



**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 2021
- Programme start: August 2021

## 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 under the supervision of internationally well-regarded professors, 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 the early universe.

## Programme modules/courses

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

**ELECTIVES:** High Energy Astrophysics, Introduction to 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. Note that you will take two courses in parallel at all times during the autumn in the first year. Supervision for the thesis project is provided on an individual basis, but students receive super-

vision each week during the whole project. In addition to that, you will be fully integrated into the life of the department and actively participate in weekly group meetings and scientific 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.

To give an idea of the possibilities open to you, we can mention that 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 (equivalent to IELTS 6.5, TOEFL 90). For details on English proficiency levels, see [www.lunduniversity.lu.se](http://www.lunduniversity.lu.se)

### HOW TO APPLY

**1. Apply online:** Go to [www.lunduniversity.lu.se/astro-physics](http://www.lunduniversity.lu.se/astro-physics). Click on "Apply" and follow the instructions for the online application at [www.universityadmissions.se](http://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 diplo-

"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





ma/proof of expected graduation, translations, proof of English, passport) and *how* you need to submit them at [www.universityadmissions.se](http://www.universityadmissions.se).

- **Programme-specific supporting documents:** When applying for the MSc in Astrophysics, you must also submit a statement of purpose and letter(s) of recommendation with your application.

**3. Pay the application fee** (when applicable).

#### **SELECTION CRITERIA/ADDITIONAL INFORMATION**

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

#### **TUITION FEES**

There are no tuition fees for EU/EEA citizens. For non-EU/EEA citizens, the tuition fee for this programme is SEK 145 000 per year. See [www.lunduniversity.lu.se](http://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 40 000 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 the most popular study location in Sweden. The University offers one of the broadest ranges of degree programmes and courses in Scandinavia, based on cross-disciplinary and cutting-edge research. Because of its wide disciplinary range, interdisciplinary collaborations and engagement with wider society, Lund University is particularly well equipped to meet complex societal challenges. With partner universities in around 70 countries, the University's profile is distinctly international.

Lund University has an annual turnover of more than EUR 830 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.

Learn more at [www.lunduniversity.lu.se](http://www.lunduniversity.lu.se)

Ask questions and follow news at

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#### **CONTACT**

**Programme webpage**

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

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