International Program

MASTER'S DEGREE in Nanoscale Engineering

Master accredited by the French Ministry of Higher Education and Research with possibilities to continue for a PhD.

3 **academic centres** in and around Lyon

5 **research laboratories** of the Université de Lyon

4 **semester courses,** taught in English

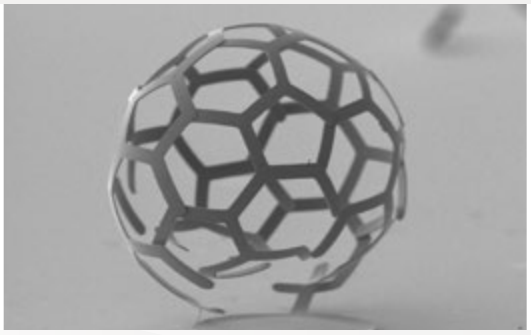
9 **months** of internships and lab projects

164 **graduates** since 2011
56% of them are International Students

Initial and continuous training

Objectives

- Training in Nanotechnology for future managers, engineers and research scientists, to master recent developments in nanotechnology and biology.
- Graduates will be ready to manage multidisciplinary international projects on the interface of these various disciplines.


Main opportunities

- Industrial : Electronics, Materials (Development and Applications), Biotechnology (Analysis and Pharmacology), Tools and Processes (Characterization and Processes).
- PhDs and Scientific careers : most NSE graduates go on with PhD studies. High demand for Master's level teachers in NSE for young scientists in the early stages of training.

Scientific fields

Biology-Biochemistry, Chemistry, Electricity-Electronics Control Engineering, Materials Science, Physics, Engineering Science.

Prerequisites

- Bachelor of Science. (Preferably in Physics, Chemistry, Bioengineering, Electronics, Materials Science, Mechanical Engineering).
- Certified B1 level in English (CEFRL).

UNIVERSITÉ DE LYON

ÉCOLE CENTRALELYON

International Program

Key points of the NSE program

An international, multicultural program for French and international students.

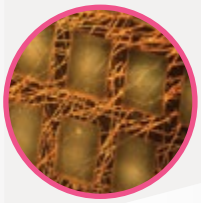
- A major focus on developing scientific communication skills in English, thanks to high-level scientific teaching given in English. Opportunities for internships and employment abroad.
- Five laboratories involved in the Lyon area : the Lyon Institute of Nanotechnology (INL), the Institute of Light and Matter (ILM), Materials : Science and Engineering (MATEIS), the Laboratory of Multimaterials and Interfaces (LMI), and the Institute of Analytical Sciences (ISA).
- Regular interractions with internationally renowned research groups and a wide range of contacts in industry and universities abroad.
- The Master's degree is awarded by Université de Lyon. Training courses and projects throughout the academic year for high-level scientific and managerial careers in research laboratories and industry.

Master's Degree in Nanoscale Engineering

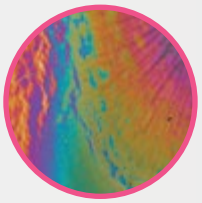
S 1	Micro and Nano Fabrication	Characterisation Tools for Nanostructures	Surface Physics	Fundamental Basis of Science Biomolecules, Cells and Biomimetic Systems Quantum Engineering Physics of Semiconductors (Part 1) Courses in other Masters	Transcultural Project	Language (French for foreign students or English for French students)
S 2	Nanomechanics Drug Delivery Systems Introduction to System Design		Project Management Workshop	Lab Project 1	Language (French for foreign students or English for French students)	Lab Project 2
S 3	Micro, Nano-Photonics and Applications Surface Analysis Techniques Physics of Semiconductors (Part 2) Functional Materials Biosensors and Biochips Courses in other Masters		Nanoelectronics and Information Technology Nanomagnetism and Spintronics Computer Modelling of Nanoscale Systems Tissue and Cell Engineering Micro-and Nano-fluidics Courses in other Masters	Intellectual Property & Ethics		
S 4	Internship + Thesis					

Mandatory courses — Professionalization courses — Transcultural project & language — Internships and lab projects

Major ECTS (3 courses among the list each semester) — Minor courses (S2 : 2 courses among the list / S3 : 3 courses among the list)





Wide-range of skills

- Working effectively in the field of Nanostructures, with solid knowledge of Nanoscience and Nanotechnology : Characterization, Modelling, Engineering.
- Creating.
- A grasp of complex problems.
- Designing, setting up and managing cross-disciplinary and international projects.
- Taking on board socioeconomic factors and market requirements.

Contacts

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More information : http://master-nano.universite-lyon.fr