About IMT Atlantique

IMT Atlantique is a leading school of general engineering (among the top 400 universities in the world of THE World University Ranking 2019, in 3rd position among French engineering schools), internationally recognized for its research (present in 4 themes of the Shanghai ranking). It belongs to the Institute Mines-Telecom and reports to the Ministry in charge of industry and digital technology.

With 3 campuses in Brest, Nantes and Rennes, an incubator on all 3 campuses and a site in Toulouse, IMT Atlantique aims to combine digital, energy and the environment to transform society and industry through training, research and innovation and to be, internationally, the educational institution and French research of reference in this field. Since September, IMT Atlantique has been offering 2018 a new training of general engineers. Students are recruited on the Mines-Bridges. The School also awards two engineering diplomas through apprenticeships, master’s degrees, specialized masters and doctorates.

The programme at IMT Atlantique, built on cutting-edge research carried out in six joint research units (with the French National Centre for Scientific Research (CNRS), the French Institute for Research in Computer Science (INRIA), the French National Institute of Health and Medical Research (INSERM), the universities and engineering schools under its trusteeship: The Laboratory for Process Engineering for Environment and Food (GEPEA), the Research Institute of Computer Science and Random Systems (IRISA), the Laboratory of Medical Information Processing (LATIM), the Laboratory of Information and Communication Science and Technology (LABSTICC), the Nantes Laboratory of Digital Sciences (LS2N) and the Laboratory of Subatomic Physics and Related Technologies (SUBATECH). The school builds on research excellence in its flagship areas (energy and digital technology, cybersecurity, the environment and digital technology, industry of the future, nuclear technology and interactions) coupled with science to confront the challenges of tomorrow: digital transition, environmental transition, industrial transition, energy transition, healthcare of the future and basic research. The school is a member of the Carnot M.I.N.E.S (Innovative Methods for Business and Society) Institute, the Carnot TSN (Telecom and Digital Society) Institute and a founding member of the Université Bretagne Loire consortium of universities and higher education institutions.

For more information : http://www.imt-atlantique.fr/

About the École Navale

The École Navale has been training sailors and officers who, from the moment they join the forces, will be responsible for implementing - at sea - systems considered as among the most complex designed by man.

The quality of this teaching, recognized throughout history and the world, places our school at the very centre of the major maritime challenges of today and tomorrow by guaranteeing - primarily to the French Navy, but also to France - access to a pool of sailors, decision makers and engineers ready for the challenges ahead.

Its research laboratory IRENAY, approved by CARNOT ARTS, includes two groups: mechanical and naval energy systems, and modelling and processing of maritime information. The naval academy is a centre of excellence for cyber defence of naval systems as well. It is specifically capable of providing researchers with the experience of users, from the lowest TRL.

In January 2017, the École navale became a public institution in the field of scientific, cultural and professional studies - a large establishment (EPSCP-GE) under the supervision of the Ministry of the Armed Forces. It is now seeking to develop sizeable industrial partnerships around the theme of combat ships in marine engineering, energy, ICT and cyber defence.

For more information : https://www.ecole-navale.fr
Innovating together for smart defence.

On the occasion of Euronaval, the world’s leading technology event naval and defence of the future, which is held in Paris-Le Bourget on 22 to 26 October 2018, the Pôle de compétitivité Mer Bretagne Atlantique, ENSTA Bretagne, IMT Atlantique and the École Navale have decided to unite their strengths to promote maritime excellence in the tip of Brittany in terms of innovation and collaborative R&D in the service of the naval and defence industry.

This collective initiative was born from the will of the the Regional Council of Brittany to promote Breton marine research through its schools of engineers. Complementary academic structures in terms of training and research and strongly involved in innovation, the École Navale, ENSTA Bretagne and IMT Atlantic cover all the maritime sciences and technologies federated around the Competitiveness Cluster Atlantic Brittany Sea.

Ambitious projects

The Chair of Cyber Defence of Naval Systems. Created in 2014, this chair aims to address the following issues vulnerability of ships to the sea (warships, LNG carriers, container carriers,...) with computer and electronic equipment and reduced crews likely to be exposed to cyber attacks. R&D work is carried out in conjunction with Naval Group, Thales, the Regional Council of Brittany, the Pôle d’excellence Cyber, the École Navale and IMT Atlantique.

Reliability and security of robotic technologies. The chair «WAVES» with THALES, focuses on the optimization of distributed and autonomous sensor networks for the detection and automatic identification in the marine environment.

Improve the durability of naval systems at sea. This chair with Naval Group, ENSTA Bretagne and IFRD Laboratory, aims to improve knowledge of the mechanical behaviour of structures in terms of life span (measurement and characterization of fatigue properties of materials, assemblies and new process of manufacturing), rapid characterization fatigue properties (materials, assemblies, new processes of manufacturing).

International collaborations

The «Wasaa» group. In 2017, the multi-disciplinary alliance «Wasaa» (Western Alliance for Scientific Actions with Australia) was created by 6 Breton establishments (École Navale, ENIB, ENSTA Bretagne, IMT Atlantic, UBO and UBS) to initiate collaborations with Australian universities. The first ones were signed with UniSA and UoA from South Australia, Flinders is also a partner of some members in Wasaa, and a winter school was created. This Campus initiative Mondial de la Mer is supported by the Brittany region, MESRI and the Ministry of the Armed Forces.

A French-Australian Program to boost defence skills, specifically in submarine and shipbuilding. Students will be awarded two Master’s degrees: a Master of Marine Engineering from the University of Adelaide (UoA), and a Master of Science in Marine Engineering, Surface Ships and Submarines from ENSTA Bretagne.

Trade agreements with India. 6 Breton establishments of the World Sea Campus (including l’École Navale and ENSTA Bretagne), have signed an agreement with IIT to Madras (Chennai), which will make it possible to increase student exchanges and teacher-researchers.

About ENSTA Bretagne

Graduate and post graduate engineering school and research institute setting the standard for innovation in the Maritime, Defense and High Technology sectors.

ENSTA Bretagne, the French leader and international benchmark in Naval Engineering and Defense Systems, is a graduate and post graduate engineering school under the administrative authority of the DGA (Direction Générale de l’Armement) – the French procurement agency. It is also a valued partner in the Aerospace, Auto-mobile, Energy and Information Technology sectors. On its vast campus, ENSTA Bretagne trains engineers and high level experts, awards PhDs and leads cutting edge research which is highly oriented towards civilian and military industrial applications.

The research is led in joint laboratories with industry and laboratories of international renown for which it is the administrative authority, together with the CNRS, universities and partner engineering schools: chairs with Naval Group, Thales and Centigent, UMR Lab-Stic, UMR IFRD and CRF. The training and research cover a wide range of skills:
- ICT: Hydrography and oceanography (cat. A) ; Embedded systems ; Observations systems and artificial intelligence ; Mobile robotics & autonomous systems ; Security and digital systems.
- Mechanics: Maritime engineering (naval architecture, fluids and interaction) ; Renewable Marine Energies ; Automotive Engineering ; Pyrotechnics & Propulsion ; Advanced modelisation for Materials & Structures ; Behavior and durability of structures.
- Humanities: Management of Maritime Projects ; Engineering and Business Sciences

For more information : www.ensta-bretagne.fr

About Pole Mer Bretagne Atlantique

The Sea Innovation Cluster in Brittany and Pays de la Loire

Gathering nearly 350 members such as big enterprises, SME, research centers and training and education establishments, the Pole Mer Bretagne Atlantique contributes to the development of the maritime economy. The Pole Mer Bretagne Atlantique facilitates the emergence of collaborative research and development projects in the maritime sector by connecting research and industrial skills, sourcing funding networks, accompanying SME in their R&D investments and enabling its member companies to secure prominent positions in their domestic and international markets.

Maritime security and safety: support to the emergence of new activities As more and more activities emerge in the maritime field, the sea becomes a sensitive domain for human security and for national sovereignty. Nowadays surveillance at sea requires the development of increasingly sophisticated devices as well as of complex systems: satellite, airplane, boats, drones, ... The Pole Mer Bretagne Atlantique aims to propose such innovative devices of monitoring, intervention and life safety at sea. The Pole Mer Bretagne Atlantique accompanies emerging activities thus boosting growth and employment on high-growth markets.

A few innovative projects:
- CANOPUS - Intelligent beacons for offshore undersea acoustic positioning and maritime surveillance
- COMET - Competitive, autonomous subsea robots that operate in groups
- NEMO - A multi-captor simulator for detecting and surveying threats at sea
- NEMOSENS - New design for micro-AUV platform
- SEA TEST BASE - Sea-based marine and undersea equipment R&D test platform
- TIMS - Superfast communications terminal for use on board ships at sea

More information here : www.pole-mer-bretagne-atlantique.com, @PoleMerBa

Maritime activities are at the heart of the regional council of Brittany’s research and innovation strategy. Breton academic actors are among the major players in marine research, particularly in the field of maritime safety and security. Through this collective initiative for the Euronaval exhibition, the regional council of Brittany wishes to promote this excellence, which is part of a framework of international cooperation, in particular through a strategic partnership with South Australia.