education



14 m

Education and research scientific areas



A Powerful Network of Alumni

**Rose
Dieng-Kuntz**

Senegalese
computer scientist
specializing in AI



**Jerome
Guillen**

President,
Automotive
TESLA



**François
Bourguignon**

Former Vice-
President, the
World Bank



**Diaa
Elyaacoubi**

Founder,
President,
StreamCore



Éric Trappier

CEO,
Dassault
Aviation



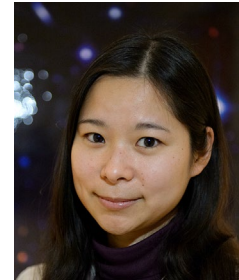
**Bernard
Arnault**

CEO,
LVMH Moët
Hennessy



**Kumiko
Kotera**

Astrophysicist,
Head of
GRAND project



**Helle
Kristoffersen**

Senior VP Strategy
& Business
Intelligence, Total



**Jean-
Christophe
Lalanne**

Information
Systems Director,
AirFrance - KLM



**Aurélie
Adam Soule**

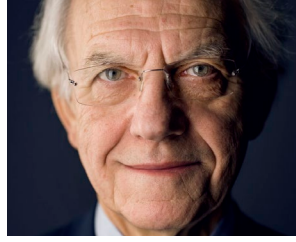
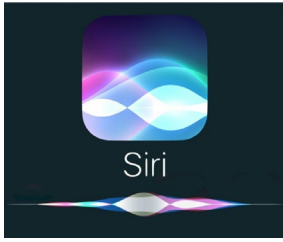
Beninese
Minister of
Digital and
Digitization



Outstanding Scientific and Technological Achievements



Luc Julia, Creator of the SIRI application, Apple



Gérard Mourou, Nobel Prize in Physics for the invention of chirped pulse amplification



Edmond Malinvaud, Honorary Professor at College de France, Co-founder of the theory of imbalances



Helene Rey, Economist, Determination of exchange rates and international capital flows



Oscar Salazar, Co-Founder of UBER



Ane Aanesland, Co-founder and CEO of ThrustMe, start-up that disrupted the space industry



Bertrand Bailly, Founder and CEO of Davidson Consulting, Best Great Place to Work in Europe



Florian Fournier, Co-Founder and CPO, Payfit , #4 LinkedIn Top start-up France



Thierry Petit, Founder, CEO of showroomprive.com



An international campus near Paris

Atmospheric observatory



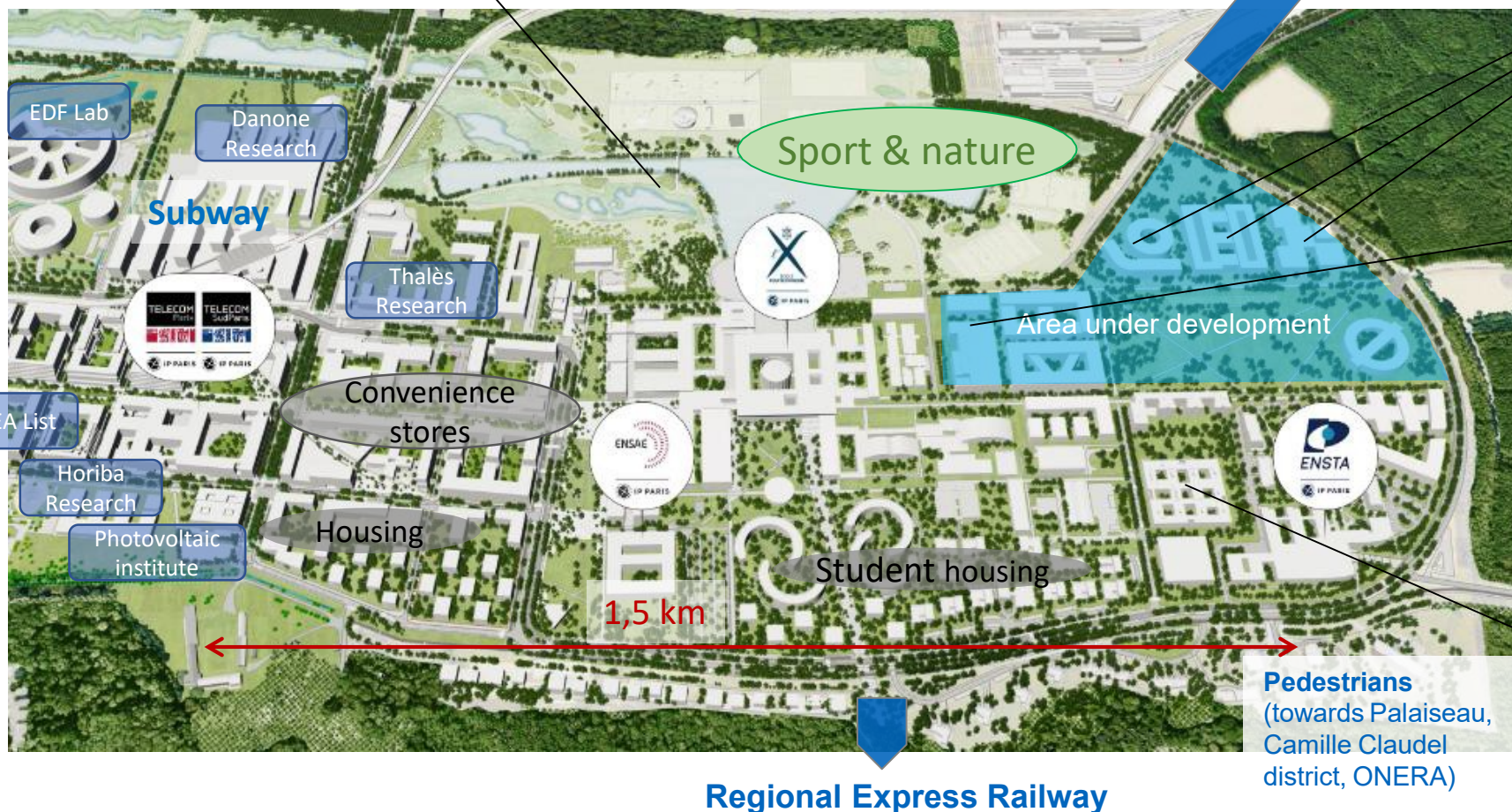
New research institutes



Total R&D center



Mechanical engineering Institute



Regional Express Railway

AN INTENSE CAMPUS & STUDENT LIFE



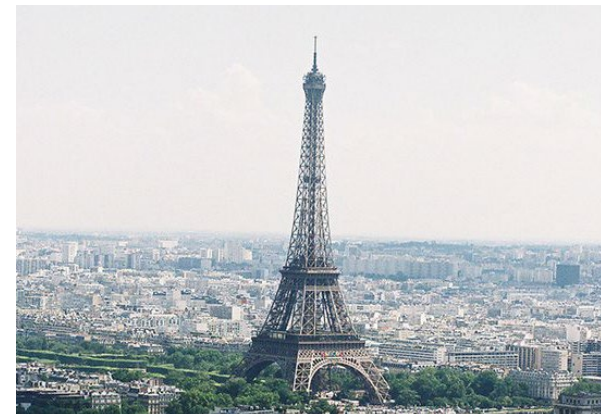
Practice of a wide range of sports and many students associations & cultural events



Modern Libraries to study & find documentation



Housing on the campus to be fully immersed in the student life



30 minutes away by public transport of Paris

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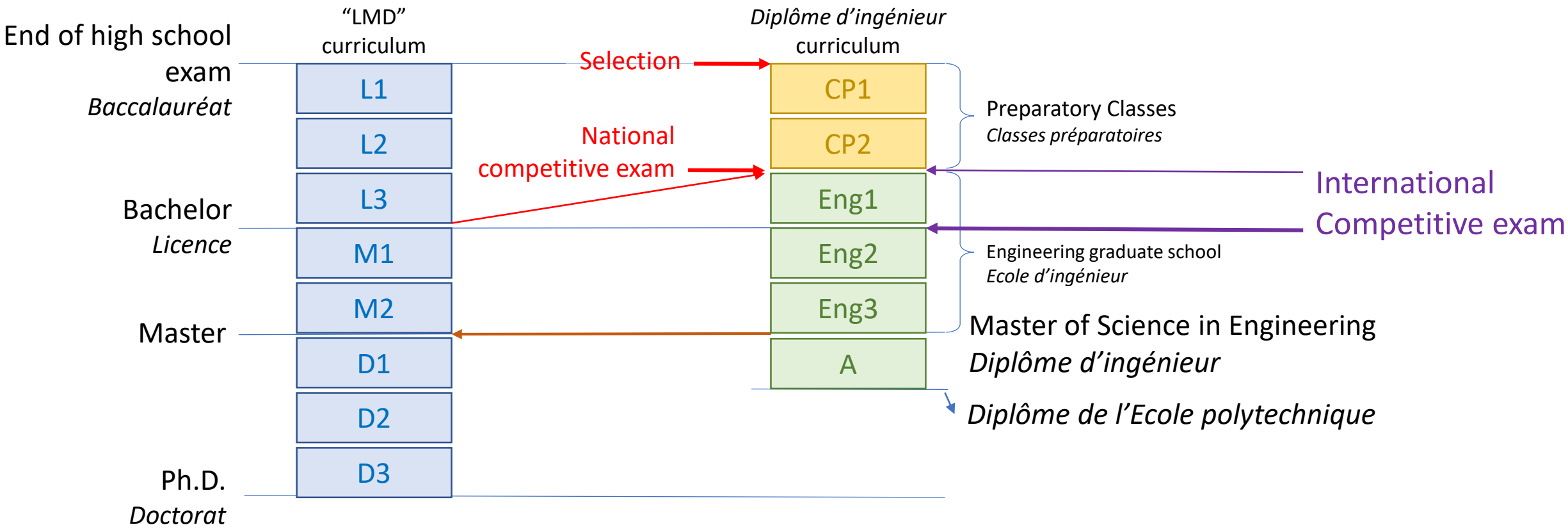
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Characteristics of the engineering schools in France

- The “Titre d’Ingénieur” **confers the European degree of Master recognized worldwide.**
- **Selection** of students based on the academic level
- **A multidisciplinary education:**
 - **Fundamental sciences:** mathematics and physics particularly, chemistry
 - **Engineering sciences**
 - **Economics**
 - **Business, management, innovation and entrepreneurship**
 - **Soft skills:** communication, critical thinking, social environment
 - **International skills:** languages, geopolitics, mobilities
- **A strong interaction with companies**
 - Including several opportunities of **internships**, which are mandatory in the curriculum
- **Personalized curriculum**, student/faculty ratio 5:1
- Hosting **research laboratories** associated to Doctorate Schools
- **Compatible with the PhD-track**

200 schools of engineering are currently accredited by the French commission for engineering diplomas (**Cti**) to issue the engineering degree.

The French curriculum of the *Diplôme d'Ingénieur*



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Scientific areas



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Biology and Health	●				
Chemistry	●				
Economics	●	●	●	●	●
Energy	●	●			
Nuclear engineering		●			
Computer science	●	●	●	●	●
Information and communication eng.	●	●		●	●
Mathematics, statistics and applications	●	●	●	●	●
Mechanics	●	●			
Physics	●	●		●	●
Transport, mobility		●			

And also: Design, Innovation, Entrepreneurship, Sociology

École Polytechnique: Key Facts

Location: Palaiseau

20 Km from Paris

Campus size:

160 hectares

3600

students

30%

of students pursue their
studies and complete a
PhD

480

Professors
researchers

40%

International students

**Undergraduate and
Graduate Education** in

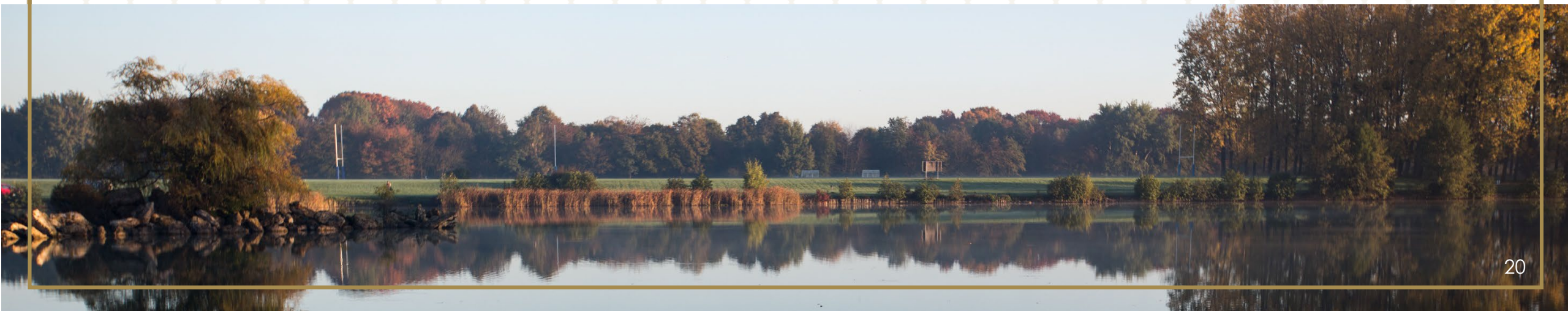
Sciences and technology
(From Bachelor to PhD)

23

laboratories
on campus

40%

of whom are international



École Polytechnique : a multi-secular institution



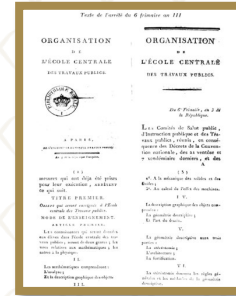
11 mars 1794

1804

École Polytechnique
obtained its military status
given by Napoleon I



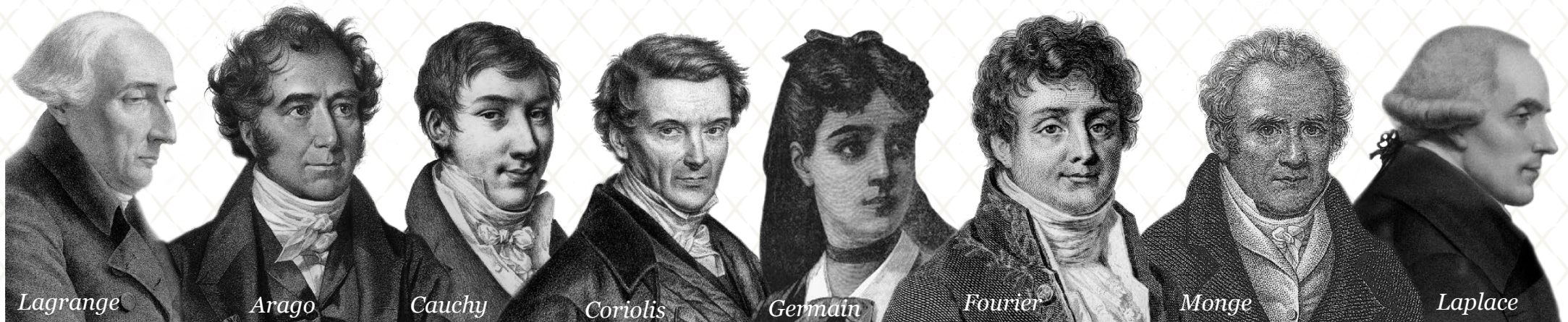
École Polytechnique is founded at the
height of the Age of Enlightenment



A humanist and progressive approach to science
to address the key challenges of the 21st century

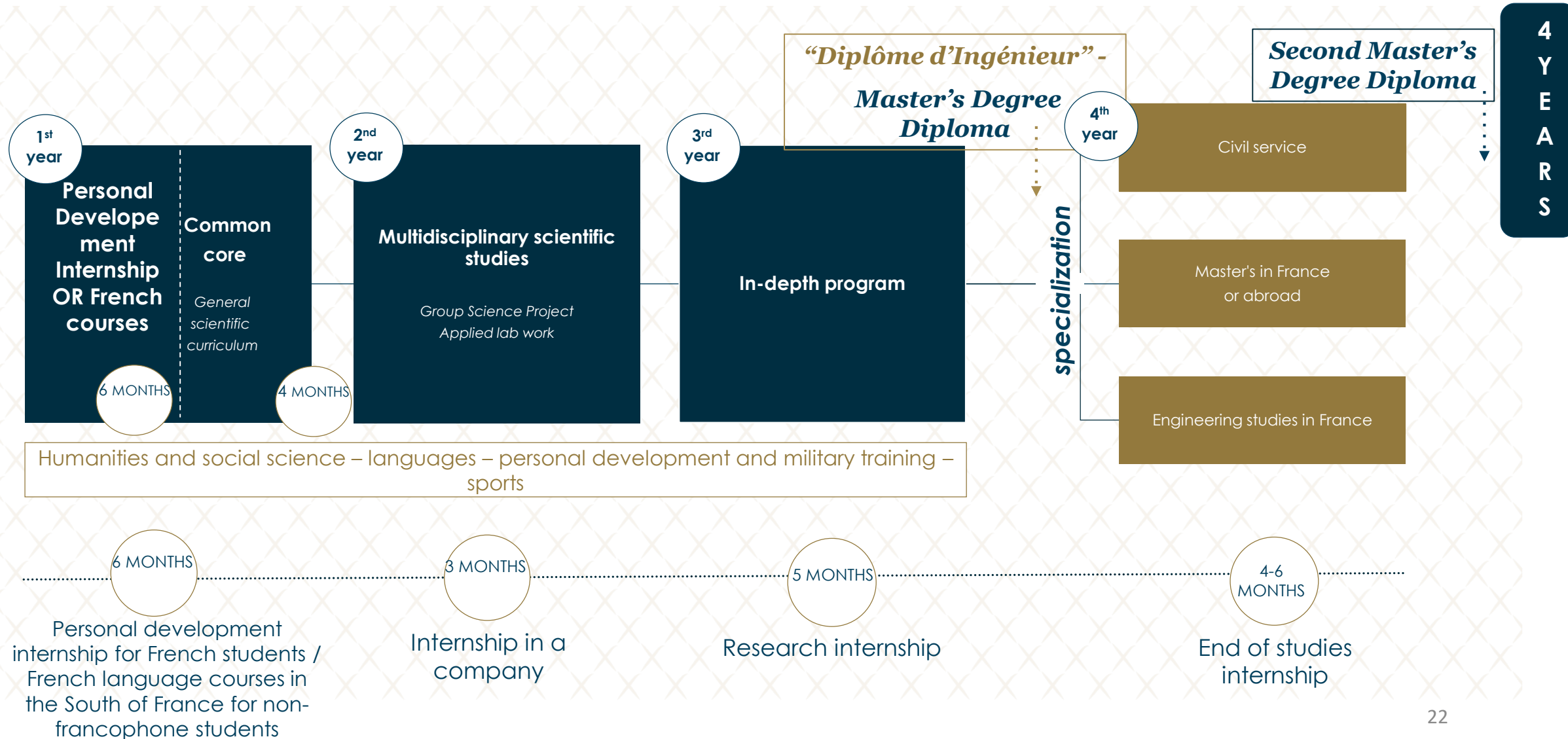
Today L'X is under the authority of the
Ministry of the Armed Forces

It provides civic and military training
to shape responsible and committed leaders



École Polytechnique : *Ingénieur Polytechnicien* program

HIGH-LEVEL SCIENTIFIC ACADEMIC PROGRAM





MAKING SENSE OF DATA

EVALUATING, PREDICTING, DECIDING

ENSAE Paris at a glance

A French *Grande École* founded 75 years ago.

Three fields of excellence in education and research

- Data Science, Statistics and Machine Learning
- Quantitative Economics and Sociology
- Finance and Actuarial Science

A unique, demanding, multidisciplinary *Ingénieur* program

- High-level courses in Applied Mathematics, Statistics, Machine Learning, Economics and Econometrics
- Advanced field knowledge
- Cutting-edge quantitative methods
- Among France's highest paying engineering diplomas

Training data scientists

- For business decision, finance, public policy...
- And all data intensive applications

About 200 *Ingénieur*
ENSAE Students graduated
per year

A research center, CREST

Center for Research in Economics and Statistics, with 90 researchers and 80 PhD candidates (mixed research unit CNRS, ENSAE and École Polytechnique)

A Laboratory of Excellence “Economics and Decision Sciences” (IP Paris and HEC Paris)

An École Universitaire de Recherche (EUR)

“Data Science for Economics, Finance and Management”
(IP Paris and HEC Paris)

A secure data hub on site



MAKING SENSE OF DATA

EVALUATING, PREDICTING, DECIDING

About the Ingénieur ENSAE program

Three-year program blending theoretical courses, applied projects, seminars, internships (one every year), foreign languages, soft skills

1st year Harmonizing skills in Maths, Applied Maths, Economics and Computer Programming

2nd year Building core scientific skills and initiating specialization

- Core curriculum in Mathematical Statistics, Econometrics, Machine Learning, Microeconomics, Macroeconomics, Applied Economics and Statistics
- Electives in advanced Economics, Statistics, Finance or Actuarial Science

3rd year Choosing a specialization track

- Actuarial Science
- Data Science, Statistics and Machine Learning
- Data Science and Business Decision
- Finance and Risk Management
- Data Science and Social Sciences
- Forecasting and Economic Policy

Specialization tracks can be combined with

- IP Paris Research Masters in Economics, Data Science or Finance (for continuation in PhD)
- Double degree programs with France's top Business Schools (HEC, ESSEC, ESCP)
- Exchange programs abroad

International student admission

A selective competitive exam

- Written exam in Mathematics
- Motivation interview
- Qualifications based on previous academic results are also taken into account

Prerequisites

- Bachelor of Science in Mathematics
- Bachelor in Quantitative Economics or Finance, with a solid background in mathematics

Admission in 1st or 2nd year depending on academic background and test results

Courses are taught in French and English

Training leaders in Engineering, Research and Entrepreneurship in the fields of :

- ❖ Transportation
- ❖ Energy
- ❖ Complex Systems Engineering
- ❖ Engineering Mathematics

STUDENTS

- **748 “Ingénieurs”** students
- **250** graduates p/year
- **186** master students
- **27%** international students from 30 countries
- **29%** women
- Over **50** student associations
- **6000** alumni
- On-campus housing

ACADEMICS

- Multidisciplinary curriculum combining science, engineering, projects and soft skills
- A progressive specialization
- **139** faculty members
- **600** adjunct lecturers (70% expert from companies)
- individual tutoring
- Research internships

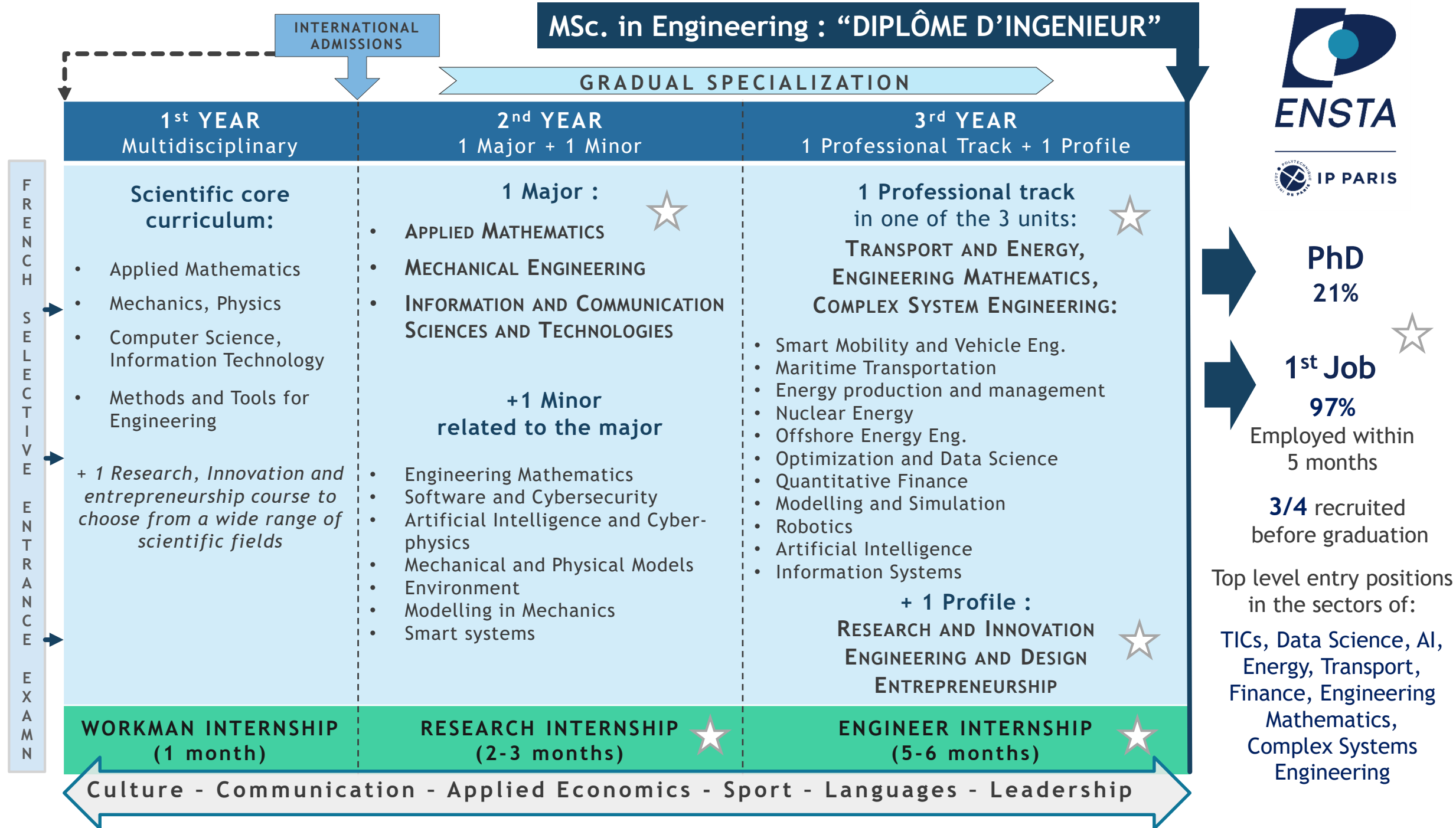
RESEARCH

- **139** researchers
- **110** PhD students
- **220** publications/year in peer-reviewed journals
- **6** research units:
 - Applied Math
 - Mechanical Eng.
 - Computer Science and Systems Eng.
 - Chemistry and Chemical Eng.
 - Applied Optics
 - Applied Economics

INDUSTRY

- Over a 100 partner companies in all major sectors
- 2 joint labs with industrial partners
- Student projects linked with companies
- Paid Internships in companies as part of the curriculum
- Support for professional placement





*150 professors
1600 students
including 44% international students
17 500 alumni*

*630 international publications per year
50% of research funded by companies
153 active patents*

**INNOVATE AND FOSTER ENTREPRENEURSHIP
IN A DIGITAL WORLD**



We train top level professionals in digital by combining the fields:

- Applied mathematics
- Computer science & engineering
- Physics, electrical engineering
- Economics & social sciences

according to 3 main profiles:

- Transformers
- Entrepreneurs
- Inventors

Our research addresses the major issues of the digital revolution:

- Data science & Artificial intelligence
- Digital trust: cybersecurity, risk, reliability
- Mathematic modeling
- Image and signal processing
- Human-machine interaction
- Internet of things
- Very large networks & systems
- Digital innovation



Telecom Paris

Innovation in training

Project-based teaching methods

Free access spaces: design studio, e-Lab, FabLab

Student innovation events

Nb. 1 public French incubator in digital technology

(since 1999, over 440 start-ups created, 86% in activity, over €300M funding raised, 3,000 jobs created)

Close links with industry

More than 300 partner companies

25 teaching and research chairs

12 joint laboratories

500 guest speakers from the business world

100 activities with companies for students

programs taught in English

Diplôme ingénieur
Post-master

An internationalized graduate school

100 partners in 39 countries

42 dual degree agreements in 18 countries

34% of international professors

22% of 1st jobs abroad

1 international shared campus in Shanghai: SPEIT



THE

188th world university

2nd French Graduate school

126-150 in computer science

151-175 in social sciences

176-200 in engineering technology

QS

224th world university

3rd French graduate school

2nd French institution in
employment rate

101 - 150 in computer science

ENGINEERING THE WORLD OF TOMORROW

THROUGH DIGITAL INNOVATION

Télécom SudParis is a prestigious, publicly funded *Grande Ecole*", founded in 1979.

OUR VALUES

- Passion,
- Entrepreneurship,
- Social Responsibility & Diversity

GRADUATE PROGRAMS

- Computer Science and Information Systems
- Networks, Services and Protocols
- Mathematics and Statistical Modeling
- Image Processing and Multimedia
- Embedded Systems, Mobility and Communicating Objects
- Managing Digital Transformation

INNOVATION: OUR STRONG VALUE IN EDUCATION

- Personalized programs of study
- Entrepreneurial spirit and project-based education
- Close connections and ties with industry

RESEARCH LAB

SAMOVAR, a unique multidisciplinary research lab uniting all fields relevant to developing communications systems

TEACHING AND RESEARCH FIELDS

- Networks
- Smart Cities
- Industry of the Future
- Connected Objects
- Data Sciences
- Energy and Smart Grid
- Multimedia and Video Games
- Biometrics
- Cybersecurity
- Health and Autonomy
- Middleware and Cloud
- Intelligent Transport
- Electronic Optics and Microscopy

EMPLOYABILITY GUARANTEED

100% employment rate

START-UP INCUBATOR

3rd business incubator in France. IMT Starter providing premises, coaching, seed funds, international collaboration and training embedded in the ingénieur curriculum

OPEN TECHNOLOGY PLATFORMS

- Health and Dependency Living Lab
- Cloud and Networks
- Cyber-security for connected infrastructures
- Medical and Biological Imaging
- Ultra-High-Speed Networks
- Cloud for multimedia processing
- Middleware for the Internet of Things
- High-Resolution and Wide-Field Microscopic Imaging Services for Big Data

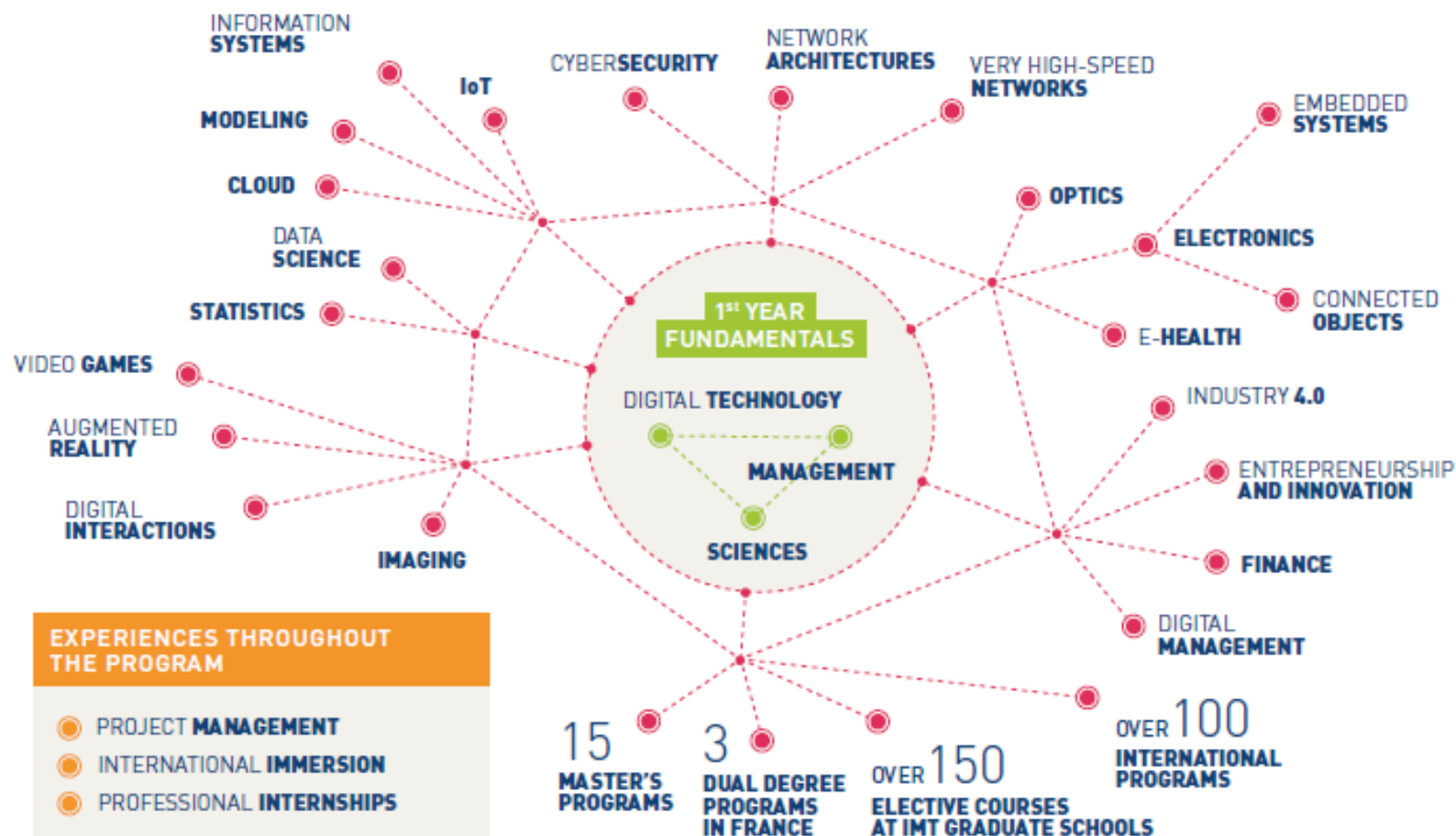
CAMPUSES

Two rapidly developing and modern campuses located in one of Europe's leading innovation clusters.

THE TELECOM SUDPARIS *INGÉNIEUR* PROGRAM

2nd AND 3rd YEARS

A WIDE RANGE OF COURSES



INTERNATIONAL STUDENT ADMISSIONS

A selective and competitive entrance exam:

- Written exams in Mathematics, Physics, Probability & Statistics, Information and Communications Science & Technology
- An Oral Exam in General Scientific Knowledge and a Motivation Interview
- Academic qualifications and results are also evaluated

Prerequisites:

- Bachelor of Science in Mathematics, Physics, Computer Science, Electrical Engineering, Telecommunications

Admission in 1st or 2nd year, depending on academic background and exam results

The languages of instruction are French and English

French language instruction is provided to all international students

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Diplômes d'ingénieur international admission process

- One selection process for five “Diplôme d'ingénieur” programs



- Admission process:
 1. On-line application, valid for the five programs
 - <https://www.ip-paris.fr/ingenieur-programs/>
 2. Shortlists of applicants by program - eligibility
 - Through general selections based on the application file
 3. Common written and oral exams
 4. On-line declaration of an ordered wish list of schools
 - From the list of schools for which you are eligible
 5. Final decision of acceptance: A unique admission result
 - Taking into account your ordered wish list of schools








Who should apply?

- Applicants must have completed at least 2 years of undergraduate studies in Science or Engineering.
 - Excellent commands of Mathematics, Physics and basics in Engineering are keys to success.
 - French or English fluency
 - Open-minded, internationally oriented
- △ With special legal restrictions for Ecole Polytechnique



What are the written and oral exams?

- Written and oral exams are offered in French or English.
- All written exams are organized on a single day.
- For a candidate, all oral exams are organized on a single day.

	Test					
Written exams	Mathematics	✓	✓	✓	✓	✓
	Physics	✓		✓	✓	✓
	Probability & Statistics		✓	✓	✓	✓
	Information and communication Sc. & T.				✓	✓
Oral exams	Mathematics	✓	✓	✓		
	Physics	✓		✓		
	General Scientific Knowledge	✓	✓	✓	✓	✓
	Motivations	✓	✓	✓	✓	✓

- Syllabus and examples available on: <https://www.ip-paris.fr/ingenieur-programs/>

Diplômes d'ingénieur international admission process

- One selection process for five “Diplôme d'ingénieur” programs



- Admission process:

- On-line application, valid for the five programs → Mid-April to September 20
- Shortlists of applicants by program - eligibility → End of September
 - Through general selections based on the application file
- Common written and oral exams → Second half of October
- On-line declaration of an ordered wish list of schools → Beginning of November
 - From the list of schools for which you are eligible
- Final decision of acceptance: A unique admission result → Beginning of December
 - Taking into account your ordered wish list of schools

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More information

www.ip-paris.fr/ingenieur-programs/



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