



International Master's Degree in ELECTRICAL ENGINEERING

The international Master's degree in Electrical Engineering is the second year specialty of Nantes Université's Master's degree in Electronics, Electrical Energy and Automatic. Through this programme students will acquire excellent skills in the management of electrical energy. Based on electrical engineering courses, students will be able to design, develop and improve complex electrical systems (innovative machine, advanced power electronics, smart grid and multi-source systems), and to prepare for a PhD.

The Electrical Energy Master's programme covers various topics related to electrical engineering : advanced modeling of electromagnetic devices, control of electrical systems, management of electrical energy. Different areas of application can be targeted including energy conversion, transportation (boats, aircrafts, automotive...), sustainable development (wind and marine energy and their integration in the network) and multi-source systems.

Syllabus

Third semester (30 ECTS)

(i.e. first semester of this second year of master)

- Electrical energy conversion
- Advanced electromagnetics
- Numerical methods
- Signal processing and control
- New technologies and multisource systems
- Advanced numerical modeling
- Control of electrical systems

Fourth semester (30 ECTS)

(i.e second semester of this second year of master)

- 1 Teaching Unit + internship (5 months)
- Scientific innovation: 25 h

Hosting research labs

IREENA www.ireena.univ-nantes.fr

(Institute of Research in Electrical Energy of Nantes Atlantique)

LS2N www.ls2n.fr

(Laboratory of Digital Science of Nantes)

IETR - CNRS www.ietr.fr

(Institute of Electronics and Digital Technologies)

SATIE <https://satie.ens-paris-saclay.fr/en>

(Institut d'Alembert)



Skills

- > design innovative solutions for the electrical integration of renewable energies
- > integrate electrical efficiency and eco-conception rules during the design of electrical systems
- > model a multiphysics system including sensing electrical systems and control process
- > design optimal electrical energy management systems

Career Opportunities

Business sectors

- > Engineer in industry or research
- > Project engineer
- > Production or design engineer
- > R&D engineer
- > Higher education and research, particularly through doctoral training

Academic calendar

Courses start in late September.

POLYTECH NANTES

As the graduate school of engineering of Nantes Université, Polytech Nantes benefits from the scientific and educational environment of a university.

Polytech Nantes is the founding member of the Polytech group, a national network of 16 graduate engineering schools in France.

20%

foreign students

+70

Partner schools

Admission

The Master's Degree is a two-year degree. At Polytech Nantes, only the second year is accessible, so applicants should hold a degree which is at least a 4-year degree in higher education (i.e. a 3-year Bachelor is not acceptable).

Applicants should be able to give evidence (from transcripts of their degrees) and show good knowledge in the following fields:

- > electrical engineering
- > applied mathematics and physics
- > command and signal processing



Requirements

- > **Transcripts of records, GPA**
- > **Ranking in the promotion (position of student/number of students)**
- > **87 TOEFL / 785 TOEIC / 5.0 IELTS / B2**

How to apply ?

> For students **coming from a Polytech Nantes partner university**, please contact your international coordinator who will deal with your enrolment.

> For students coming from a country that is **part of the Campus France procedure**, please enrol with Campus France campusfrance.org/en/application-etudes-en-france-procedure

> For students coming from a country that is **not part of the Campus France procedure**, please Complete the application form on our website (univ-nantes.fr/polytech/internationalmasters) and send us the following documents:

- a detailed CV in English (including the precise content of your studies, which topics were studied each year, obtained grades, international English test score, reports you may have written during your studies)
- a cover letter
- a complete transcript in English of all previous years of study at the University including your GPA and official ranking
- a copy of your passport

Cost

The price includes the education and the training costs, as well as the French courses for foreigners, some cultural outings and the student social security*.

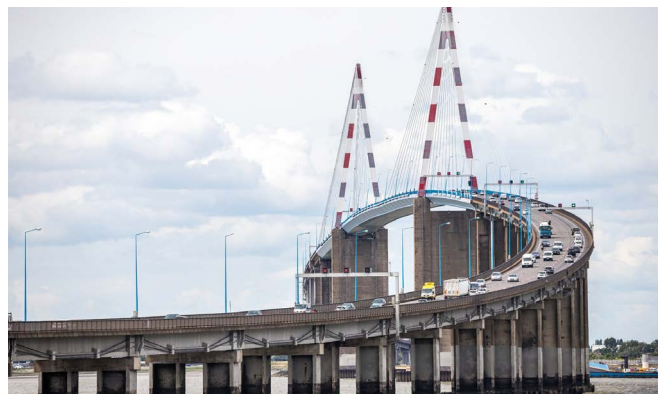
**It is included if you are less than 28 years old. If not, you will have to pay your own social security.*

More information :

<https://polytech.univ-nantes.fr/en/financial-and-practical-information>

Accommodation

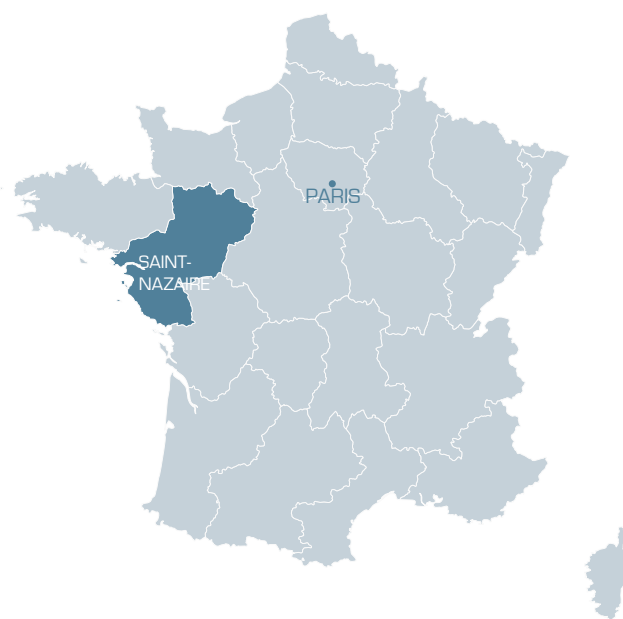
The rent for students' accommodations may vary between €350 and €450 per month (allow for a deposit : usually 1 month rent). The housing market is saturated in September. It is highly recommended to seek accommodation in June or July. Expect to pay for insurance for any accommodation, as well as the housing tax for accommodation in town.



Location

The programme is held in Saint-Nazaire. The Heinlex Campus is situated amongst the aeronautics and shipbuilding industries, benefiting from the exceptional Guérande Peninsula atmosphere and a number of seaside resorts.

Saint-Nazaire (71,500 inhab.) is a coastal town of Western-France. The Heinlex campus hosts over 3000 students in various engineering courses (biotechnology, process, structural and electrical), a university restaurants and a university library.



Language

The programme is entirely taught in English, thus, a good command of the English language is required (B2 score as defined by the Council of Europe). Please, note that French students also apply.

Contact

master-ee@univ-nantes.fr

polytech.univ-nantes.fr

