



**LUND**  
UNIVERSITY

# MSc in Nanoscience

LUND UNIVERSITY | SWEDEN

- Master of Science in Nanoscience
- 2 years, full-time, 120 ECTS credits
- Faculty of Engineering
- Lund Campus
- Application deadline: January 2023
- Programme start: August 2023

## PROGRAMME OVERVIEW

On the nanometre scale, concepts and tools of physics are relevant also in chemistry and biology, and the different disciplines can interact closely. Nanoscience is therefore characterized by a large degree of interdisciplinarity. The Nanoscience programme at Lund University has its scientific base in a physics description of nanoscale phenomena, but in addition to nanophysics you can, depending on your background and interests, choose to specialise in fields such as nanoelectronics, materials science or biophysics. The programme is part of NanoLund, one of the world's leading nanoscience research centres. You will interact with cutting-edge research throughout the programme, starting in the first semester and building up to the Master's project. Moreover, by taking advantage of the wealth of courses offered by Lund University, you will be able to explore the cross-disciplinary nature of nanoscience.

As an introduction to the programme, the first semester consists of four compulsory courses, chosen to define the core of the programme and to give a platform for the following courses and thesis work. The compulsory courses include processing and analysis methods relevant for nanostructures as well as semiconductor physics and a quantum mechanical based description of nanoscale physics phenomena. The second and third semesters consists of elective courses which the students, in dialogue with the programme coordinator, combine into an individual profile according to interest and background. The programme is concluded with a Master thesis project, where the student is part of a research group and carries out an independent project. The Master thesis may also be performed in collaboration with industry.

After being awarded the Master degree, you should have the knowledge, understanding and independence to be able to contribute to the development of nanoscience and nanotechnology in academic and industrial research and development. Further, you have the knowledge and understanding needed to be able to evaluate and incorporate nanoscience into products and applications of more traditional fields.

## PROGRAMME MODULES/COURSES

**COMPULSORY COURSES AND NUMBER OF ECTS CREDITS:** Semiconductor Physics (7.5), Processing and Device Technology (7.5), Materials Analysis at the Nanoscale (7.5), The Physics of Low-Dimensional Structures and Quantum Devices (7.5), Master's degree project (30).

**ELECTIVES:** Choose elective courses for specialisations in, for example, nanophysics, materials science or biosensors.

## CAREER PROSPECTS

There is an increasing demand worldwide for people knowledgeable in nanotechnology. Nanoscientists are not only needed in specialised nanotechnology companies but also in more traditional industries, with more and more nanotechnology being incorporated into products. Due to the close connection to world-class research, the Master's programme also provides excellent preparation for doctoral studies and an academic career.

## ENTRY REQUIREMENTS AND HOW TO APPLY

### Entry requirements

A Bachelor's degree in science or engineering. Completed courses of at least 40 credits/ECTS in physics, and 30 credits/ECTS in mathematics, covering quantum mechanics, electromagnetism, solid-state physics, multi-dimensional calculus, linear algebra and Fourier analysis. English Level 6.

### How to apply

1. **Apply online:** Go to [www.lunduniversity.lu.se/nanoscience](http://www.lunduniversity.lu.se/nanoscience). Click on "Apply" and follow the instructions for



**“The programme is highly interdisciplinary. Depending on what field you decide to focus on within this Master's, you can pursue what you really want to do in your future career, which is great.”**

Sudhakar Sivakumar from India



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 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).
- **Programme-specific supporting documents:** For information on programme-specific documentation, please check the programme webpage.

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

### 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](http://www.lunduniversity.lu.se) for details on tuition fees.

### Selection criteria/additional information

The selection is based on academic qualifications.

### ABOUT THE FACULTY OF ENGINEERING

The Faculty of Engineering LTH, is a place for dreams and discoveries. We inspire creative development of technology, architecture and design and teach some of Sweden's most attractive Master's programmes, all built on a broad research base. LTH is among the leading engineering faculties in Europe with nearly 10 000 students. Over 1 000 researchers at LTH work hard to improve the quality of life for people and promote more careful use of the Earth's resources. A world record in

5G technology, solar cell-driven water purification, early cancer diagnosis, nanotechnology for more efficient solar panels, and a health-promoting oat drink are some of the innovations developed at LTH. Together we explore and create – for the benefit of the world.

### 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/nanoscience](http://www.lunduniversity.lu.se/nanoscience)

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