

Faculty of Fundamental and Applied Sciences

Shaping the future

Courses | Research & Innovation | Campus life

Editorial

Right at the heart of a flourishing city, the Faculty of Fundamental and Applied Sciences in Nantes has numerous resources at its fingertips to meet the challenges of today and tomorrow.

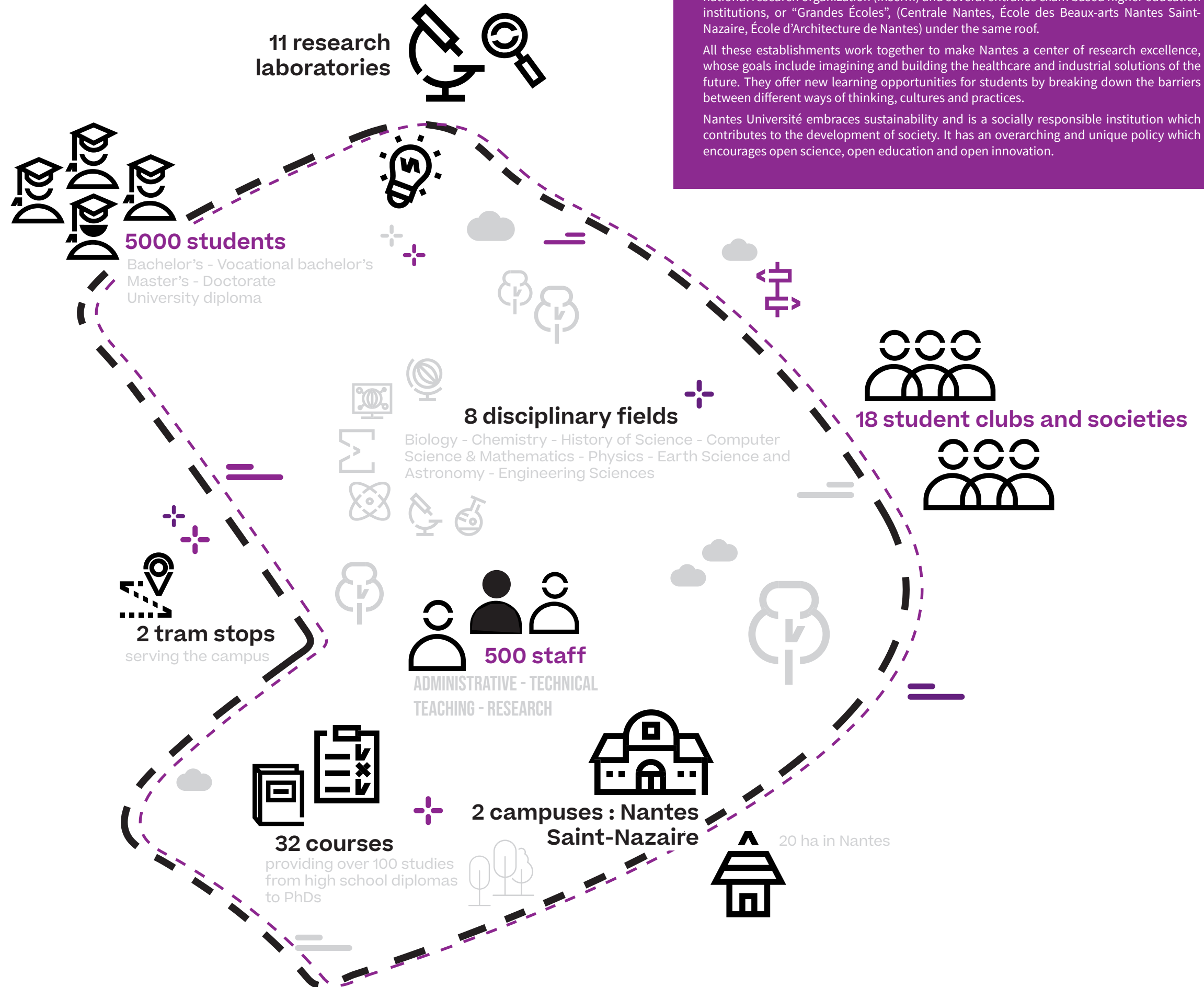
The ability to produce knowledge and innovate is key to staying ahead of the competition, and that's where the faculty steps in, thanks to the staff working in its laboratories equipped with cutting-edge facilities and technology.

Our catalog of courses always stays on a par with the latest scientific and technological developments. The numerous partnerships we have with firms and other institutions means our research and course programs attain the highest European and international levels.

We want our young graduates to be equipped with all the knowledge and skills needed for high-level scientific professions, in fields ranging from research and development, to production and teaching.



Chantal Gauthier
Dean of the Faculty of Fundamental and Applied Sciences



Created in January 2022, Nantes Université is publicly funded higher education and research institution.

This new institution is the first of its kind in France. It brings together a university, a university hospital (CHU of Nantes), a technology research institute (IRT Jules Verne), a national research organization (Inserm) and several entrance exam based higher education institutions, or "Grandes Écoles", (Centrale Nantes, École des Beaux-arts Nantes Saint-Nazaire, École d'Architecture de Nantes) under the same roof.

All these establishments work together to make Nantes a center of research excellence, whose goals include imagining and building the healthcare and industrial solutions of the future. They offer new learning opportunities for students by breaking down the barriers between different ways of thinking, cultures and practices.

Nantes Université embraces sustainability and is a socially responsible institution which contributes to the development of society. It has an overarching and unique policy which encourages open science, open education and open innovation.

Teaching

The Faculty of Fundamental and Applied Sciences of Nantes prepares its students for tomorrow's world of work. Teaching teams provide students with guidance throughout their study pathway to ensure success. The faculty offers a wide range of customizable courses in eight different disciplinary fields, from bachelor to doctoral degrees.

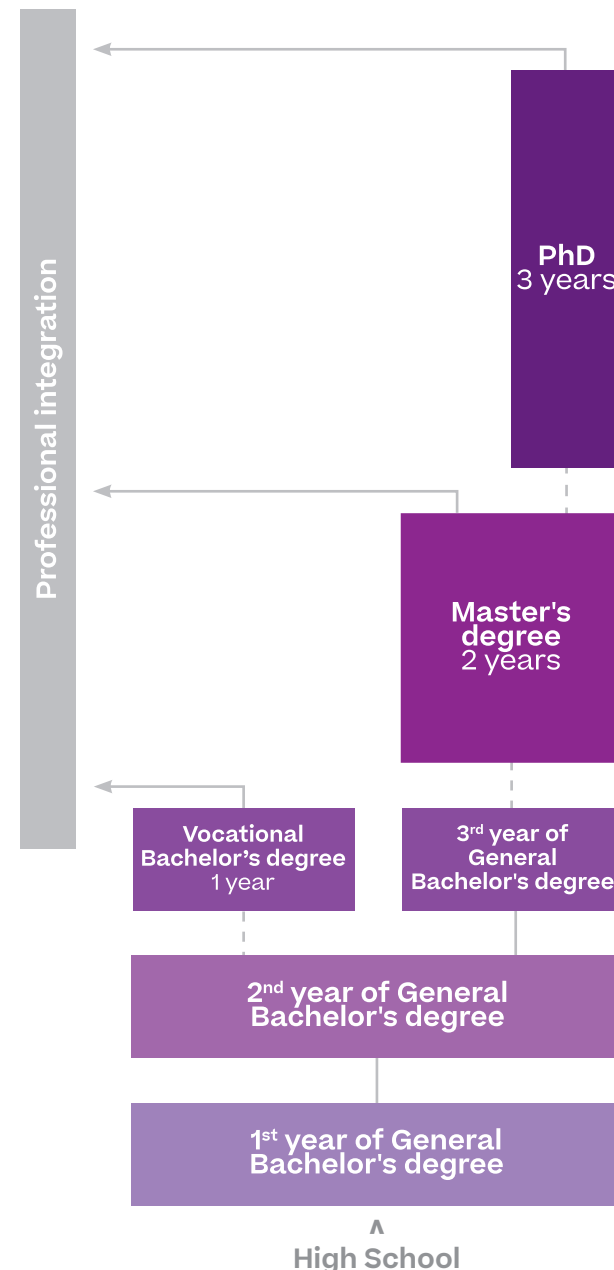
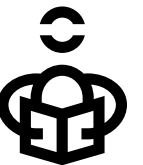
- Biology
- Chemistry
- History of Science
- Computer Science
- Mathematics
- Physics
- Earth Science and Astronomy
- Engineering Sciences



General bachelor's degrees that help students make the right choices for the future

9 The faculty offers 9 general bachelor's degree courses :

- CHEMISTRY
- COMPUTER SCIENCE
- MATHEMATICS
- MATHEMATICS AND COMPUTER SCIENCE APPLIED TO HUMAN AND SOCIAL SCIENCES
- PHYSICS
- PHYSICS-CHEMISTRY
- LIFE SCIENCES
- LIFE AND EARTH SCIENCES
- ENGINEERING SCIENCES



+4 great things
about our bachelor's degree programs

- + Continuous assessment mainly, throughout the first year.
- + Gradual career orientation throughout your program.
- + Innovative teaching methods (flipped teaching, project method teaching, etc.).
- + Teaching takes place in small groups (practical work and seminars).

Specialized or selective programmes



The **CMI Programmes** are progressive and demanding five-year engineering programmes (Bachelor's + Master's) preparing students for engineering jobs. They combine an excellent grounding in the chosen discipline(s), practical exercises and numerous modules that create bridges with the outside world.
CMI ICM - Mechanical Engineering Calculations | CMI INA - Applied Nuclear Engineering
CMI IS - Statistical Engineering | CMI OPT/IM - Computer Science and Mathematical Optimization

The **Reinforced Scientific Course (PSR)** is a university-based preparatory course for the "Engineering schools" open to bachelor students with a good academic level. The two-year course enables students to further develop multidisciplinary scientific knowledge and skills (mathematics, physics and chemistry). It opens the door to engineering schools and can also lead to a bachelor's degree followed by a master's degree, or to a CMI programme.

The **Health Access Course (Licence Accès Santé - LAS)** is a scientific bachelor's degree specializing in healthcare. It leads to entrance exam for medicine, midwifery, dentistry, pharmacy and physiotherapy. Students on one of our science bachelor's degrees with the healthcare specialization study both the science modules and the additional healthcare modules.

Certain selective options can also be taken as part of the Bachelor's Degree in Life Sciences, such as biology through the medium of English, **Advanced Biology Training (ABT)**, and the **Prep course for the Concours B exam (PECB)**, which prepares students for the entrance exam to veterinary school and/or agricultural engineering schools.

Vocational bachelor's degrees leading directly to the world of work

7 vocational bachelor's degrees can be taken as sandwich courses after two years of higher education.

BIOTECHNOLOGY IN HEALTH AND FOOD
WOOD AND WOODWORK
CHEMICAL AND NUCLEAR METROLOGY
GEOLOGY AND LAND USE PLANNING
CONSTRUCTION MANAGEMENT, BUILDING SITE MANAGEMENT AND SUSTAINABLE CONSTRUCTION
ENERGY PERFORMANCE, ENVIRONMENTAL ENGINEERING
RADIATION SAFETY AND THE ENVIRONMENT

These courses are designed with the world of work in mind: the insertion rate of these graduates is **97%***.



* Graduates of a vocational bachelor's degree in "science, technology, engineering studies" - 30-month survey, Dec. 2021.
** Graduates of a Master's degree in "science, technology, engineering studies" - 30-month survey, Dec. 2021.



Our University Diploma in Gemmology – an eye-catching course

For more than 30 years, the University Diploma (D.U.) in Gemmology has offered highly specific and internationally recognized teaching. An English version of the course has been in the catalog since 2017, to meet the international demands of gemstone specialists.

A wide range of master's degrees enables students to specialize and narrow down their career choices

Our master's are an opportunity to develop advanced skills, get a job in a cutting-edge technology sector or continue on to a doctoral degree.

17 different master's degrees courses which all lead to careers in engineering, project management, innovation and research.

BIOINFORMATICS
BIOLOGY-HEALTH
PLANT BIOLOGY
CHEMISTRY
ELECTRONICS, ELECTRICAL ENERGY, AUTOMATION
EPISTEMOLOGY, HISTORY OF SCIENCE & TECHNOLOGY
CIVIL ENGINEERING
ENVIRONMENTAL MANAGEMENT
COMPUTER SCIENCE
APPLIED MATHEMATICS
MECHANICS
COMPUTING METHODS APPLIED TO BUSINESS MANAGEMENT (MIAGE)
PURE AND APPLIED PHYSICS
RISK MANAGEMENT AND THE ENVIRONMENT
MATERIALS SCIENCE
EARTH SCIENCES AND ASTRONOMY, THE ENVIRONMENT
MEDICINAL SCIENCES AND HEALTH PRODUCTS
MARINE TECHNOLOGY

The professional integration rate of our Master's graduates is **96%!****

Graduate Programmes : Master-Doctorate curriculum

The Faculty also offers, in coordination with other faculties of Nantes Université, 8 Graduate Programmes (GP) which offer an integrated Master-Doctorate program, characterized by teaching content strongly linked to research on the themes of the university's internationally recognized laboratories.

Guiding students towards success

Since 2014, the faculty has taken an innovative student-centered approach to its courses. Several initiatives have been set up to support students throughout their studies, such as student-to-student mentoring, academic tutors and orientation days.

For students whose skills are not entirely in line with those expected by our bachelor's degrees, we offer two accompanied courses in 1 or 2 years. Designed to promote success, they offer adapted courses and more personalized support.

The Faculty encourages innovative teaching practices (flipped teaching, hybrid teaching, project method teaching, serious games) and the teaching equipment and tools are geared towards these innovative practices (mobile language labs, collaborative tools for group work, third-spaces for learning, Fablabs, real-time translation and note-taking in the student's native language...).



Sandwich courses - opening doors to the world of work

All our vocational bachelor's degrees can include a sandwich course (7 programs), and 12 of our master's programs also offer this option during the first or second year of the master's degree. One of our options (MIAGE) for the third year of a general degree is also available as a sandwich course.

Acquiring both academic skills at university and professional skills in a working environment, it's possible at the Faculty of Fundamental and Applied Science !

CLIP Sciences - a unit helping students break into the labor market

Liaising between the world of work and the Faculty, CLIP Sciences offers several services to help students find their place on the labor market:

- Vocation-oriented training modules
- Preparation workshops
- Publication of job and internship offers
- Personalized guidance
- Job market watch

The team includes human resources experts and recruitment coaches.



Widen your international horizons through your studies

The Faculty encourages its students to take part into an exchange program in one of our many partner universities across the world, and to internationalize their curriculum by doing an internship abroad !

Our Faculty is also involved in 2 Erasmus Mundus Joint Master's degrees ; in Aquaculture, Environnement and Society (ACES+ STAR) and in Panetary Geosciences (GeoPlaNet).

Research

Thanks to its internationally renowned laboratories, the Faculty of Fundamental and Applied Sciences is proud to be one of Nantes' major research hubs.

Our goal is to be a standard-bearer for pure and applied research excellence, promote and champion innovations that will shape the world of tomorrow, and encourage interdisciplinarity. We also work constantly to strengthen the link between teaching and research.



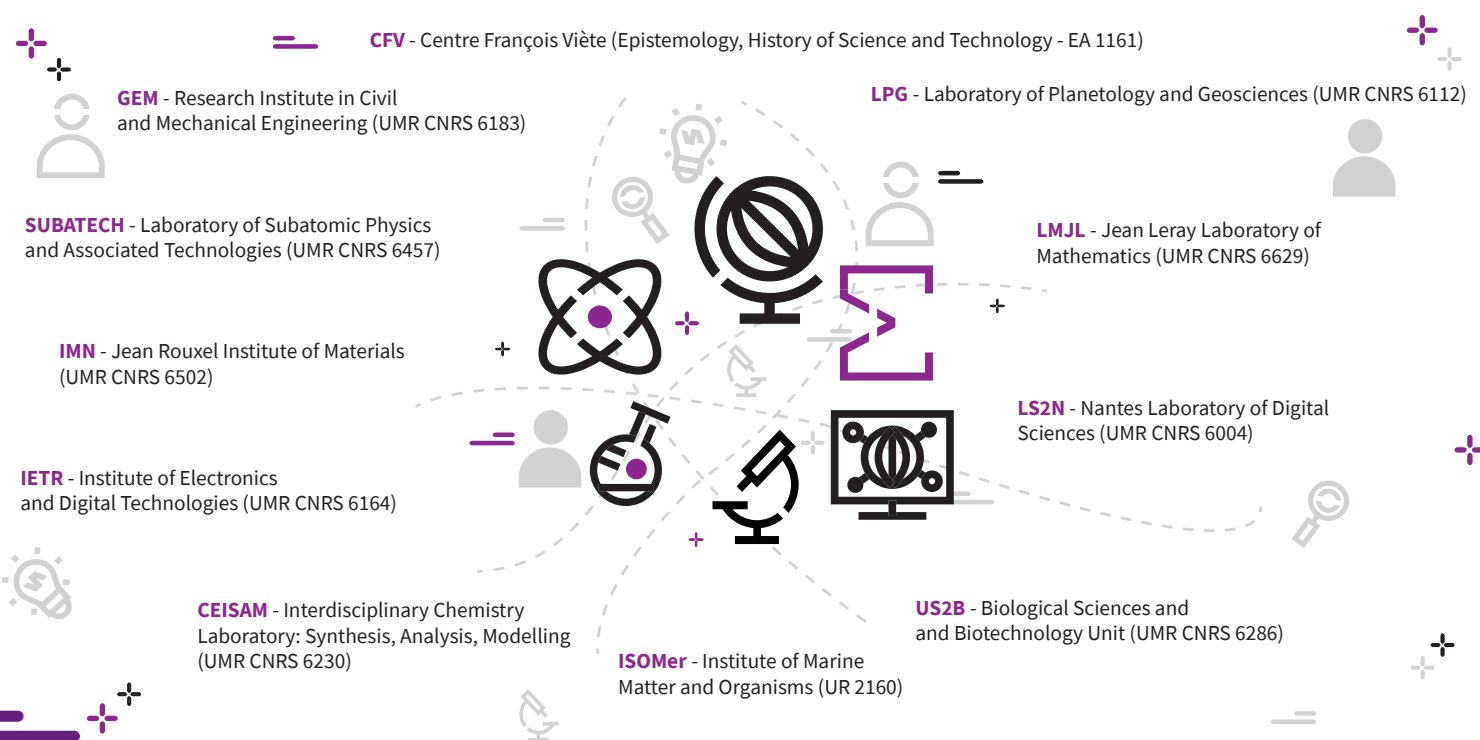
250 doctoral students annually

Every year, the faculty welcomes about 250 doctoral students carrying out research in its laboratories or sometimes in firms. After completing their thesis, these young researchers become Doctors.

The doctoral schools linked to the faculty:

- Biology-Health (BS)
- Mathematics and Information & Communication Sciences & Technologies (MaSTIC)
- Matter, Molecules, Materials and Geosciences (3MG)
- Plants, Animals, Food, Sea, Environment (VAAME)
- Engineering Sciences (SPI)
- Societies, Times, Territories (STT)

Research Laboratories

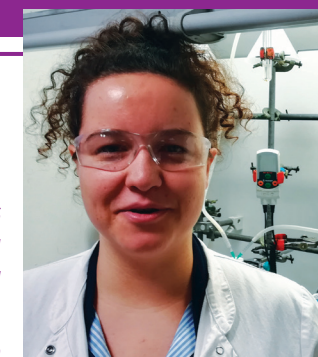


I decided to choose research...

... because it gives you the chance to discover lots of different professions, which appeals to my inquisitive mind. Research and sciences are always evolving alongside the development of new technologies: the career of a researcher is peppered with new knowledge and experiences, something which I find very rewarding.

In chemistry, nothing can be taken for granted. You constantly need to search for new methods, understand why chemical reactions occur or why they don't... It allows me to never be bored, to live days that are not the same: it's exciting.

That's why I decided to a chemistry PhD. Later I hope to work in a medicinal chemistry research laboratory, so that one day I might help discover a new medical drug!



Krystal Gaillard
Doctoral student 2018-2021
at the CEISAM laboratory

Strongly committed to spreading the word about science and technology

Engaging everyone in the world of science and technology is part of the Faculty's DNA: explaining scientific approaches, passing on researcher knowledge to a non-scientific audience, encouraging knowledge-based debates, etc.

Our staff (research lecturers, researchers, research engineers, etc.) take part in numerous science awareness-raising events, such as "La Fête de la Science" science festival, "Le Passeport Recherche", to bring research into high schools, and "La Nuit Blanche des Chercheurs", an evening event to meet researchers and find out interesting facts. The faculty and several of its partners also organize the regional editions of the French "Faites de la Science" and "C.Génial Collèges" competitions for schools, aimed at giving young people a taste for science, and "Les Industri'elles" event, a role-playing game to help high school girls discover industry.

Numerous science-related events are also organized on the campus throughout the academic year (science-based breakfast events, off-the-wall live events, conferences on research current affairs, informal meetings to discuss PhD theses, etc.). Last but not least, in 2021, the Faculty launched its "Conversa'Sciences" podcast to bring science to your ears!

The faculty as an incubator

Our Faculty campus is home to cutting-edge start-ups created as a result of the research carried out in our laboratories.

- **ATHENA** - Waste recovery using a biological process to produce decarbonized hydrogen
- **GRAFTYS DISCOVERY** - Development of new synthetic bone graft substitutes
- **VR2PLANETS** - Image processing and immersive visualization of scientific data



Campus

Our community made up of staff and students benefits from a friendly-sized, leafy and lively campus right near the center of Nantes. It is in a beautiful and relaxing setting offering the best possible conditions for working and studying.

A second campus in Saint Nazaire

The Civil Engineering Department at Nantes Université is based in Saint Nazaire. This department's programs are taught on the Gavy-Oceanis campus from the third year of bachelor's degrees onwards. The campus is a really friendly place too and is less than 70 km from Nantes.

A host of clubs and societies

The Faculty currently has 18 active student clubs and societies on site. They contribute to campus and student life by offering numerous activities throughout the academic year:

- Organization of festive, scientific, cultural and academic events (conferences, graduation ceremonies, etc.)
- Participation in competitions (iGEM, robotics, etc.)
- Publication of a student newspaper, "Le Cafard Déchaîné"
- Distribution of local and organic food baskets
- Cultural or nature excursions
- And much more!

Easy to get to



Several bus routes and the tramway serve the campus, which is only a ten-minute ride from the center of Nantes. The campus also has a bike-sharing station.

The Lombarderie campus is not far from the Tertre campus and the Student Union, which is the social and cultural hub of Nantes Université.

The Faculty is in a district that is geared towards students: it has several student residences, local shops and services, leisure facilities, etc.

Everything in one place

The Faculty of Fundamental and Applied Sciences offers students a great place to study: the teaching facilities and laboratories are close to each other, you can choose one of several places to eat (a university dining hall, two cafeterias, food trucks) and it is also home to the university library for Science, Technology and Sports Studies.

A relaxing environment

The Faculty is on a green and leafy campus (lawns, heritage trees, community gardens, woodland, etc.) spread over 20 hectares along the river Erdre.

Over the last few years, it has invested in outdoor facilities (benches, bike shelters, picnic and games tables, etc.) and continues to improve its indoor facilities for students too (study cubicles, sofas and chairs, tables for eating or working, whiteboards, etc.).

Go-to people

We know how important student-led societies and clubs are to campus life. That's why the faculty has decided to provide support by appointing a lecturer and a student as points of contact for such initiatives and student life in general.



Visit the campus as if you were really there!

Embark on a 360 virtual tour to discover the Lombarderie campus:
[univ-nantes.fr/sciences/visite virtuelle](http://univ-nantes.fr/sciences/visite_virtuelle)

Or scan this QR Code!





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