

ADMINISTRATIVE STAFF

Faculty of science and Technology

Electronics, electrical energy, automatic Department

- University of Lille - Campus cité scientifique
- Pedagogical secretariat
Lisa POUPART
lisa.poupart@univ-lille.fr
+33 (0)3 20 33 60 40
For more information: <http://master-mrt.univ-lille1.fr>

CONTACT CONTINUING EDUCATION & WORK-STUDY

- fst-fca@univ-lille.fr
Céline DESCHAMPS
Apprenticeship contract
+33 (0)3 62 26 82 94

ADMISSION CONDITIONS

Find all the useful information in the training catalog of the University of Lille: <https://www.univ-lille.fr/formations>

Master's 1

Recommended Bachelor's degree in: Electronics, Electrical Energy, Automation (EEA), Engineering Sciences with EEA profile, or Physics

Capacity of reception: 16 slots

Recruitment calendar: Opening from 04/05/2022 to 13/06/2022

Admission publication: 01/07/2022

Selection process: application + interview

Application criteria for the jury: A detailed file of the curriculum followed by the candidate allowing to appreciate in particular the objectives and competences of the previous training - recommended prerequisites: «Electronic components and circuits», «electronic components and circuits», «Semiconductor physics», «Wave theory», «Propagation», «Signal processing», «Fundamentals of electronic theory», «Basics of information theory», «Digital transmissions».

Submit your application on the platform <https://ecandidat.univ-lille.fr>

Master's 2

Find out more about the different ways of accessing the Master's 2 program by consulting the training catalog of the University of Lille.

Submit your application on the platform <https://ecandidat.univ-lille.fr>

COORDINATORS AND DIRECTORS

Head of the Master
Davy GAILLOT
davy.gaillot@univ-lille.fr
+33 (0)3 20 43 47 52

Head of the Master 1
Emiliano PALLECCHI
emiliano.pallecchi@univ-lille.fr

Head of the Master 2
Sylvain BOLLAERT
sylvain.bollaert@univ-lille.fr
+33 (0)3 20 19 78 58

STUDY ARRANGEMENTS

In order to offer the best success conditions to incoming students, the University of Lille has set up various measures that allow students to start and continue their studies in the best possible way, depending on their situation: students with disabilities, high-level athletes and artists, civic service, students in exile, etc. More information on <https://www.univ-lille.fr/etudes/amenagements-des-etudes/>



GRADUATE PROGRAM
'INFORMATION AND
KNOWLEDGE SOCIETY'

Master

Master 1 - Master 2

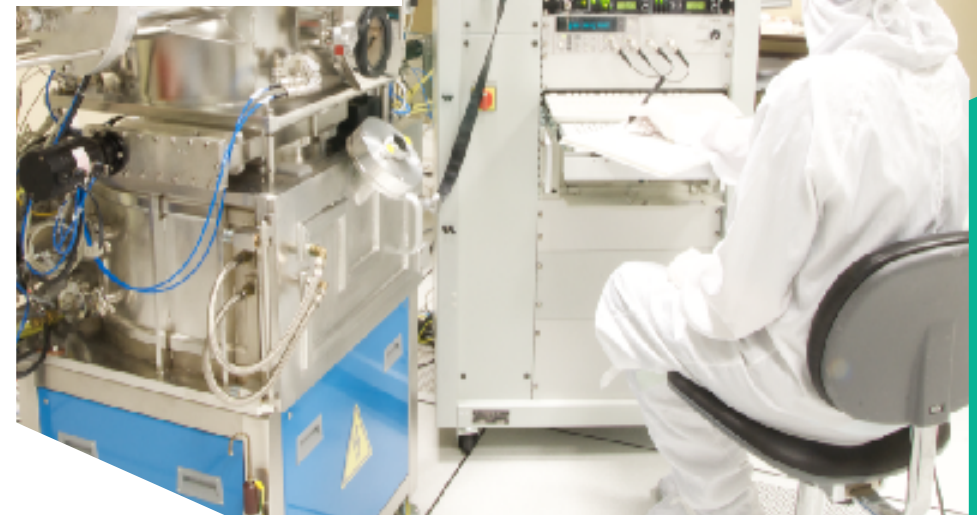
Mention

Nanosciences and
Nanotechnologies

E - TECH
EMERGENT
TECHNOLOGIES

formation
accessible en
alternance

Accessible in: initial training,
continuing education, apprenticeship
contract



PRESENTATION OF THE MASTER'S PROGRAM

The Emergent TEChnologies (ETECH) specialty of the Nanosciences and Nanotechnologies (NN) Master's degree aims to train highly skilled technical and scientific engineers through and for research. ETECH engineers can hold leader positions in the R&D laboratories of large groups in microelectronics or SMEs as well as academic research laboratories. The training focuses on technological innovation to meet the current and future needs in many high technological areas (5G, 6G telecommunications, health, sustainable development, Energy, transport, etc.). The NN Master's program proposes to bring scientific and professional skills to meet these future challenges with a strong purpose in high-technology startup launching as well as international careers.

An example of the evolution in the field of microelectronics is the development of 5G communication networks. These future networks will require the development of ultra-high speed wireless communications systems, but not only. Future needs will lead to a diversification of electronic systems. For example, the autonomous car connected to networks will require an increase in information flows, less energy-consuming processing of this information using artificial intelligence (software but also hardware with neuromorphic circuits), new sensors and actuators, micro-sources of energy...

This 2-year training (120 ECTS) is based on one of the biggest laboratories of the University of Lille, the Institute of Electronics, Microelectronics and Nanotechnology (IEMN, <https://www.iemn.fr>). With more than 50 years of experience in microwave and more than 30 years in nanotechnologies, it is an important support for training, because it has several highly equipped platforms (1600m2 clean room, characterization center, etc.). The main training axis of master NN are inspired by the advanced research flagships of IEMN Smart Energy, IOT make sens, Telecom UHD, Neuromorphic technologies. As the thematic of research & development are strongly international, it is therefore important to master English, which is why courses are given in English.

THIS MASTER'S DEGREE PROGRAMME IS A MEMBER OF THE GRADUATE PROGRAMME 'INFORMATION AND KNOWLEDGE SOCIETY'

A research-driven and interdisciplinary training in a competitive and innovative scientific environment offering research internships, international mobility grants, and professional networking for successful career planning. Graduate Programme students can actively interact with PhDs during thematic events to prepare their careers and to tackle the scientific and technological challenges of our time.

Key figures

8 MSc, 2 Graduate Schools, 12 Laboratories, 55 PhDs/year

Scholarships

3 different scholarships are awarded by the Graduate Programme « Science for a Changing Planet » to support students' studies (3500€/year), facilitate settling down in Lille (3500€), and foster outgoing international mobility (up to 3000€).

deadline: 15th March 2022 (First call)

deadline: 20th June 2022 (Second call)

More information about eligibility, criteria, and application here: <https://international.univ-lille.fr/graduate-programmes/science-for-a-changing-planet/bourses-etudes-mobilite-these/>



STRENGTHS OF THE PROGRAM

Rely on the expertise of an application-oriented laboratory in partnership with major players in the field of microelectronics and startups in the Hauts-de-France region. Training led by a dynamic teaching team with recognized expertise and an active pedagogy: supervised or independent projects using professional tools, internships in companies, and seminars led by high-level professionals. 25% of the program is done through practical work.

Accessible with study-work students (1 week in a company and 1 week in the training center) in the form of an apprenticeship contract for M1-M2 or M2 and a professionalization contract for M2.



STRUCTURE OF THE PROGRAM

The master's program is organized in 4 semesters of 30 ECTS.

The first semester shares a common core with the Networks and Telecommunications Master's degree. An important direction of future technologies is the communication of information. The program belongs to the I-SITE ULNE IKS international program and is in English. It is open to international outgoing mobility and scholarships. The master's degree has a teaching agreement with the Ecole Centrale de Lille and with the Institut Supérieur de l'Electronique et du Numérique (ISEN). Part of the teaching is provided by the Ecole Centrale de Lille. The program is offered in double degree with the Georgia Institute of Technology (USA).

JOB PLACEMENT RATE & FURTHER STUDIES

96% job placement rate (OFIP)

Targeted positions:

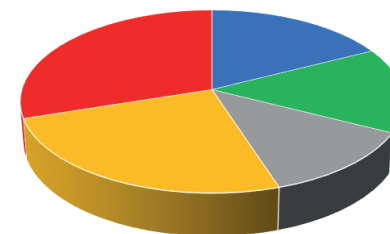
Design engineer in connected objects, Engineer in cleanroom processes, wireless communicating sensors, electronic circuits, RF/Microwave, RF/Microwave test, project manager, consulting engineer, Research & Development, researcher etc.

Major industrial groups or SMEs or startups that recruit our expert engineers: Thales, Freescale, STmicroelectronic, NXP, OMMIC, UMS, Alstom, AMD, CEA, MC2, Huawei, SOITEC, EPIGAN, etc. and regional startups (Zymoptic, Vmicro, Wavely, Besttic, Menapic, etc.)

Doctoral studies: At IEMN, doctoral studies with industrial partners (CIFRE or other contracts), numerous PhD grants (30 to 40 per year), or other academic laboratories (e.g. CEA, IRCICA-CNRS, IFSTTAR, etc.) or private laboratories (e.g. Thales, STmicroelectronics, MC2, etc.)

TARGETED SKILLS

The Nanosciences and Nanotechnologies specialization is structured in blocks of skills and knowledge defining the core of their expertise in the sector of technologies for electronic systems.



- Appropriate the novel and innovative technologies (21ECTS)
- Master the tools for signal processing, modeling and equipment driving (18ECTS)
- Master the multiphysics and integration of devices (15ECTS)
- Design communicating objects (30 ECTS)
- Manage personal, technical and scientific projects (36ECTS)



For more information on the national diplomas offered by the Faculty of science and technology of the University of Lille, consult the training catalog:

www.univ-lille.fr/formations.html