UNIVERSITÉ DE NANTES

POLYTECH NANTES
Graduate school of engineering of the university of Nantes

Master in Electronic Systems and Electrical Engineering

Keywords

- Signal processing
- High frequencies
- Remote sensing
- Electromagnetics
- Electrical machines
- Power electronics

Courses aims

Through this research oriented master, students will acquire skills in electronics systems or electrical systems, which are used for controlling, monitoring and interfacing functions and for information transformation and processing. Students will be able to design, develop and improve electronics or electrical systems, and prepare a PhD.

Program

■ Semester 1
- Modelling techniques Components for electronic systems
- Signal processing
- Electromagnetic
- Electro-mechanic conversion

Electronic systems Option:
- two 15-hour courses based on students and laboratory's research interests (Electronic systems overview, Radar systems, or Communications systems)
- two 30-hour courses refining their interest (Antenna techniques and array signal processing, HF and optical devices and functions, Propagation, diffraction and electromagnetic compatibility, SoC technology and VLSI technology or Architecture and CAD of circuits and systems)

Electrical systems option
- Modeling of electrical machines
- Modeling of electromagnetic systems
- Industrial electrothermics
- Components and tools for digital control
- Control methodology

■ Semester 2: 5-month research period in a university lab or in a company.

Skills and career opportunities

By focusing on technological constraints due to components' limits, this Master covers research topics related to design and manufacturing of communication and detection systems, and design and electronic management of machines.Those research calls for fundamental concepts of solid-state physics, electromagnetism and communications theory, conversion of electromechanical and thermoelectric energy, conditioning of electrical energy, and methods of modeling and simulation.

■ Electronic systems option: thanks to the increasing miniaturization of components and electronic systems, university research and industrial laboratories can design, manufacture and assess systems by focusing on public applications as personal communication networks, radiotelephony, radiolocation and monitoring.

■ Electrical engineering option: possible outlets are numerous in companies designing and manufacturing electrical equipment (static inverters, revolving machines, variable speed transmissions, thermoelectric equipment,…) or users (steel industry, metallurgy, paper mill, food processing, chemical engineering,…) as well as in complex units (electric traction, automobile, aeronautical, naval construction…).

Hosting research lab

The *Institut d'électronique et de télécommunications de Rennes* (IETR) brings together researchers in the electronics and telecommunications sectors from CNRS (INSIS),University of Rennes1, INSA Rennes, Supélec Rennes campus and University of Nantes (Polytech Nantes).

The IETR has a large number of technical platforms used to carry out life-sized experiments and it undertakes a large amount of scientific research both nationally and internationally. It also undertakes a significant number of contractual work for and with industrial companies.

Admission

Admission requirements

To enrol in this program, students should earn a degree or diploma in a scientific or technical field equivalent to the first year of a Master (240 ECTS).

The foreign university will recommend students for the year in France. A committee of French Professors select the students qualified for the program, after examination of the student's application files and interview.

Language requirements

A reasonnable knowledge (oral and written) of English is required.
An introduction to French language and culture is provided

Costs

- Tuition fees: €6,500 (medical insurance included), to be paid in Euros
- Housing: €2,500
- Food and incidentals: €2,000
- Other expenses: €1000

Total: €12,000.

Scholarships and funding

During the master program, there will be a 5-month internship, in a research laboratory or a company. Each student will be paid around €420 per month and receive at least €2000 for this internship.

For information regarding grants and scholarships, we recommend you to contact the French Embassy in your country, or your local Campus France agency.

According to your country of residence and your particular situation, different possibilities of financing your studies in France may be available: government grants, funding granted by international organizations and NGOs, private fellowships...

Practical information

Location

Nantes (600,000 inhab.) is located close to the Atlantic Ocean and is regularly rated as one of the most pleasant French cities to live in. Thanks to its beautiful parks, efficient public transport and other policies for substainable development, Nantes has been awarded the statut of European Green Capital.

Courses are located in Nantes, on La Chantrerie Campus which hosts 5 Grandes Ecoles, with over 2,000 students, two university restaurants, a technology library, as well as about 30 businesses at Atlanpole that deal in advanced technology.

Travelling to Nantes from Paris, either from Paris CDG Airport or from city center, is easy and direct with the fast train (TGV).

Lodging

Accommodation is available on the university campus, but most students seek accommodation in town. Rent may vary between €200 and €300 per month (allow for a deposit: usually 1 month rent). Expect to pay for insurance for any accommodation, as well as the housing tax for accommodation in town.

It is highly recommended to seek accommodation in June or July as housing market is saturated by September.

Academic calendar

- Duration of studies: 1 year
- Courses start in September and end in June

Details and contacts

- Polytech Nantes

Site de la Chantrerie
rue Christian Pauc - CS 50609
44306 NANTES cedex 3 - France

Polytech Nantes is the Graduate School of Engineering of the University of Nantes. it is accredited by the Commission des Titres d'Ingénieur (CTI), the French institution which awards engineering degrees.

- Information

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