

- Master of Science in Physics
- 2 years, full-time, 120 ECTS credits
- Department of Physics
- Lund Campus
- Application deadline: January 2024
- Programme start: August 2024

## PROGRAMME OVERVIEW

Are you fascinated by the tiniest components of our world and the forces that affect them? This Master's programme enables you to take part in the hunt for new knowledge via international experiments such as those at CERN, the world's largest particle physics laboratory.

In this programme, you will gain an understanding of the fundamental principles that govern the structure of the entire physical world, through the mathematical theories and experimental data that reveal the physics of the known universe. Among other things, the Master's programme will provide you with specialised knowledge of the standard model of physics, including its fundamental potential to explain the basic principles of physics, as well as its limitations. You will gain insight into the research that strives for explanations outside the framework of the standard model, e.g. with regard to the universe's dark matter. You will also get an opportunity to immerse yourself in research on the quark-gluon plasma, the extremely energy-dense matter which characterised the early universe.

These areas of knowledge are investigated at CERN, on the border between France and Switzerland. Lund University's Department of Physics participates very actively in the research at CERN. As a student in the Master's programme in particle physics, you will visit the facility to study the ongoing research in two of the laboratory's largest experiments, ATLAS (on the standard model) and ALICE (on quark-gluon plasma). You will also participate actively in analysing fresh data from the experiments. Particle physicists at Lund University are also very active in setting up a new experiment: LDMX – Light Dark Matter eXperiment.

The Master's programme has strong links to research, and provides you with extensive training in processing and interpreting large amounts of data.

## PROGRAMME MODULES/COURSES

For information on mandatory and elective courses, see the programme website: [www.fysik.lu.se/en/masters-programme-physics-particle-physics-courses](http://www.fysik.lu.se/en/masters-programme-physics-particle-physics-courses)

## CAREER PROSPECTS

The Master's programme provides a good basis for research studies in particle physics and prepares you to work in the major international research laboratories. Both the research facilities in Lund – the MAX IV Laboratory and ESS (European Spallation Source) – also contribute to new opportunities on the labour market. A master's degree in particle physics also prepares you well for a career path outside of academia; many graduates go on to jobs in fields such as information and communications technology, or e-science, where there is a need for expertise in advanced programming and modelling as well as the processing of large amounts of data..

## 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.

### How to apply

- 1. Apply online:** Go to [www.lunduniversity.lu.se/particle-physics](http://www.lunduniversity.lu.se/particle-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:** 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](http://www.universityadmissions.se).



“Lund University is one of the best universities in the world. I chose Lund because of the collaborations with both the ATLAS and ALICE experiments, which are two of the main experiments at CERN that interest me. Lund University is the right place to study physics. All the facilities you could possibly need are here – Lund has it all! Most important of all, the experts, teachers and supervisors really take care of you and guide you well. I was also lucky enough to get a part-time job at MAX-lab. The Master's in Particle Physics gives you an excellent base with which to carry on your research interest into the future and Lund has a lot of choices in terms of physics disciplines.”

Patrawan Pasuwan from Thailand





- **Programme-specific supporting documents:** When applying for this programme, you must also submit a 'Summary Sheet' with your application. See the programme webpage for details.

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

#### Selection criteria/additional info

The selection will be based on grades awarded for previous academic courses, particularly qualifying courses, and the statement of purpose (from the applicant's 'Summary Sheet').

#### Tuition fees

Tuition fee SEK 170 000 per year for non-EU/EEA citizens. No fee for EU/EEA citizens. See [www.lunduniversity.lu.se](http://www.lunduniversity.lu.se) for details on tuition fees

#### ABOUT THE DEPARTMENT OF PHYSICS

The Department of Physics with a staff of about 400 scientists and educators is one of the largest departments within Lund University. There are seven research divisions and a number of research centers within the department. We work to extend the understanding of physics and its applications, and to communicate our findings, and those of others, to new generations. The research at the department covers a wide range of modern physics. In addition to our own research activities, our research-

ers participate in several collaborations and environments, both at Lund University and internationally. We also teach the basics of physics to over one thousand students every year.

#### ABOUT LUND UNIVERSITY

Lund University was founded in 1666 and is repeatedly ranked among the world's top universities. The University has around 45 000 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 75 countries.

Lund University has an annual turnover of EUR 892 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/particle-physics](http://www.lunduniversity.lu.se/particle-physics)

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Johanna Nilsson Onsberg

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