

Master's degree in
SPACE SCIENCE





Master's degree in Space science

To understand the origin and evolution of the Earth and the Universe...
To participate in the development of advanced space missions...
 A unique study programme in French-speaking Belgium!

- ☀ Day courses
- 💬 90% of the courses are in English
- © 120 credits

The Astrophysics and Geophysics Department of the Faculty of Science of the University of Liège offers training to students who wish to take an active part in space related research and development, which will enable us to know more about the origin, structure and evolution of the Universe.

ACADEMIC TRAINING WITH MULTIPLE APPLICATIONS

Astrophysics covers many fields, such as the study of the solar system, the observation of stars and the study of their internal structure and stability, and the observation of galaxies and quasars. Cosmology is also covered, as well as aspects closely related to more fundamental physics, such as astroparticles and gravitational waves.

Geophysics, a related discipline, is more particularly interested in planets, both within our solar system, including the Earth, and in orbit around other stars, namely exoplanets.

This field is the subject of much research at the Institute of Astrophysics and Geophysics, where the oceans and the evolution of the Earth's, and other planet's, climate, interior and atmosphere are studied.

“ The master in Space Sciences gave me a solid background in a wide diversity of astrophysics topics, which helped me developing interdisciplinary skills of major importance for my PhD project in Exeter ”
Adrien H., Belgique

PROGRAMME

A VAST AND VARIED CHOICE OF COURSES MOSTLY TAUGHT IN ENGLISH - 2 SPECIALIST FOCUSES

Space Science covers a wide range of fields. The course programme highlights this diversity and is structured around 6 orientations to enable students to acquire advanced skills in all of these areas of study. This learning is complemented by practical training. The course comprises:

- ▶ **The core curriculum:** choice of **63 course credits**, including at least one course to be chosen from each of the following 6 orientations: interdisciplinary courses, cosmology and astroparticles, astrophysics, planetology and planetary systems, oceanography and climate, space science instruments and methods;
- ▶ **Specialist focus: 30 credits.**
 - › **The research focus** is aimed more at students who wish to go into research.
 - › **The specialist focus** allows students to develop skills and know-how which are highly appreciated in the non-academic sector, in particular within companies developing space applications, in industries exploiting space related data, or within space agencies.
- ▶ **Master's dissertation: 27 credits.** For the Master's degree with a research focus, this is a research-oriented piece of work. For the Master's degree with a specialist focus, it is a placement that can be carried out at the Centre Spatial de Liège (Liège Space Center), at a company, or at a space agency, such as the European Space Agency (ESA).

AN INTERNATIONAL COURSE

ULiège researchers develop original research programmes and participate in national and international scientific collaborations. Many of these are oriented towards space research, in particular within the Centre Spatial de Liège (Liège Space Center), which is regularly entrusted with work by European space research organisations. Researchers from the Institute of Astrophysics and Geophysics collaborate with colleagues from the ESA and NASA.

“ The Master's program provides a great range of Master thesis topics. Thanks to my thesis project, I got the necessary technical skills to work with astrophysical data as a Young Graduate Trainee at ESA ” **Marie L. A., Estonie**

WORLD-RENOUNDED EXPERTS

Forty seminars complete the training. Presented by international experts, these lectures address current scientific issues. The main objective is to enrich the students' vision and knowledge of new issues in this sector. Moreover, they allow students to meet personalities from the world of space research.

STAYS AND PLACEMENTS ABROAD

There are many possibilities for Erasmus stays. In addition to these exchange programmes, students who wish to do a final project abroad can do so with financial support through the Erasmus traineeship programme. In addition, students have the opportunity to become familiar with astronomical observation techniques through a placement at a foreign observatory.

JOB PROSPECTS

RESEARCH

There are many opportunities in universities, international organisations such as the European Southern Observatory (ESO), the ESA and NASA, and national non-university organisations.

PRIVATE AND PUBLIC SECTORS

This degree can lead to a job in research and development departments in the space industry, in scientific divisions of public institutions, companies and financial organisations that recruit scientists for their mathematical, computer science and optics skills, or within scientific consultancy firms.

EDUCATION

The training enables graduates to apply for teaching posts in secondary schools, higher education institutions or for teaching missions abroad following a 30-credit teacher training course.

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ELIGIBILITY

The Master's degree in Space Science is directly accessible to holders of a Bachelor's degree in Physics or Engineering.

In addition, students who have already obtained a Master's degree in Physics or Engineering can access the Master's degree in Space Science in Block 2, meaning they follow a 60-credit programme. Students meeting this eligibility criterion may also complete the 120 credit Master's degree in order to benefit from all the opportunities the full course has to offer.

In addition, depending on the students' prior training, there are pathways from other Bachelor's degrees (Chemical Sciences, Mathematics, Geology, etc.) meaning that the students can take extra course credits according to their specific profile.

“ *This master degree gave me the opportunity to develop my skills and knowledge beyond mere academic certifications. Soon after my graduation I was already offered several research positions in top-tier institutes around the world.* ” **Amedeo R., Italie**

CONTACT

Administrative and Teaching Information

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FACULTY OF SCIENCE

Thanks to both its uniqueness and diversity, the Faculty of Science's mission is threefold, covering teaching, research and services to society.

Teaching at the Faculty of Science is both multidisciplinary and interdisciplinary, as is its research. It is led by passionate teachers/researchers, all of whom are specialists in their chosen fields.

As such, the Faculty contributes to the development of knowledge and the elaboration of new concepts, contributing to the constant modernisation of student training.

📘 www.sciences.uliege.be

📘 @ULiegefasciences

AGO DEPARTMENT

The Astrophysics, Geophysics and Oceanography Department brings together around a hundred researchers. Their areas of interest are varied: monitoring and analysis of the climate and oceans; studying the planets and small bodies of our Solar System and other planetary systems; observing and modelling the stars of our Galaxy; analysing galactic and extragalactic structures, such as quasars... not forgetting cosmology and the study of fundamental particles. At the same time, the AGO Department is involved in three Master's programmes: the Master's degree in Space Science, the Master's degree in Geography: Global Change, and the Master's degree in Oceanography.

In addition, some thirty doctoral students are pursuing their doctoral training within the department.

📘 www.ago.ulg.ac.be

www.programmes.uliege.be/info/spatial