

Master

Master 1 - Master 2

Mention

Physical and Analytical Chemistry

**ERASMUS MUNDUS JOINT MASTER
DEGREE**

ADVANCED SPECTROSCOPY IN CHEMISTRY

2-year master's course



MASTER 1 & 2

Atmospheric Environment

MASTER 1 & 2

Advanced spectroscopy in chemistry

OBJECTIVES

Created in 2007, the Erasmus Mundus Joint Master's Course in Advanced Spectroscopy in Chemistry - ASC Master - has been jointly designed and is operated by 5 European partner universities (Lille - coordinating institution; Alma Mater in Bologna, Jagiellonian in Krakow, Leipzig and Helsinki). The ASC master is a program of excellence which has been awarded the Erasmus Mundus label and funding three times since 2008.

It is a two year (4 semesters, 30 ECTS each) Master program including mobility periods within the ASC network. Each partner university of the ASC network offers state of the art equipment and expertise covering applications of spectroscopic techniques to chemistry in a broad sense (from material sciences, environmental sciences, biomedical/health sciences etc.). Mobility within this network prepares students to become experts and develop intercultural skills towards doctoral studies, and/or professional industrial careers in chemical analysis and characterization of the structure of materials in the fields of molecular synthesis, biology, nanotechnologies, modeling, pharmacy, green chemistry, materials, and sustainable energies.

TARGETED SKILLS

ASC graduates

- Are experts in chemical analysis, structural characterization, characterization of fast reactions, In Situ spectroscopy, imaging;
- Are well prepared for R&D careers in industry or in public research institutes.
- Develop high skills in project management, intercultural communication, and are at least bilingual.

JOB OPPORTUNITIES

- Since it first opened, 254 students from 51 countries have enrolled the course. ASC graduates have acquired the ability to work in a multicultural environment and are at least bilingual. L'Oréal Paris, R&D, Paris and Shanghai, Merck KGaA - Milipore, Darmstadt, Germany, Reckitt Benckiser, Hull, UK, among others, chose to hire them, either directly after the Master or after a PhD.

Nearly 80% of the ASC graduates have started a PhD, mainly in European universities.

STRENGTHS OF TRAINING

- A guarantee of quality: the ASC master is an accredited master's degree in all 5 partner institutions;
- The ASC master is supported by the European Union (Erasmus Mundus Joint Master Degree) and has been awarded the Euromaster label by the ECTNA (European Chemistry Thematic Network Association);
- The ASC master has developed a network of global industrial partners, competitiveness clusters and research institutes;
- The ASC master provides skills not only towards doctoral studies, but also towards professional activities in industry;
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- Mobility within a network of research laboratories spread amongst 5 countries from a large area of Europe;
- A high level equipment available in the ASC network is unique;
- A high level supervision and training;
- Graduates are awarded a multiple degree from the partner institutions where they have spent at least one semester (30 ECTS credits);
- Erasmus Mundus student scholarships including a living allowance of 1 000 euros per month and covering participation, installation and travel costs (total amount for the 2 years ranges from 35 000 to 49 000 euros). NO Erasmus Mundus grant available in 2021.



TRAINING'S ORGANIZATION

The ASC master is a 2-year master's course (120 ECTS credits).

- Three semesters (30 credits each) of integrated courses : **the first semester in Lille** provides all students with a common platform in advanced spectroscopic methods, including magnetic resonance, mass spectrometry, optical spectroscopy and diffraction techniques. **In the second and third semesters**, more specialized instruction is provided with applications in molecular synthesis, material sciences, biology, nanotechnologies, modeling, "green chemistry", new energy sources. 10 credits are devoted to transferable skills (internship, bibliographical research, project management, norms and regulations in chemistry).
- One semester for the Master thesis (30 credits) in a research Laboratory The ASC network offers a broad range of opportunities for internships in research laboratories within the ASC institutions, and associated partners (industry, large scale research facilities or research institutions). The master thesis can be based on a collaborative project between two institutions.
- In addition, a winter school is organized each year in a different location on a chosen topic to deepen one specific field of spectroscopy. This joint social event gathers students, members of the ASC institutions as well as industrial and research associated partners, and ASC alumni.

Over the years, the ASC network has developed links with global industrial partners producing spectrometers (Brüker, Magnetech) as well as with regional competitiveness clusters (MATIKEM in Lille, NEU in Leipzig). A privileged partnership has also been established with great research facilities such as synchrotron SOLEIL in France and ELETTRA in Italy.

APPLICATION

Candidates shall hold :

- A BSc in chemistry, or equivalent education in the field of chemistry, biochemistry, physical chemistry or physics.
- Relevant theoretical knowledge in chemistry or related professional experience.
- Good English skills (minimum score for Toefl paper test 550; IELTS: 6.5; CEF Europass: B2).
- A strong interest in spectroscopic techniques and their wide range of applications
- Motivation to study in a multicultural environment in at least two European universities
- Apply online before April 15th, 2021: for admission and EM scholarships www.master-asc.org

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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

ACCOMPAGNEMENT

Service Universitaire d'Accompagnement, d'Information et d'Orientation (SUAIO)

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Pass'pro - Bureau d'aide à l'insertion professionnelle

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FACULTY

The faculty of science and technology is a training and research unit of the University of Lille.

It brings 9 training departments and 27 research structures in the following areas :

- Biology;
- Chemistry;
- Electronics, Electrical engineering, Automatic;
- Computer Science;
- Mathematics;
- Mechanical;
- Physical;
- Earth Science;
- Station Marine Wimereux.

The faculty of science and technology of the University of Lille offers a multidisciplinary training offer quality, from Bachelor to PhD, through professional bachelors and masters. The faculty hosts every year on the campus more than 7 000 students in initial training.