

# ENSTA ParisTech – UPM/ETSIT & ETSIAE

Moving Forward

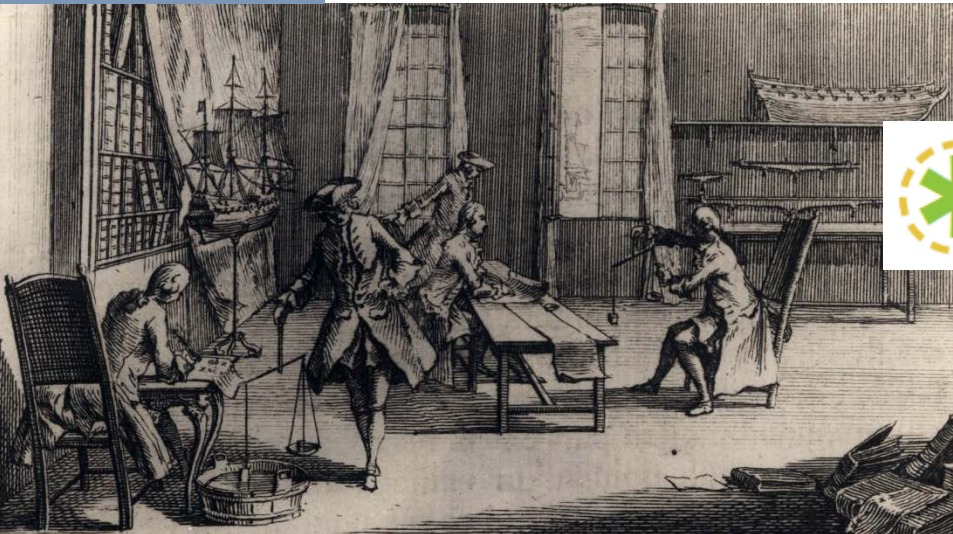
École Nationale Supérieure  
de **Techniques Avancées**



Titre présentation

## History Origins

General  
Presentation



1741

**Founded by** Henry-Louis Duhamel du Monceau, , originally: the School of Construction Engineers of Royal Vessels



*Henry-Louis Duhamel du Monceau (1700-1782)*

The school became  
**The National School of Maritime Engineering**



1970

**ENSTA**

**École Nationale Supérieure  
de Techniques Avancées**

## + Arrival on Ecole Polytechnique campus in 2012

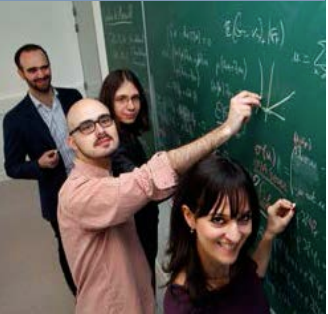
❑ Presence of other Graduate Schools of Engineering on the campus :

- ❑ Ecole Polytechnique
- ❑ ENSAE ParisTech
- ❑ Institute of Optics
- ❑ Centrale Supélec
- ❑ And soon.... Telecom ParisTech, AgroParisTech

❑ A lot of companies (R&D centers) : EDF, Danone, Thalès, Safran, Air Liquide



# A multidisciplinary « Generalistic » Graduate School of Engineering



Transport



25%

Of graduates

Systems  
Engineering



22%

Of graduates

Energy



21%

Of graduates

## Key figures

- 810 students (except PhD)
- 640 students in the « ingénieur » track
- 200 graduates each year
- 161 Master students
- 120 PhD
- 6000 alumni

30% Women

~20%  
Go to PhD



A « generalistic » Graduate School of Engineering with 4 main domains of expertise

A multidisciplinary core curriculum (mathematics, physics, mechanical engineering, electronics, computer science, social sciences, humanities, sport)

A progressive specialisation towards a professional sector and a position

Transport



Ex : autonomous vehicle,  
smart mobility

Energy



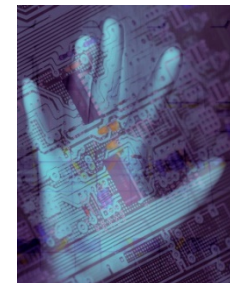
Ex : renewable  
energies, smart  
cities, nuclear

Engineering  
Mathematics



Ex : operations  
research,  
optimisation, data  
sciences

Complex Systems  
Engineering

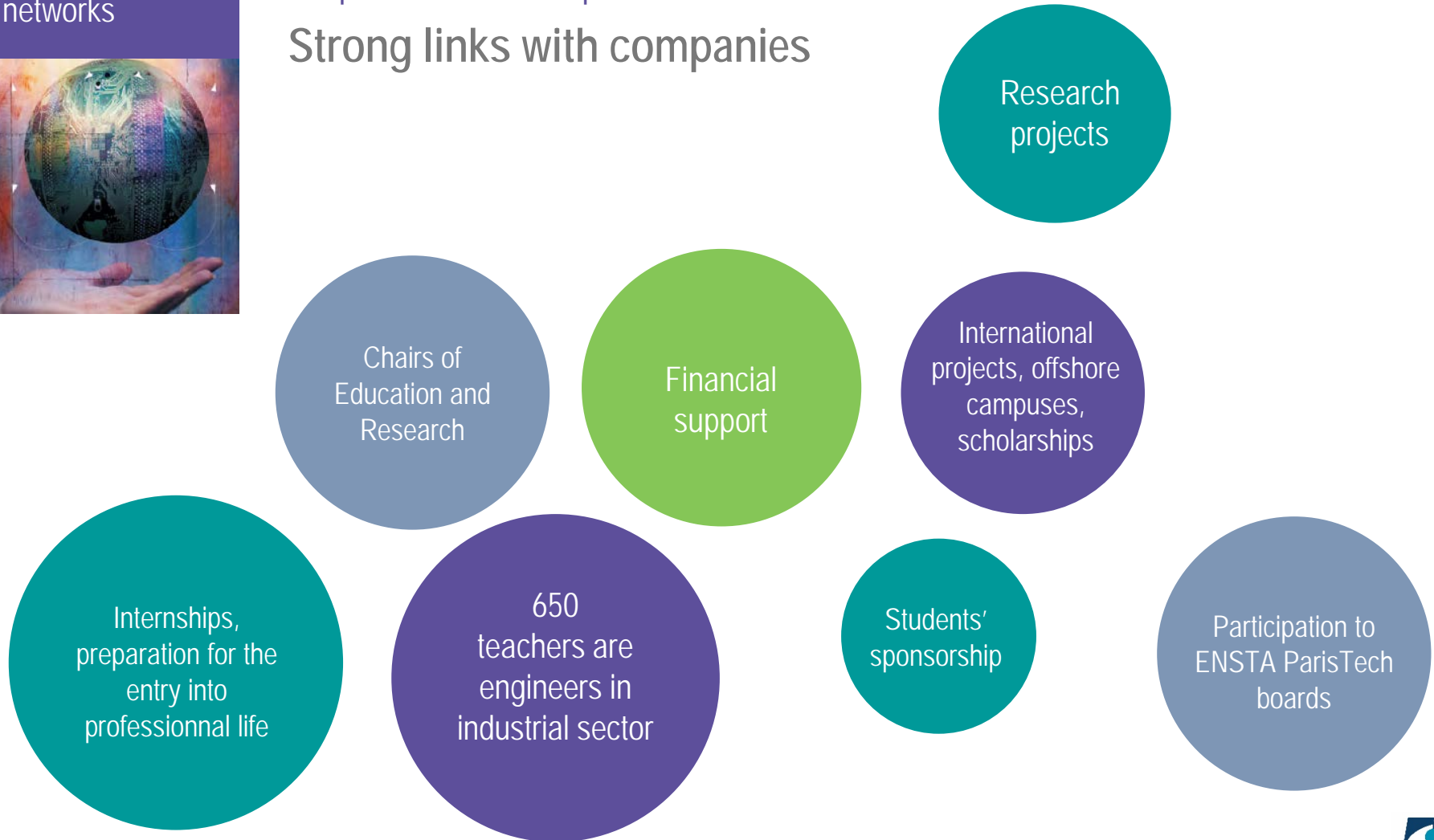


Ex : robotics  
and  
cybersecurity

Sommaire



## Corporate Partnerships Strong links with companies



# Partnerships and networks



## Some of our alumni



Jérôme Guillen (ENSTA 94) is Elon Musk's right-hand man at Tesla (President of the automotive sector)  
A double-degree at UPM-ETSII in 1993/1994 !



Eric Papin (ENSTA 90) is VP research and innovation at Naval Group



Pascal Clouzard (ENSTA 86) is Executive Director of Carrefour France





## International partnerships

114 Partnerships  
*In 31 countries*

30 double-degrees  
in America, Asia and Europe

12 weeks abroad  
(minimum)

10 months abroad in  
average



Tunis Campus

2 offshore  
campuses  
Tunisia et China



Shanghai Campus



28 %

International  
students at ENSTA  
ParisTech

28

nationalities

ParisTech

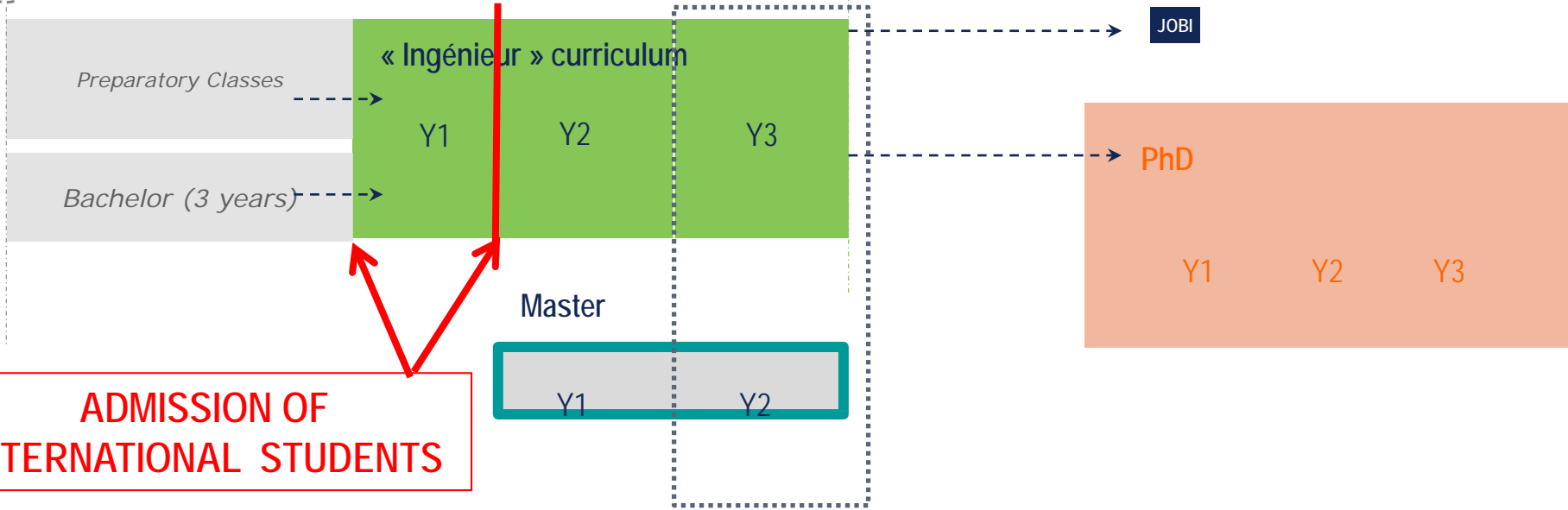


# Our curricula at a glance

## M.Sc. In Engineering «Diplôme Ingénieur ENSTA ParisTech »

« A level »

French students

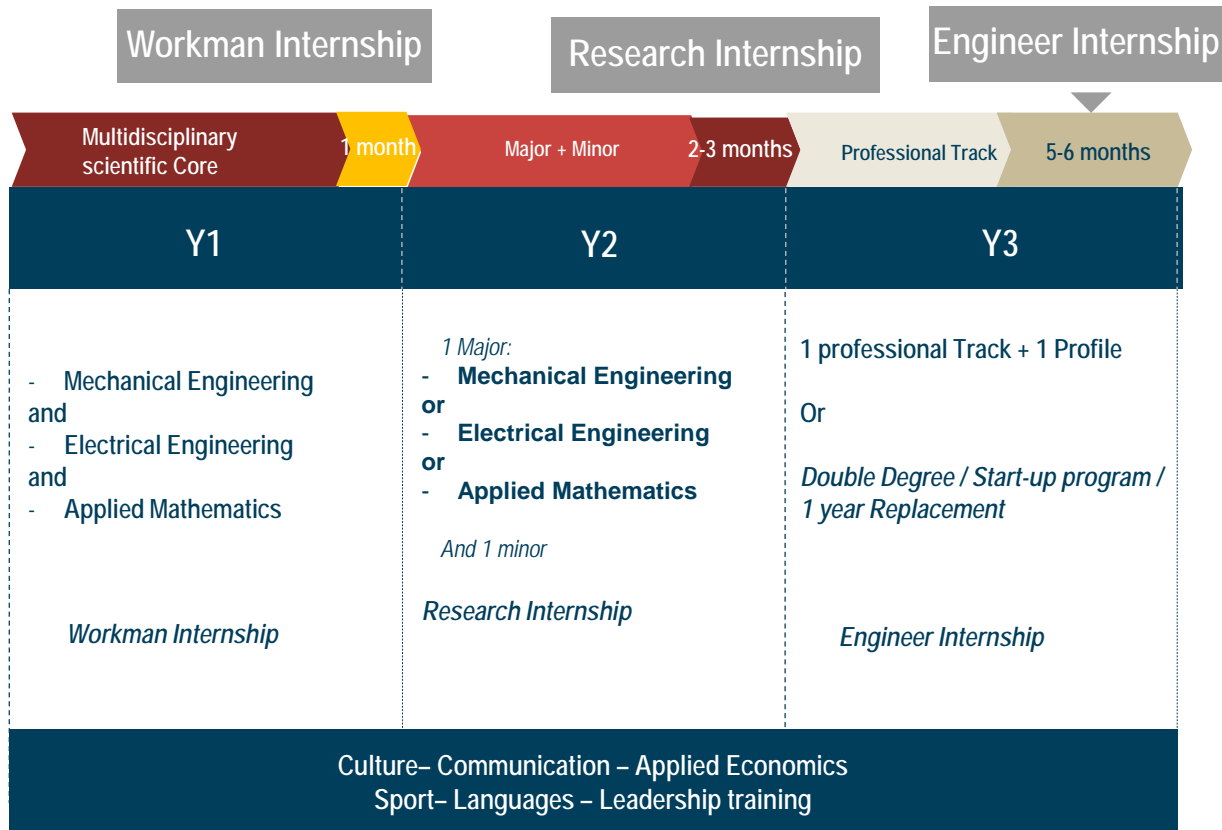


**ADMISSION OF INTERNATIONAL STUDENTS**

*Third year students are offered the opportunity to attend courses from the second year of a master (research oriented profiles)*

**3 Internships during the curriculum, at the end of each year :  
for a research and industrial - oriented training**

# Structure of the Engineer Program



Minor  
- Deepening of a field inside a major  
OR  
- Transversal skill

## YEAR 2 : 1 MAJOR + 1 Minor

RESEARCH PROJECT		10 weeks minimum
1 Minor		
Education through Research		
Economy, Humanities, Languages and Sport	ATHENS Week	
A MAJOR to be chosen		



### Mechanical Engineering

- Mechanical Modelling
- OR
- Intelligent Systems
- OR
- Environment

### Electrical Engineering

- Artificial Intelligence and Cyberphysics
- OR
- Software and Cybersecurity

### Mathematical Engineering

- Applied Mathematics
- OR
- Mechanics and Physics

# « Ingénieur » program 3rd year

## « Transport »

- + Smart mobility & Vehicle Engineering
- + Maritime transport systems

## « Energy »

- + Energy systems: innovation and process optimisation
- + Nuclear energy
- + Offshore energies engineering

## « Engineering Mathematics »

- + Optimization and Data sciences
- + Quantitative Finance
- + Modelling and Simulation

## « Systems Engineering »

- + Information systems
- + Robotics and embedded systems
- + Artificial Intelligence



11 Advanced Specialisation Options

Year 3



« Ingénieur » program  
3rd year

Minimum 2 languages including English  
Culture and Humanities

Law, Economy, Management

Economy, Humanities, Languages

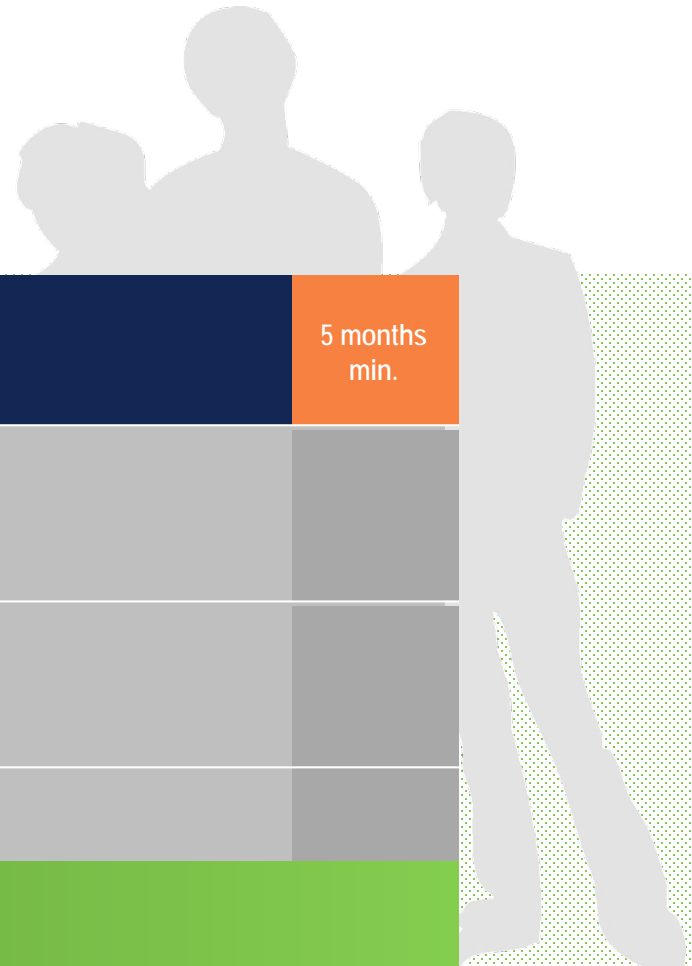
11 Advanced Specialisation Options

Year 3

Education

« Ingénieur » program

3rd year



SECOND SEMESTER:  
FINAL DEGREE PROJECT

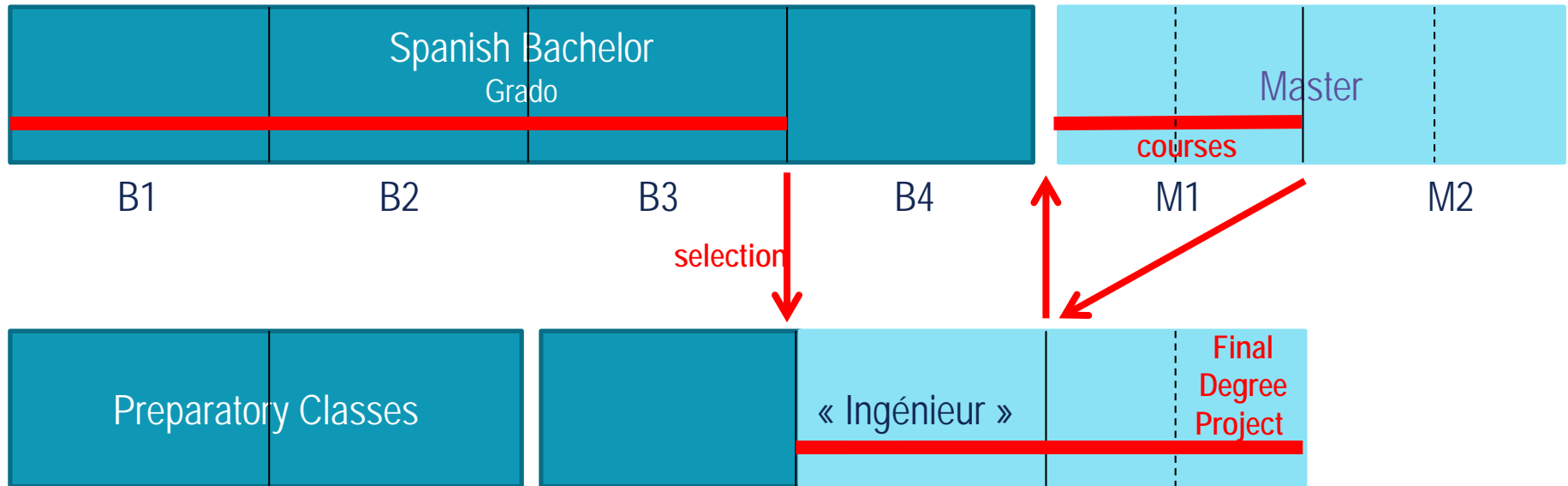
5 months  
min.

Economy, Humanities, Languages

11 Advanced Specialisation Options

Year 3

« Ingénieur » program  
Admissions and degree program for students  
Track 1 : ETSIAE students only

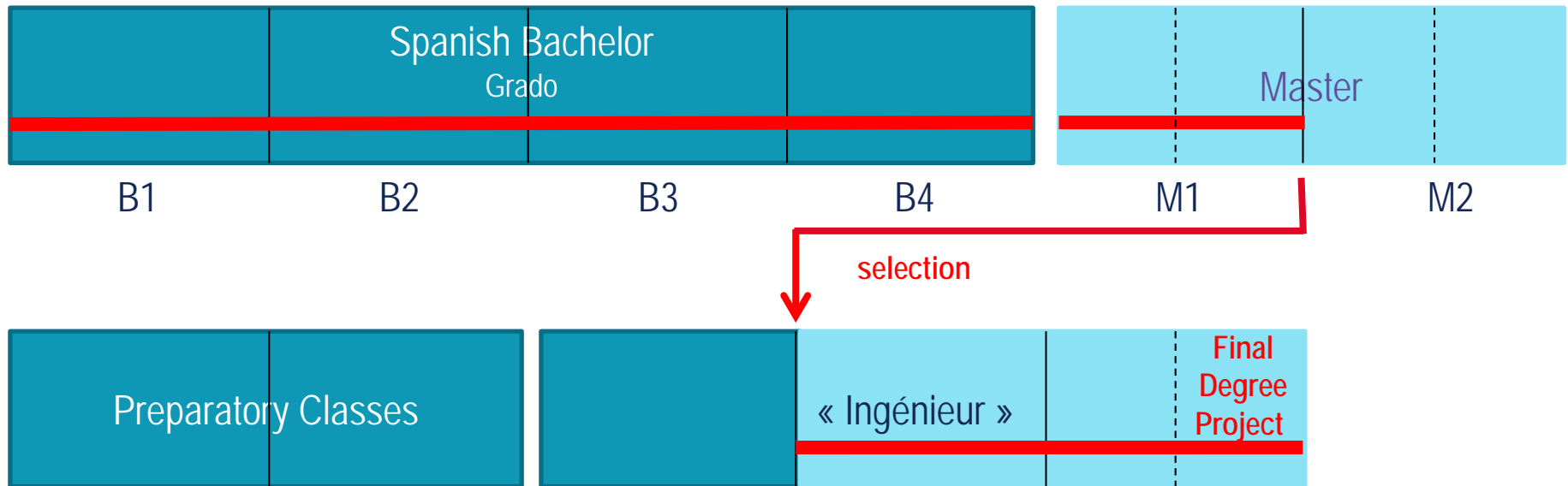


6 years  
3 degrees : Grado  
Master  
Ingénieur

Titre présentation



« Ingénieur » program  
Admissions and degree program for students  
Track 2 : for ETSIT & ETSIAE students



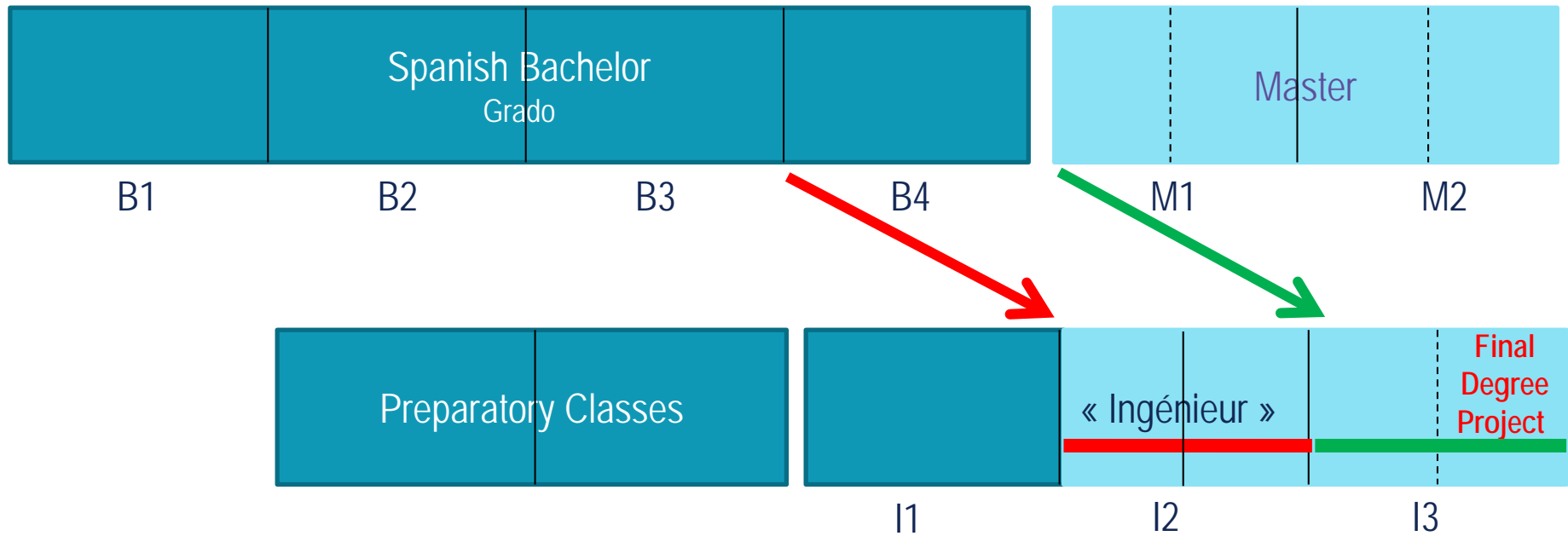
7 years  
3 degrees : Grado  
Master  
Ingénieur

Titre présentation



## « Ingénieur » program

Non-degree program for students from ETSIT & ETSIAE



From 3 months to one academic year  
Erasmus framewok

Titre présentation





« Ingénieur » program

## Admission

### Application process:

2 sessions

Spring session: dead-line April 15th 2019

for an intake in September 2019 (DD, exchange) or February 2020 (exchange)

*Autumn session: dead-line October 15th 2019*

*for an intake in September 2020 (DD / exchange) or February 2021 (exchange)*



# Research

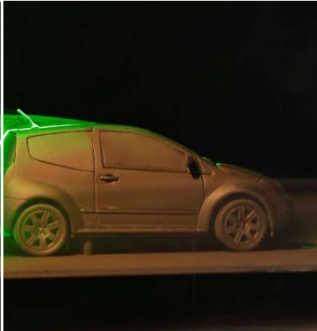


Titre présentation

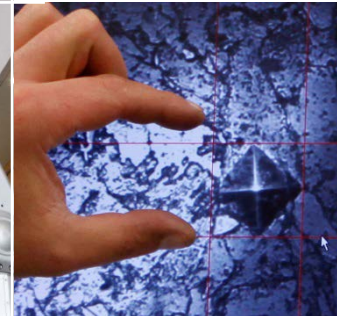
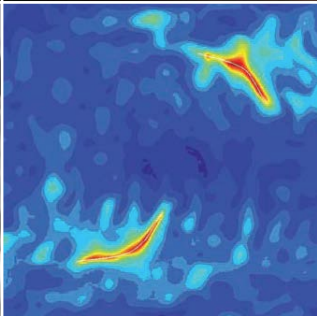
Research

## Scientific Policy

A high level applications oriented scientific research, in synergy with industrial needs.



Research is highly important in our education



Titre présentation

# Research in a few numbers

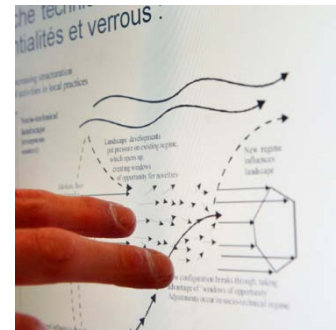
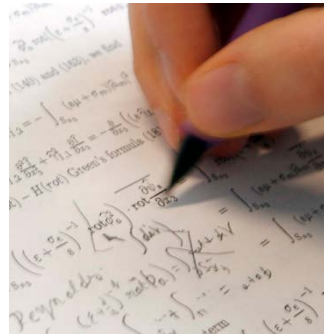
+ ~135

Researchers



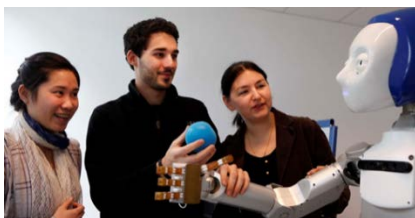
+

6 Research Units



+ ~220 publications  
in peer-reviewed journals

+ ~120 Ph.D. students



+ 11,7 M€ Research Contracts

+ 19 Europe -funded Projects

+ 22 state – funded Projects

+ 24 Excellence Projects (LABEX)

## Three Main Research fields

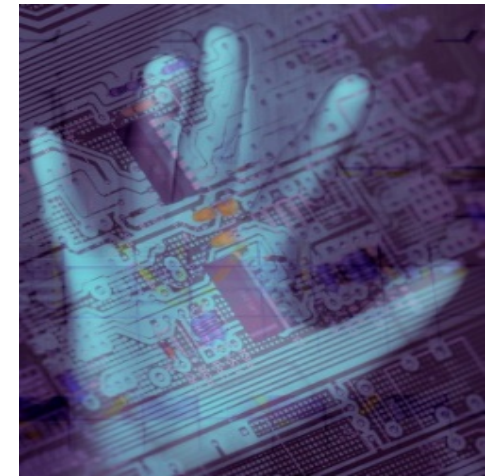
Energy



Transport



Defence



Analysis, Conception, Modelling and Simulation

Complex Systems Engineering





Rese  
Gérard Mourou, Physics Nobel Prize 2018, was director of this lab



+ 6 laboratories

Chemistry and Chemical Engineering

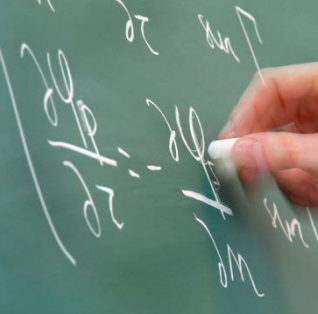
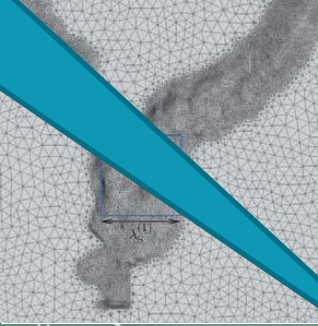
Computer Science and Systems Engineering

Applied Mathematics

Mechanical Engineering

Applied Optics

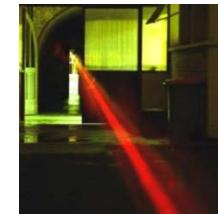
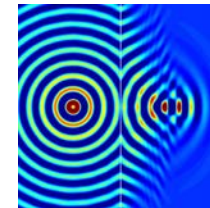
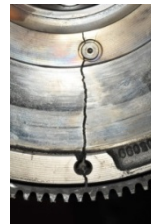
Applied Economics



# Main research fields

Research

1. Conception of autonomous systems
2. Data Sciences and Optimisation
3. Material aging, components and structures
4. Materials for Energy
5. Wave propagation and vibrations
6. Physics of ultra-short lasers
7. Non Destructive Control



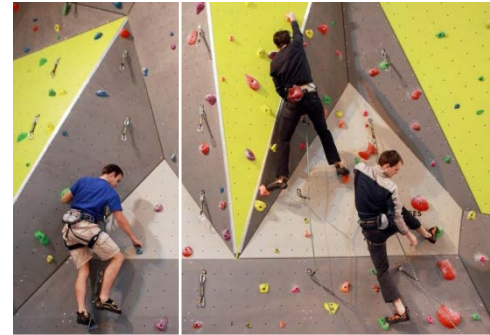
# Campus Life

- ⊕ A unique environment
- ⊕ A dense student life
- ⊕ Housing





# Campus Life

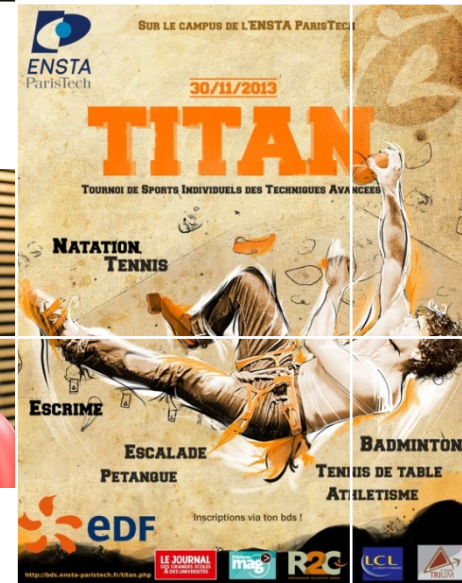


A 6 ha campus  
30 minutes from Paris downtown

## Students' life

A lot of activities:

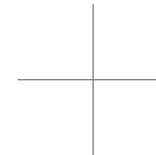
- + More than 50 students' associations
- + Sports and competitions





# Housing

430 individual dormitories



# TO SUM UP !

- ✓ A long tradition of excellence
- ✓ A application-oriented high level scientific education, related to the needs of industry
- ✓ A focus on research, for research but not only
- ✓ A strong link with companies
- ✓ Excellent placement after graduation
- ✓ An international environment
- ✓ An amazing campus

# JOIN US !!

Voir la présentation vidéo 



[www.ensta-paristech.fr](http://www.ensta-paristech.fr)

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