



GRADUATE PROGRAM
'INFORMATION AND
KNOWLEDGE SOCIETY'

Master

Master 1 - Master 2

Mention

Biotechnologies

LIFE SCIENCES AND TECHNOLOGIES



Accessible in : initial training,
continuing education, apprenticeship



PRESENTATION-TRAINING OBJECTIVES

By focusing on innovative and breakthrough biomedical technologies for real-time diagnosis, prognosis and precision medicine, the program for this master's degree responds to the important training challenges that accompany the unprecedented development of engineering for health.

Through a highly interdisciplinary training program based on the observation, handling and quantification of living systems in biology and health, this master aims to:

- Provide extensive knowledge, both theoretical and practical, in the field of life sciences, biophotonics, systems biology and microsystems.
- Train in advanced technologies during academic training but also during internships thanks to research platforms and laboratories.

The training is:

- Organized around interdisciplinary research projects. These projects combine personal work and team work made up of students from different backgrounds (physicists, biologists, chemists, mathematicians, computer scientists, electrical engineering).
- Led by highly qualified researchers, clinicians and experts in all the disciplines mentioned above and from universities, research institutes, hospitals and companies.

TARGETED SKILLS

At the end of this 2 years program, graduates have acquired scientific and organizational knowledge and in a multidisciplinary environment are able to:

- Deal with research and development issues of new technologies with a deep understanding of a biological context.
- Implement a project by defining the context and the experimental objectives on quantitative measurements linked to a biological question.
- Integrate their skills in engineering developments towards and for diagnosis, prognosis and precision medicine in order to stimulate the emergence of new technologies for biology (biotech) and health (medtech).

JOB OPPORTUNITIES AND FURTHER STUDIES

At the end of this master's degree, the range of skills and training by project proposed will allow students to integrate multidisciplinary research centers in the academic world (through a doctorate) and R&D in the socio-economic world (pharmaceutical, biomedical industries, start-ups, service companies in medical technologies, biotechnologies).

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

The interdisciplinary Graduate Programme brings together 10 Master tracks, combining the expertises needed to build a human -friendly world. An outstanding scientific environment is provided with 13 research units recognized at the best international level.

Students benefit from interdisciplinary activities, including thematic summer schools, financial support for international mobility and professional training in accordance with research and economic partners.

This programme guides students to prepare their career and to tackle the scientific and technological challenges of our time.

<http://www.isite-ulne.fr/index.php/en/graduate-programme-information-and-knowledge-society-student/>





PROGRAM STRUCTURE

All lessons and training courses are taught in English.

- During the first year (M1), students will have to assimilate solid knowledge in life sciences, biophotonics, systems biology and microsystems. Emphasis will be placed on research methodology with an experimental approach to teaching based on research platforms.
- During the second year (M2), students will acquire more in-depth knowledge in these different fields to observe, manipulate and quantify living systems with innovative and disruptive technologies.

Understanding living systems, from structure to organization, from gene expression to signaling pathways: Fundamentals in cell biology, Cell culture, Biochemistry, Molecular biology, Human pathologies (cancer, diabetes, ...), Neuroscience, Nanomedicine

Mastering and using advanced imaging techniques: Biophotonics, Flow cytometry, High-speed multiparametric analysis, data quantification, Data acquisition, Clinical diagnosis

Quantifying living systems: Genetic network, Dynamics, Data-based models, Computational biology, Bioinformatics, Data mining, Biophysics

Mastering and using advanced micro-technology techniques: Micro / Nano fluidics, Micro-machining, Micro sensors for living analysis, Surface properties, Laboratory on chip, Organ-on-chips

Conducting biological and biotechnological development projects: Laboratory project, Ethics, Public health, Clinical trials, Technological intelligence, Intellectual property, Project management, Entrepreneurship



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

ADMINISTRATIVE STAFF

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COORDINATORS AND DIRECTORS

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Microsystems coordinators: Thomas DARGENT,
Anthony TREIZEBRÉ
Project / internship coordinator: Vincent THOMY

APPLICATIONS

TO MASTER 1 OR MASTER 2

Admission to the first year of the master's program is subject to the examination of the candidate's application file in the following ways:

PREREQUISITES FOR ACCESS TO A MASTER'S DEGREE, RECOMMENDED LICENSE TERMS: biology, physics, chemistry, computer science, mathematics, electrical engineering, engineering schools

INTEGRATION OF THE PROGRAM: in initial and continuing training, university certificates, as well as apprenticeship

CAPACITY: 20 places in master 1; 20 places in master 2 (opening in 2021)

RECRUITMENT CALENDAR VIA THE APPLICATION SUBMISSION ON THE E-CANDIDAT.UNIV-LILLE.FR PLATFORM:

- Opening from 03/01/2021 to 04/29/2021,
- Publication of admissions: 04/30/2020,

SELECTION PROCEDURES: on candidate's application file

REVIEW CRITERIA: a solid background in science with a multidisciplinary research project in technologies for health and precision medicine.

SCHOLARSHIPS

Scholarships awarded by the Graduate Programme « Information and Knowledge Society » are available to M1 and M2 students to support their studies, to facilitate their settling in Lille and to make an internship in a foreign country.

Eligibility, criteria and application can be found here :

<http://www.isite-ulne.fr/index.php/en/graduate-programme-information-and-knowledge-society-student/>

deadline : 15th March 2021 (first call) ; please check the date online for the second call

ACCOMPANIMENT

Study layout

In order to offer the best conditions for success for the students it welcomes, the University of Lille sets up various devices that allow students to start and continue their studies as best as possible according to their situation: student with a disability, high-level sportsman and artist, civic service, student in exile ...

- More info on <https://www.univ-lille.fr/etudes/amenagements-des-etudes/>

Continuing education and work-study

All of the university's degree offer is available in continuing education. You can also access this offer through a VAPP (validating of professional achievement and experience) or obtain the diploma as part of a VAE (validating of professional experience). Many diplomas are offered on a work-study basis as part of a professionalization or apprenticeship contract. For all information or to receive personalized advice, visit the website of the Direction of Continuing and Alternating Education (DFCA).

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Relations internationales

The University of Lille has a policy of supporting international access to its courses. That's why he introduced special procedures to make international students feel welcome and form collaborations.

www.univ-lille.fr/home/international-student/

Practical information for your stay at the University of Lille
www.univ-lille.fr/home/international-student-tool-box