



LUND
UNIVERSITY

MSc in Astrophysics

LUND UNIVERSITY | SWEDEN

- Master of Science in Astrophysics
- 2 years, full-time, 120 ECTS credits
- Department of Astronomy and Theoretical Physics
- Lund Campus
- Application deadline: January 2023
- Programme start: August 2023

PROGRAMME OVERVIEW

This structured two-year programme offers you the opportunity to learn about the Universe and apply your knowledge of physics in a vibrant and fast-developing area of science.

The first semester is spent on core astronomy courses, including stellar structure and evolution and galactic dynamics. In the second semester, you will begin work on a 60 ECTS degree project with dedicated individual supervision, and this project continues over three semesters. You will also take four more courses broadening your knowledge of the most exciting areas of modern astrophysics, such as exoplanets and galaxies.

PROGRAMME MODULES/COURSES

COMPULSORY COURSES: Stellar Structure and Evolution, Dynamical Astronomy, Statistical Tools in Astrophysics, Planetary Systems, Extragalactic Astronomy.

ELECTIVES: High Energy Astrophysics, Observational Techniques and Instrumentation, Computational Astrophysics, General Relativity, Fluid Mechanics, Radiative Transfer and Stellar Atmospheres.

In the courses, there are normally about 4 hours of lectures per week as well as additional seminars and workshops that are led by the teachers. Supervision for the thesis project is individual, on a weekly basis for the full duration of the project. The long duration of the project allows to explore a cutting-edge research topic in-depth, and develop competitive skills and knowledge. The student is fully integrated into the scientific and social life of the department and participates in weekly group meetings and seminars.

CAREER PROSPECTS

Although many of our students go on to do a PhD in astronomy, we aim to teach skills that are of broad use outside academia like data mining and machine learning.

Some of our former Master's students are doing or have done PhDs at the University of Cambridge, Heidelberg University and Leiden University. Former alumni work at Sony, as postdocs at universities in Europe and the USA, as secondary school teachers and on developing the next generation of instruments to image the retina in the human eye. More information can be found at <https://www.astro.lu.se/Education/Masterprogramme>.

ENTRY REQUIREMENTS AND HOW TO APPLY

Entry Requirements

A Bachelor's degree of at least 180 credits in physics or the equivalent. The degree must include at least 90 credits in physics. English Level 6. For details on English proficiency levels, see www.lunduniversity.lu.se

How to apply

- 1. Apply online:** Go to www.lunduniversity.lu.se/astro-physics. Click on "Apply" and follow the instructions for the online application at www.universityadmissions.se, the Swedish national application website. Rank the chosen programmes in order of preference.
- 2. Submit your supporting documents:**
 - **General supporting documents:** Check what documents you need to submit (i.e. official transcripts, degree diploma/proof of expected graduation, translations, proof of English, passport) and how you need to submit them at www.universityadmissions.se.
 - **Programme-specific supporting documents:** When applying for the Master in Astrophysics, you must submit a statement of purpose (motivation letter) of approx. 1 page. Recommendation letters are not required.
- 3. Pay the application fee (when applicable).**



“My Master’s in Lund has prepared me with a great deal of knowledge and research experience to face studies and research at the PhD level. We are also encouraged to work on skills that are useful for scientists, such as teamwork, and to practise with oral presentations. All these skills are also helpful for any physics students that want to continue their career outside academia.”

Lorena Acuña from Spain



Selection criteria/additional info

The selection will be based on the grades awarded for previous academic courses and the statement of purpose (motivation letter).

Tuition fees

Tuition fee SEK 155 000 per year for non-EU/EEA citizens. No fee for EU/EEA citizens. See www.lunduniversity.lu.se for details on tuition fees.

ABOUT THE DEPARTMENT OF ASTRONOMY AND THEORETICAL PHYSICS

Lund Observatory, where you will be studying, is part of the Department of Astronomy and Theoretical Physics. At Lund Observatory we carry out research in a variety of fields, including high-energy astrophysics, studies of exoplanet formation and dynamical stability of exoplanet systems, simulations of galaxy formation and evolution, and large- and small-scale investigations of the properties of the Milky Way and its stars. Researchers in Lund have been fundamental to the success of the ESA astrometric satellite Gaia, Lund Observatory is a consortium member of 4MOST, which will carry out the next generation of massive spectroscopic investigations of the Milky Way complementing Gaia, individual researchers in the department are members of PLATO (ESA space mission to observe exoplanet hosts), WEAVE (ground based massively multiplex spectrograph on La Palma), CHEOPS (ESA's first small mission

and future instruments for the European Extremely Large Telescope. This, coupled with a vibrant theoretical component means that we, and our students, have an active research environment where we enjoy diverse collaborations crossing between specialties.

ABOUT LUND UNIVERSITY

Lund University was founded in 1666 and is repeatedly ranked among the world's top 100 universities. The University has around 46 000 students and more than 8 000 staff based in Lund, Helsingborg and Malmö. We are united in our efforts to understand, explain and improve our world and the human condition.

Lund is considered one of the most popular study locations in Sweden. The University offers one of the broadest ranges of programmes and courses in Scandinavia, based on cross-disciplinary and cutting-edge research. The unique disciplinary range encourages boundary-crossing collaborations both within academia and with wider society, creating great conditions for scientific breakthroughs and innovations. The University has a distinct international profile, with partner universities in approximately 70 countries.

Lund University has an annual turnover of EUR 912 million, of which two-thirds go to research in our nine faculties, enabling us to offer one of the strongest and broadest ranges of research in Scandinavia.

CONTACT

Programme webpage:
[www.lunduniversity.lu.se/
astrophysics](http://www.lunduniversity.lu.se/astrophysics)

Programme Coordinator:
Florent Renaud
florent@astro.lu.se

Lund University was founded in 1666 and is repeatedly ranked among the world's top 100 universities. The University has around 46 000 students and more than 8 000 staff based in Lund, Helsingborg and Malmö. We are united in our efforts to understand, explain and improve our world and the human condition.

Learn more at www.lunduniversity.lu.se

Ask questions and follow news at facebook.com/lunduniversity

Disclaimer: Changes may have been made since the printing of this fact sheet. Please see www.lunduniversity.lu.se for any updates.



LUND
UNIVERSITY