

**SHAKE** THE FUTURE.



# CENTRALE NANTES

*Research Intensive  
Institute of Technology*

*French 'Grande Ecole'*

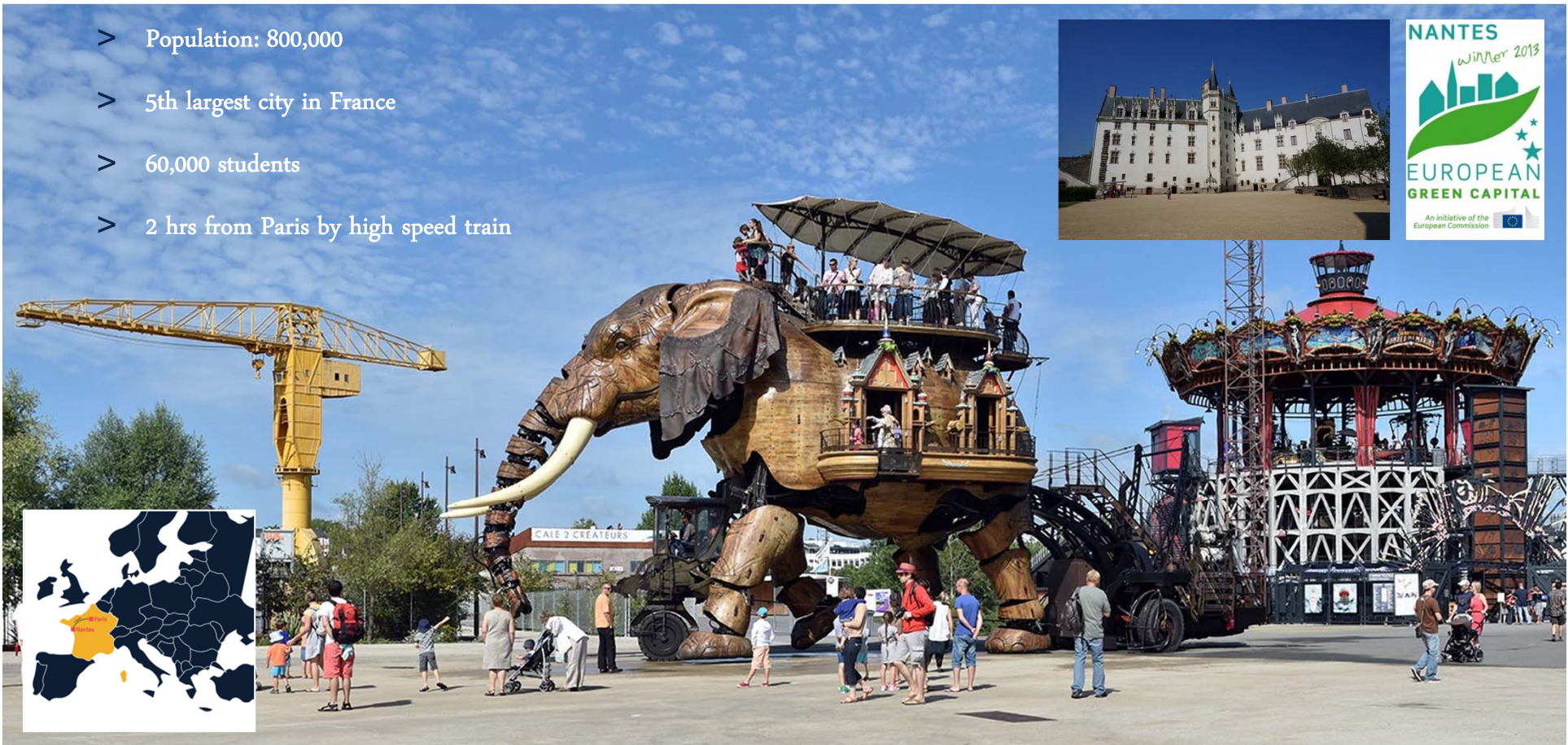
July 2019

# Nantes

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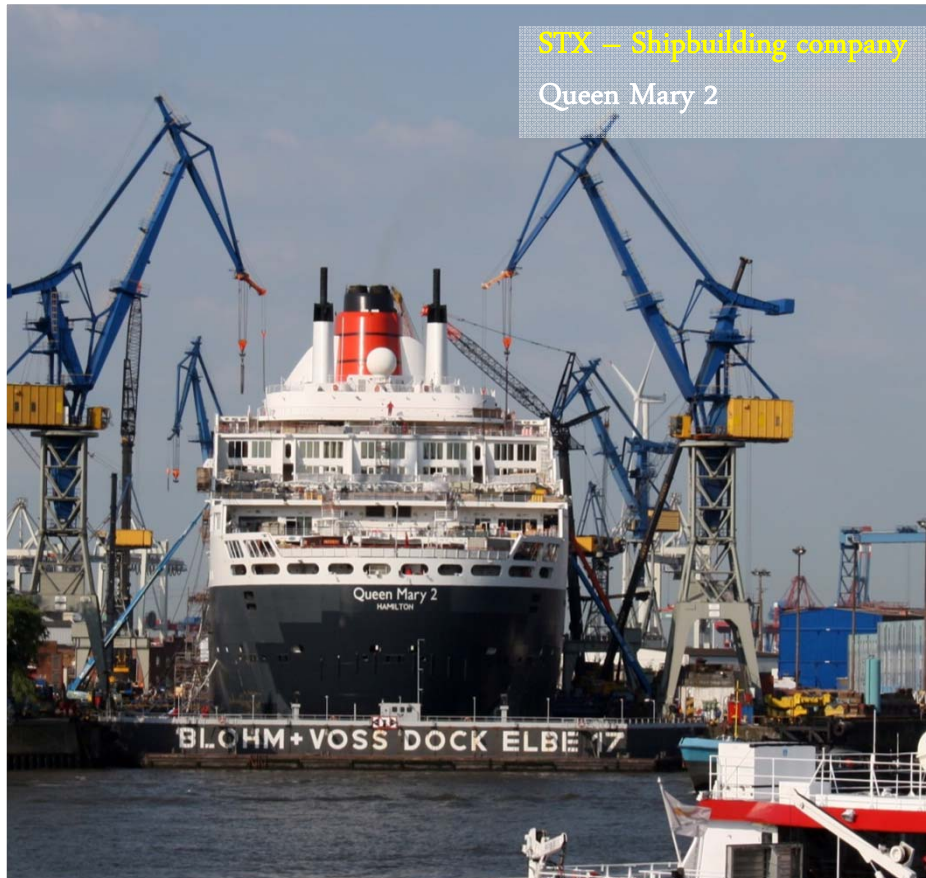


- > Population: 800,000
- > 5th largest city in France
- > 60,000 students
- > 2 hrs from Paris by high speed train



# The unique industrial environment of Centrale Nantes

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STX – Shipbuilding company  
Queen Mary 2



Airbus Nantes & Saint-Nazaire  
Aircraft manufacturer

# Centrale Nantes at a glance

Centrale Group - The five Ecoles Centrale - Lille, Lyon, Nantes, Paris and Marseille - share the same vision of excellence in general engineering higher education

- > Tradition dating back to 1919
- > Bachelor, Masters & PhD programmes
- > Comprehensive approach to engineering sciences
- > Advanced Scientific and Technological level combined with Management & Soft skills
- > Project work



# Reasons to choose Centrale Nantes

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## A TOP-RANKING SCHOOL

- > In the global top 25 for student mobility (U-multirank 2019)
- > 4<sup>th</sup> for engineering in France (Times Higher Education 2019)



## CUTTING-EDGE RESEARCH

- > 6 research institutes
- > 12 unrivalled research platforms
- > 260 PhD students
- > 1 CNRS medal



## WORKING HAND-IN-HAND WITH INDUSTRY

- > 26 industrial partners
- > 250 speakers from industry
- > Over 4,000 industrial projects per year
- > Work experience built into each programme
- > 120 company conferences and site visits per year



## RESOLUTELY INTERNATIONAL

- > 188 academic partners in 52 countries
- > 43% of international students on campus
- > 87 nationalities on campus
- > 24 % secure first employment abroad



## LEARN FROM OUR LEADING FACULTY

- > 550 teachers and research personnel from France and overseas



## A LIVELY, GREEN CAMPUS

- > 40 acres on the riverside
- > 80 student clubs and associations
- > Excellent sports facilities (artificial pitch, gymnasium, squash courts, dojo)
- > Halls of residence (guaranteed place for first year students)



## NANTES

- > Consistently ranked as one of the best places to live in France
- > 60,000 students
- > A thriving economy



## A WIDE RANGE OF PROGRAMMES

- > Bachelor of Science (Hons) in Engineering
- > Engineering Programme (Diplôme d'Ingénieur)
- > 6 Masters and 4 Erasmus Mundus Joint Master Degrees
- > Advanced Masters (Mastères Spécialisés)
- > PhD
- > Executive Education



## EXPLORE OPPORTUNITIES

- > Innovative project-based teaching
- > Careers support
- > A joint business incubator with Audencia Business School and ensa Nantes
- > 84% of our engineering programme graduates are in post within 2 months



## GLOBAL ALUMNI COMMUNITY

- > 17,000 alumni in 44 countries, 450 events per year

# Centrale Nantes rankings

Centrale Nantes joins the prestigious Times Higher Education World University Rankings



Out of only 903 establishments ranked worldwide for Engineering & Technology, Centrale Nantes is ranked 4th in France (Times Higher Education World University Rankings)

Centrale Nantes in the top 25 global performing universities for student mobility in 2019



Centrale Nantes: 6<sup>th</sup> place in the world's best performing institutions for student mobility, out of over 1700 in the ranking (U-Multirank 2019). Centrale Nantes stands out in three categories: international opening, knowledge transfer and research.

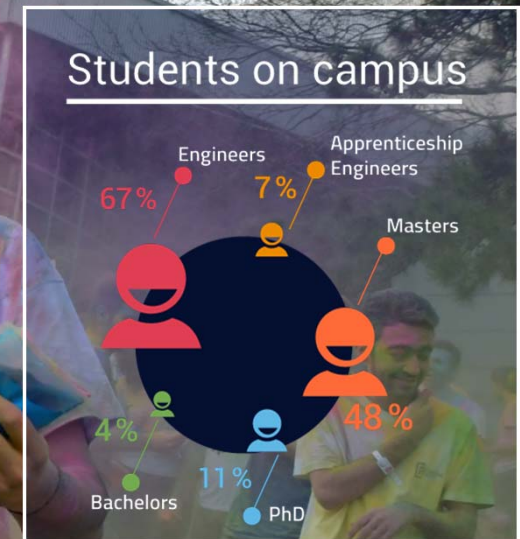


Centrale Nantes is ranked in the top 200 - and joint second in France - of the world's best universities for social and economic impact in the first edition of the Times Higher Education (THE) University Impact Rankings.



# International experience

- > 87 nationalities
- > 43% international students on campus
- > 188 university partners across 52 countries



# Cutting-edge research centred on Manufacturing, Energy transition & Engineering for Health

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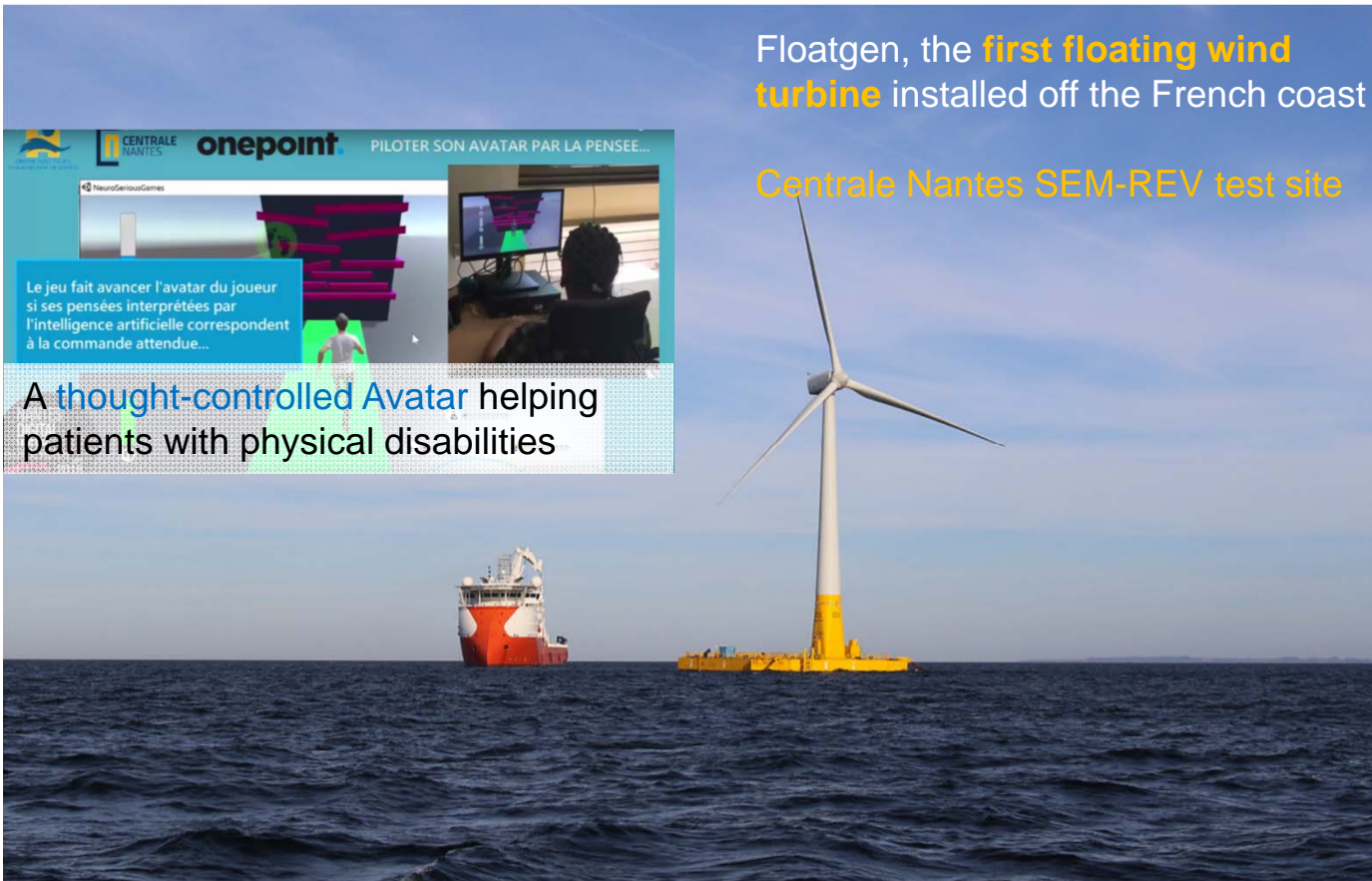
Floatgen, the **first floating wind turbine** installed off the French coast

Centrale Nantes SEM-REV test site

First full-scale propeller blade demonstrator for military applications printed using additive manufacturing.



A **thought-controlled Avatar** helping patients with physical disabilities





## 6 Internationally-recognised research institutes

Our **CNRS research institutes** deploy an interdisciplinary approach to address three major challenges for growth and innovation: factory of the future, energy transition and engineering for health

- > Research Laboratory in **Hydrodynamics, Energetics & Atmospheric Environment** (LHEEA)
- > Laboratory of **Digital Sciences** of Nantes (LS2N)
- > Research Institute in **Civil & Mechanical Engineering** (GeM)
- > Jean Leray' **Mathematical** Institute
- > **Architectural** and **Urban Ambiances** Laboratory
- > **High Performance Computing** Institute (ICI) with a supercomputer



# 12 Experimental Research Platforms

- > Ocean Test Facilities
- > SEM-REV Offshore Test Site
- > Engine and Vehicle Test Benches
- > Dynamic and Static Test Centre
- > Robotics Platform
- > Rapid Manufacturing Platform
- > Composites Platform
- > Smart Factory Platform
- > Structural Testing Floor
- > Supercomputer
- > Wind Tunnels
- > Virtual Reality



## Synergies between research, innovation and education

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+100 contracts/year

- > Research collaborations
- > Transfer of technology
- > Experimental or numerical tests, consulting expertise...

12 Industrial Research Chairs

# Working hand-in-hand with industry

Centrale Nantes works hand-in-hand with industry: company visits, internships, projects, participation of external speakers in courses, conferences, partner days, interview simulations, job or internship offers etc.

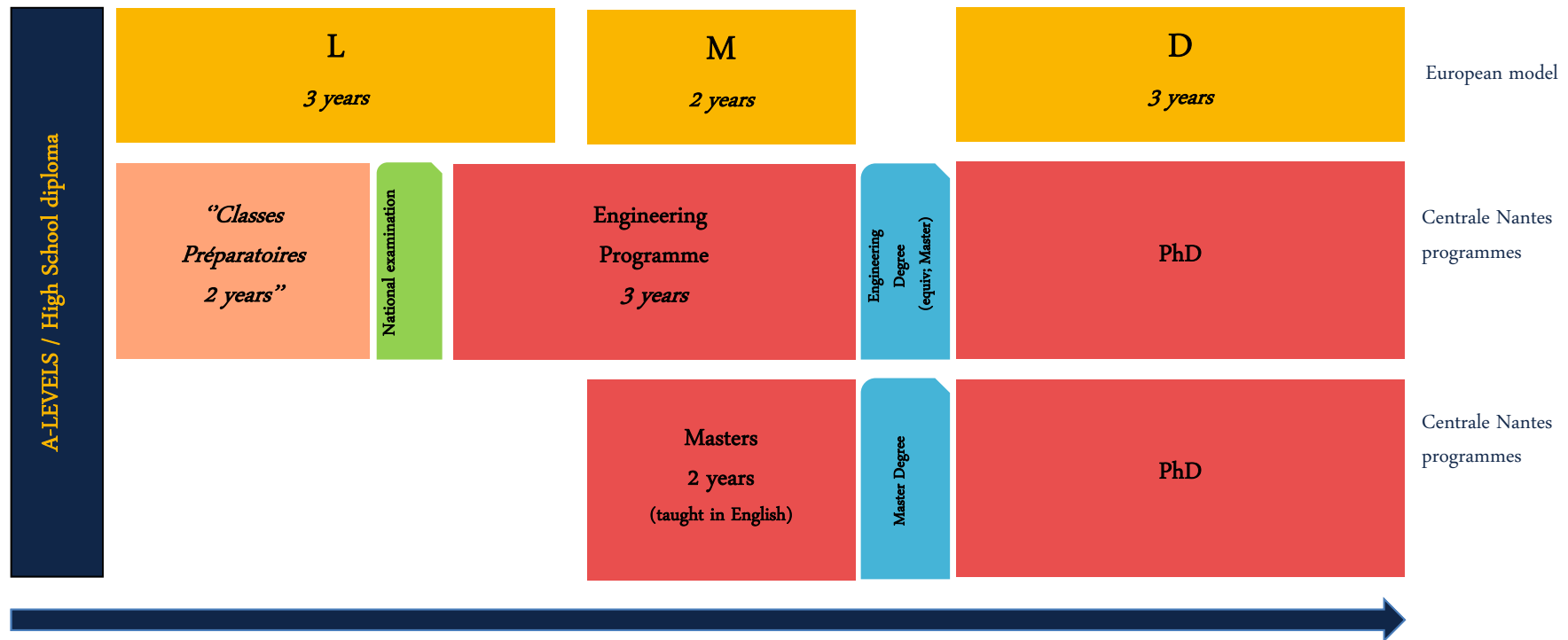
## Industrial research chairs:



## Some of our industries



# Higher education models



The admissions process is highly selective. French students with excellent high school results spend two years in the intensive 'classes préparatoires aux grandes écoles' preparing for competitive entrance examinations to French engineering schools. Successful candidates then undertake three years of study at Centrale Nantes - corresponding to the senior undergraduate year and two graduate years.

## Engineering Programme: a wide choice of courses for our students

**21 specialisations on offer** in the fields of: manufacturing; geomatic, civil and environmental engineering; structure design; ocean & energy; robotics and control; digital economy, health etc

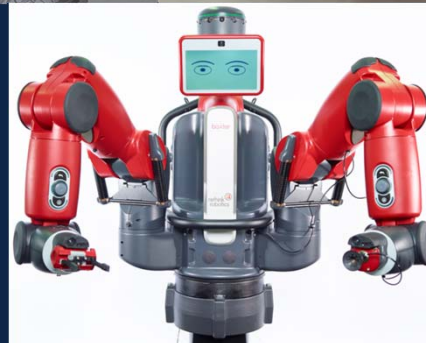
- > Including “doctorate” and project-based specialisations
- > industrial projects
- > Integrated and remunerated internships in the 2<sup>nd</sup> year (duration 5 months) and in the 3<sup>rd</sup> year (duration 6 months)
- > Choice of 11 final year *professional* specializations
- > Learn more: <https://www.ec-nantes.fr/graduate/engineering-programme-diplome-d-ingenieur-/course-specialisations-yrs-2-3/>



## 2<sup>nd</sup> and 3<sup>rd</sup> year specialisations in Manufacturing



- > **Embedded Control and Power Grids**
- > Industrial Engineering
- > **Mechanical Engineering for  
*Materials and Manufacturing***



- > **Aeronautics**
- > Product Engineering
- > **Robotics**

## 2<sup>nd</sup> and 3<sup>rd</sup> year specialisations in Geomatic, Civil & Environmental Engineering



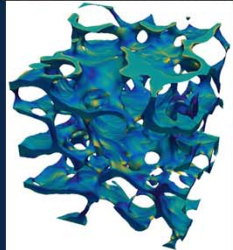
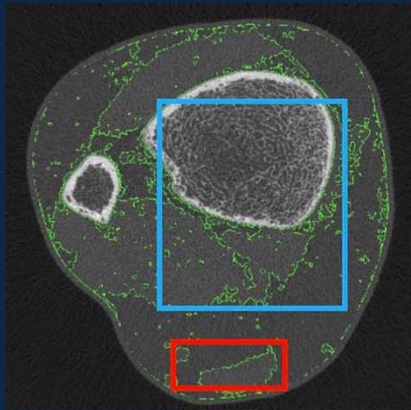
- > Civil Engineering
- > Digital City
- > Engineering Science for  
Housing and Urban Environment





## 2<sup>nd</sup> and 3<sup>rd</sup> year specialisations in **Digital Economy**

- > **Computer Science**
- > Data Analysis and Applications in Signal and Image Processing
- > **Mathematics and Applications**
- > Modelling and Simulation in Mechanics
- > **Virtual Reality**



## 2<sup>nd</sup> and 3<sup>rd</sup> year specialisations in Energy & Ocean

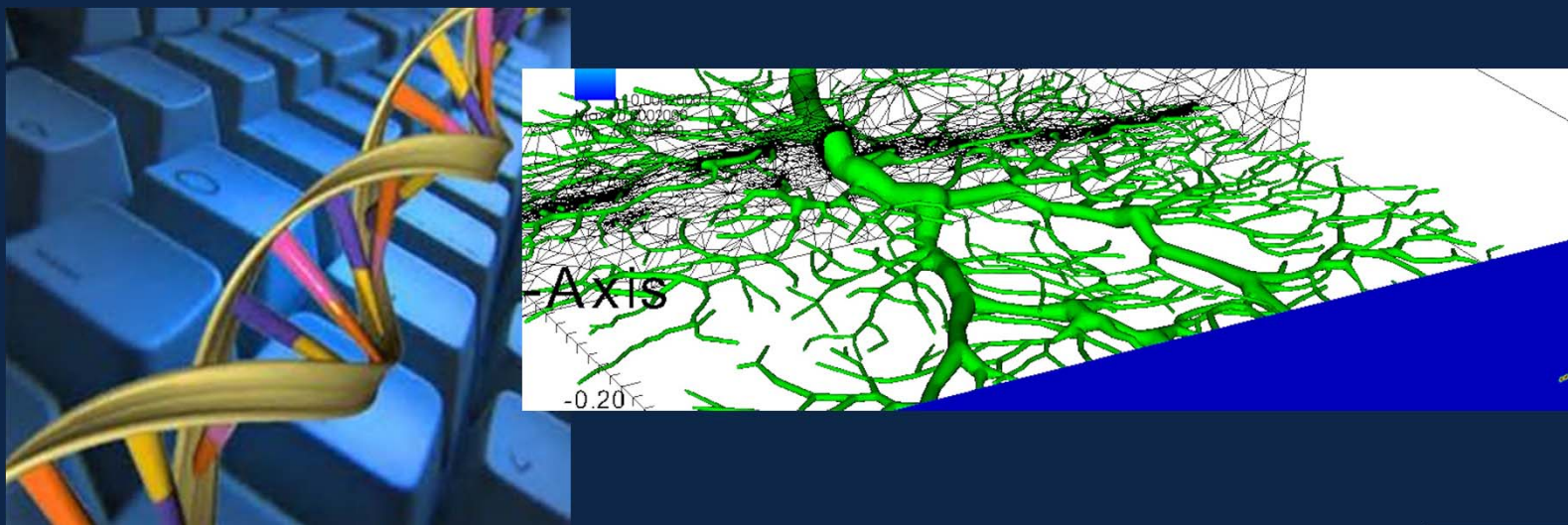


- > Energy Production and Management
- > Ocean: Hydrodynamics and Marine Engineering
- > Propulsion and Transport

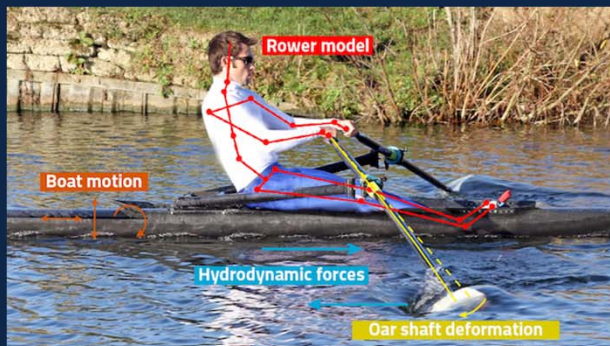


## 2<sup>nd</sup> and 3<sup>rd</sup> year specialisations in **Health**

> Digital Sciences for Life Sciences and Healthcare



## 3<sup>rd</sup> year Doctorate & Project-Based specialisations

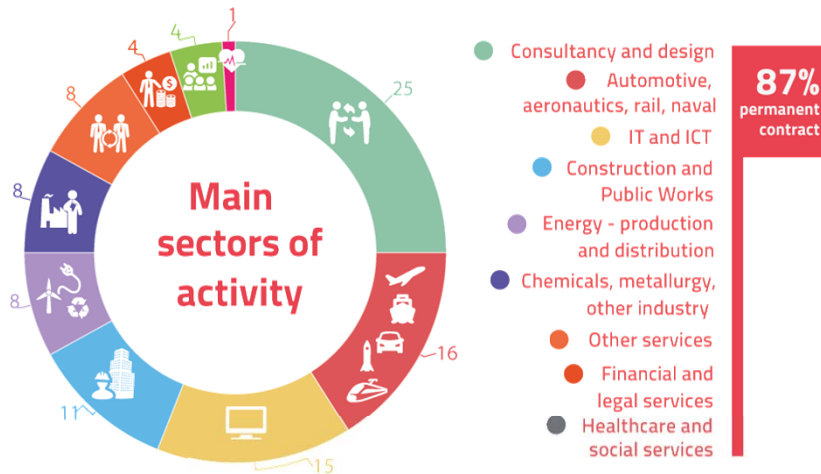


- > Scientific Challenge 2024
- > Carbon Neutrality
- > Doctorate

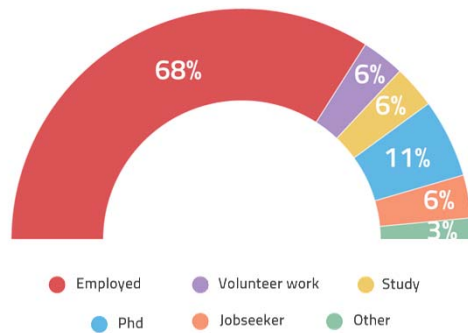


# Highly successful Centrale Nantes Graduates :

## Engineering programme



**87%**  
permanent contract



94% of Centrale Nantes engineering programme graduates find an employment within 3 months

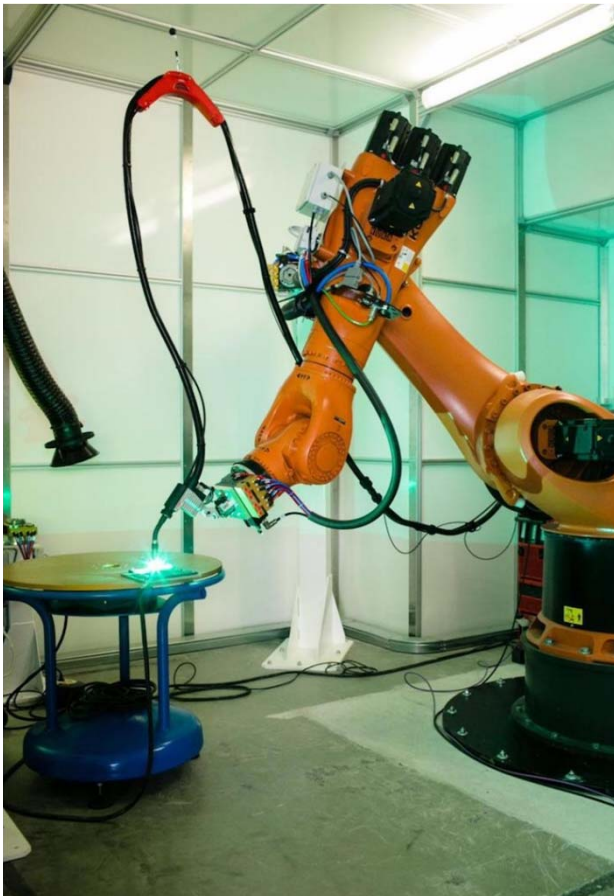
over 43% of engineering programme graduates have an international dimension to their post

66.9% of engineering programme graduates were employed before graduation

4.9 % run their own business

87.6 % of Centrale Nantes alumni see a positive impact of CN graduation on their career

## 6 Masters and 15 specialisations (*in english*)



### MECHANICAL ENGINEERING

- > Advanced Manufacturing
- > Computational Mechanics
- > Energetics and Propulsion
- > Advanced Composite Engineering and Science

and Erasmus Mundus Master:

- > Master of Science in Computational Mechanics



# 6 masters and 15 specialisations



## CONTROL AND ROBOTICS

- > Signal and Image Processing
- > Advanced Robotics
- > Embedded Real Time Systems
- > Control Systems

and Erasmus Mundus Master:

- > [EMARO+ European Master on Advanced Robotics](#)



# 6 masters and 15 specialisations



## MARINE TECHNOLOGY

- > Hydrodynamics for Ocean Engineering
- > Atlantic Master on Ship Operation & Naval Engineering

## & Erasmus Mundus Joint Master Degrees:

- > REM - Master in Renewable Energy in the Marine Environment
- > Emship - Advanced Ship Design





# 6 masters and 15 specialisations

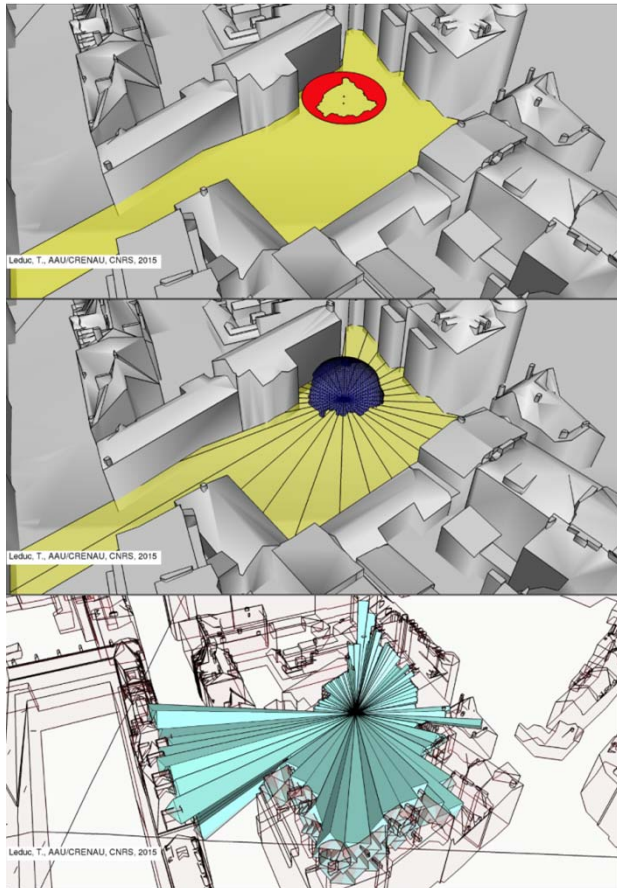


## CIVIL ENGINEERING

> Materials & Structures in their  
Environment



# 6 masters and 15 specialisations



## CITY & URBAN ENVIRONMENTS

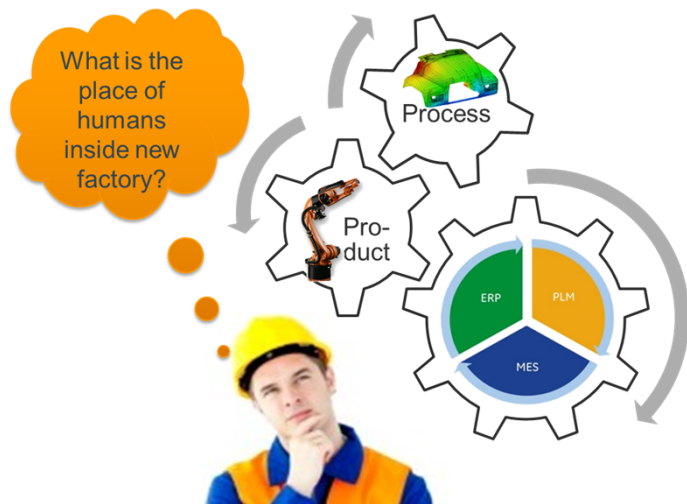
- > Atmosphere, Water and Environment
- > Architecture, Ambiance, Urbanity



# 6 masters and 15 specialisations

## INDUSTRIAL ENGINEERING

- > Agile Factory Management
- > Smart & Connected Enterprise



## 4 Erasmus Mundus Joint Master Degrees



### EMARO+: Advanced Robotics (Coordinator)

Warsaw University of Technology - Poland,  
University of Genova - Italy,  
Jaume I University – Spain



### EMShip Advanced Design: naval architecture

University of Liège – Belgium,  
University of Rostock – Germany, Zachodniopomorski Uniwersytet Technologiczny - Poland,  
University of Galati (UGAL) – Romania,  
University of Genoa – Italy



### Computational Mechanics Master + PhD

Universitat Politècnica de Catalunya - Spain,  
Swansea University - United Kingdom,  
Universität Stuttgart – Germany



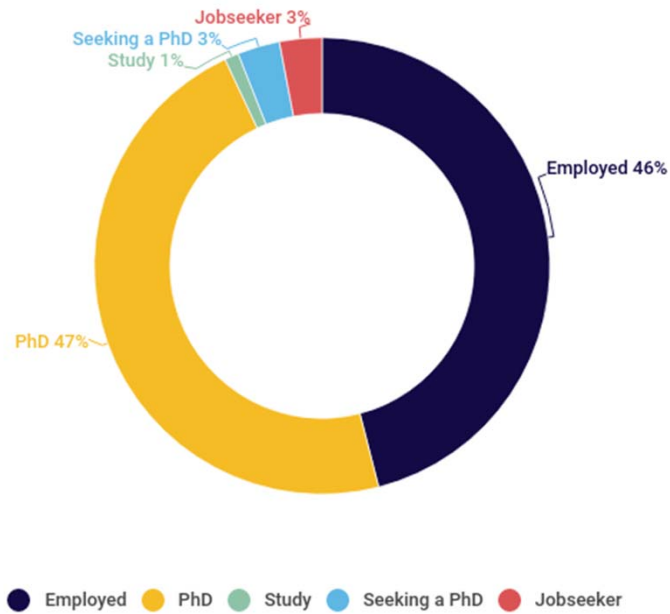
### REM: Renewable Energies in the Marine Environ

Universidad del Pais Vasco – Spain,  
Norwegian University of Science and Technology – Norway,  
University of Strathclyde - UK



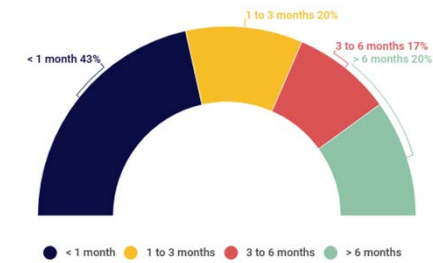
*Scholarships available covering tuition fees + insurance/travel, monthly allowance*

## Where are our Master graduates now?



Over 85% of Centrale Nantes Masters graduates find employment or a PhD within 6 months of graduation.

### Average time to secure employment



### Average time to find a PhD



Survey conducted in November 2017 of 2016 Master graduates. 80 respondents out of 172 surveyed

## Incoming organisation



### > VIP welcome for all international students

- > Airport / Train station Pick Up
- > Accommodation booking
- > Help with administration, Visa and Residence Permit, Bank, etc.
- > School visit
- > Welcome week
- > Introduction to the various student associations (80+):
  - Sports and other clubs ( Jazz, Chess, Theatre, Cinema, Dance, Sailing, Rugby, Football, Basketball, Martial Arts, etc)
  - International Student Association (ACCENTS)
  - Master Student Association (MSA)

Thank you for your attention

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## Follow us



[www.ec-nantes.fr](http://www.ec-nantes.fr)