



**ENSTA  
BRETAGNE**

**MULTIDISCIPLINARY  
GRADUATE AND  
POSTGRADUATE  
FRENCH ENGINEERING  
SCHOOL**

**ÉCOLE NATIONALE SUPÉRIEURE DE TECHNIQUES AVANCÉES BRETAGNE**

TRAINING – RESEARCH – INNOVATION





**Bruno Gruselle,**  
Directeur

*“ENSTA Bretagne is a school for progress. After 50 years, this graduate and postgraduate school is still in its prime and its training, research and support of innovative projects have been in full expansion over the last 20 years. Its unique character is not only due to the many and atypical disciplines studied on campus, but also the dual nature of its activities being both civilian and military. The school is at the heart of an extensive network of companies of all sizes, who entrust us with the preparation of their future engineers in tomorrow's innovation and the challenges which await them. In Brest, oriented towards all things maritime and with its international outlook, ENSTA Bretagne proposes an inspiring environment which defends diversity and enables all to thrive.”*

## PARTNERSHIPS WITH THE MOST INNOVATIVE INDUSTRIES

~ **350**

MSc & PhD Engineers  
graduate /year

~ **1000**

Students [graduate, post  
graduate and PhD]

> **1000**

Industrial partners



MARITIME SECTOR



DEFENSE



INFORMATION AND  
COMMUNICATION  
TECHNOLOGIES



AERONAUTICS AND SPACE



AUTOMOTIVE AND  
PROFESSIONAL VEHICLES



RESEARCH



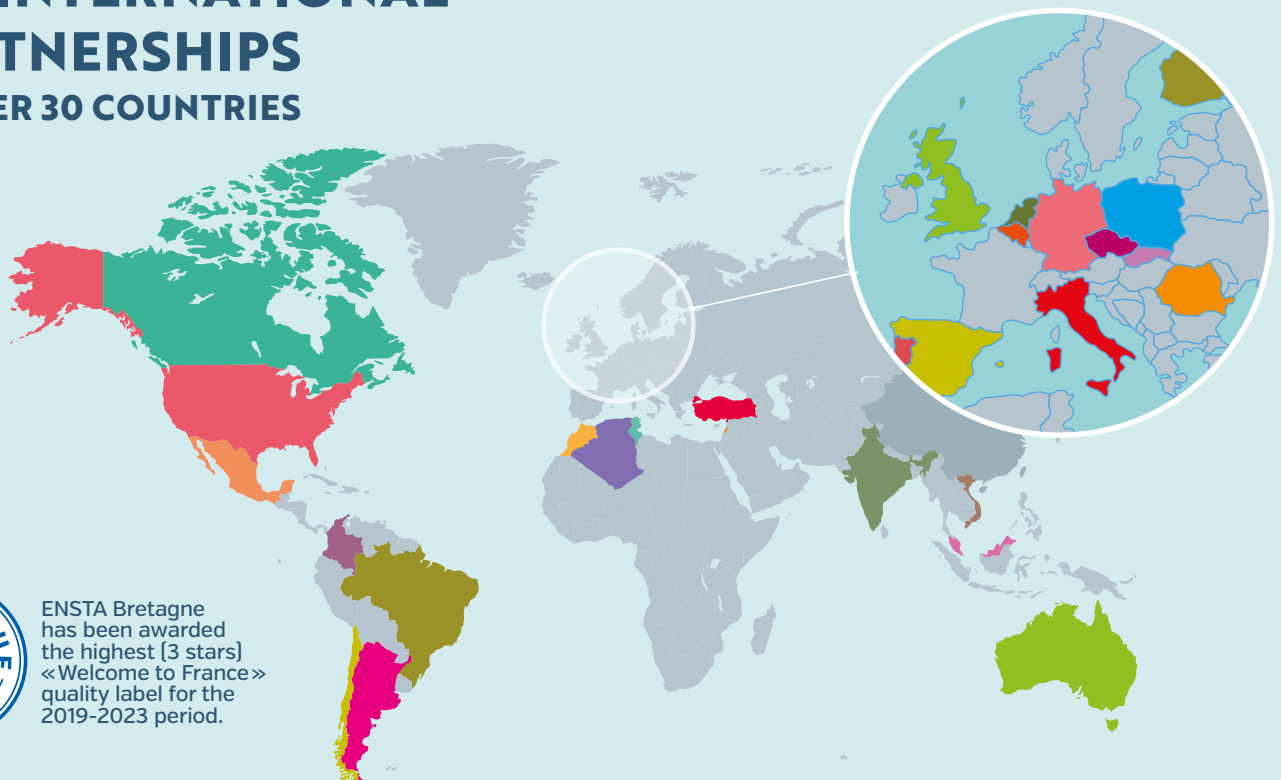
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## 100 INTERNATIONAL PARTNERSHIPS IN OVER 30 COUNTRIES



ENSTA Bretagne  
has been awarded  
the highest [3 stars]  
«Welcome to France»  
quality label for the  
2019-2023 period.





# WORLD CLASS GRADUATE AND POST GRADUATE ENGINEERING SCHOOL, RESEARCH CENTER AND DOCTORAL COLLEGE



- Over **200 years** of training experience
- **Public** establishment
- Under the supervision of the **French Ministry for Armed Forces** (the DGA: the Defense, Procurement and Technology Agency)
- **Quality Management Systems certified ISO 9001 (v2015)** for all its activities



⊕ **TRAINING** IMMEDIATELY OPERATIONAL, HIGH LEVEL GENERAL AND SPECIALIZED ENGINEERS AND EXPERTS

⊕ LEADING CUTTING EDGE **RESEARCH**

⊕ SUPPORTING **INNOVATION** AND COMPANY CREATION

ENSTA Bretagne's incubator runs entrepreneurship courses and houses innovative start-ups



## KEY CHALLENGES

TECHNOLOGICAL ADVANCE

REDUCTION OF **ENVIRONMENTAL** FOOTPRINT

RENEWABLE **ENERGIES**

TRANSPORT OF THE FUTURE

SUSTAINABLE **MARITIME** DEVELOPMENT

**CYBERSECURITY**

# 20%

of our students  
are from abroad

# 20%

of our young  
engineers work abroad

## NUMEROUS DOUBLE DEGREES:

GeorgiaTech, IIT Chicago,  
The University of Adelaide,  
FIUBA, UFRJ, Tongji, TU  
Chemnitz, HAN Arnhem,  
CVUT Prague, Cranfield  
University...

# OUR FIELDS OF EXCELLENCE

Diverse fields of excellence, often unique in France, among the best in the world.

ENSTA Bretagne's training and research covers **INFORMATION TECHNOLOGY**, **MECHANICAL SCIENCES** and **HUMAN SCIENCES**.

Students gain in-depth knowledge in their choice of one of the ten fields of expertise, which prepares them for the demands of professional life.

■ «Diplôme d'ingénieur» [i.e. MSc in Engineering]    ○ Co-operative Engineering Program  
▲ Masters [MSc] / Advanced Masters / PhD programs

  
**HYDROGRAPHY  
AND OCEANOGRAPHY  
[CAT. A]\***



  
**NAVAL AND OFFSHORE  
ARCHITECTURE\*\***



  
**AUTONOMOUS  
ROBOTICS\***



  
**PYROTECHNIC  
SYSTEMS\***



  
**OBSERVATION  
SYSTEMS AND AI,  
EMBEDDED SYSTEMS**




  
**VEHICLE  
ARCHITECTURE**



  
**SECURITY AND DIGITAL  
SYSTEMS**



  
**ADVANCED MODELING  
OF MATERIALS AND  
STRUCTURES**



  
**BUSINESS AND  
ENTREPRENEURSHIP  
SCIENCES**



  
**MARINE RENEWABLE  
ENERGIES\***



\* courses are unique in France

\*\* Over 50% of France's naval architects have been trained by ENSTA Bretagne



# HIGH LEVEL TRAINING PROGRAMS

Created in 1971, ENSTA Bretagne satisfies the requirements of public bodies and companies, in the civilian and defense sectors, by **training engineers and experts prepared for demanding and constantly evolving technological environments**

## ENGINEERING PROGRAMS (i.e. MSc in Engineering)



### MULTIDISCIPLINARY « DIPLOME D'INGENIEUR » (MSC IN ENGINEERING)

- A 3-year program
- Solid core curriculum in sciences, technologies and human sciences
- A choice of 9 specializations
- Entrance level: bachelor or masters degree
- + 18% of military student engineers, trained for the DGA [Defense Procurement and Technology Agency] of the French Ministry of Armed Forces.

### CO-OPERATIVE ENGINEERING PROGRAM

- A 3-year program
- Focusing on mechanics, electronics and ICT
- 40% in school and 60% in company
- A choice of 4 specializations
- Entrance level: bachelor or masters degree
- Enroll on line.  
*International students who wish to enroll must have completed at least one year of initial training in France.*

## SPECIALIZED PROGRAMS

### MASTERS (MSC)

- Entrance level: bachelor or masters degree



### ADVANCED MASTERS

- Entrance level: masters degree or equivalent



### PHD PROGRAMS

- 3 research laboratories : Lab-STICC (ICT), IRDL (Mechanics) and FoAp (Human and social sciences)
- Entrance level : masters degree



# ACADEMIC AND APPLIED RESEARCH

The research programs that ENSTA Bretagne leads with its numerous partners, answer concrete civilian and military issues, put forward by companies or the DGA.



EXCEPTIONAL  
EXPERIMENTAL  
FACILITIES IN  
MECHANICS AND ICT

ENSTA BRETAGNE IS A  
MEMBER AND A BOARD  
MEMBER OF MANY GROUPS,  
SCIENTIFIC NETWORKS AND  
COMPETITIVENESS CLUSTERS:

Pôle Mer Bretagne Atlantique, France Energies Marines, ID4CAR, Images et Réseaux, EMC2, B-com, ISBLUE, Pôle d'Excellence Cyber, Orion...

STRONG LINKS  
WITH INDUSTRY:

- chairs
- joint laboratories
- theses
- test campaigns...

## MECHANICS

*Predicting the behavior and performance of materials and mechanical systems*

- ⊕ **Multi-material assemblies**
- ⊕ **Structures, fluids and interactions**
- ⊕ **Material behavior and durability**
- ⊕ **Composites**

**LABORATORY** **Institut de Recherche Dupuy de Lôme**  
[irdl.fr]

UMR CNRS 6027

300 researchers and PhD students from UBS, ENSTA Bretagne, UBO and ENIB



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## INFORMATION AND COMMUNICATION TECHNOLOGY

*From sensor to decision*

- ⊕ **System security and reliability**
- ⊕ **Wave physics and remote sensing**
- ⊕ **Robotics & sensing**
- ⊕ **Data processing, decision theory and artificial intelligence**

**LABORATORY** **Lab-STICC**  
[labsticc.fr/en]  
-  
UMR CNRS 6285

540 researchers and PhD students from IMT Atlantique, UBS, ENSTA Bretagne, UBO and ENIB.



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## HUMAN AND SOCIAL SCIENCES

*On professional training and adult learning*

- ⊕ **Design of training initiatives**
- ⊕ **Knowledge transfer**
- ⊕ **Training for innovation**
- ⊕ **Engineer identity dynamics**

**LABORATORY** **Training and Professional Learning**  
[www.ensta-bretagne.fr/en/research-unit-training-and-professional-learning]  
-  
EA 7529

100 researchers and PhD students from Cnam Paris, ENSTA Bretagne and AgroSup Dijon



## CONTACTS

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<b>Thibaut CASSIN</b> Head of International Relations	<b>Ingrid LE TOUTOUZE</b> Public Relations Officer
<b>Zacharie MALICOUTIS</b> Admissions Coordinator International Students [free movers]	<b>Jean-Yves HASCOËT</b> Quality Manager, Head of Sustainable Development and Social Responsibility



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