



LUND
UNIVERSITY

MSc in Photonics

LUND UNIVERSITY, SWEDEN

- Master of Science in Photonics
- 2 years, full-time, 120 ECTS credits
- Faculty of Engineering
- Lund campus
- Application deadline: January 2020
- Programme start: August 2020

Programme overview

The 21st century is the century of the photon and photonics is the science and technology of generating, controlling and detecting photons. Lasers and related technologies are today indispensable in very diverse fields of science, manufacturing and medical applications. Light-emitting diodes replace our traditional lighting and contribute to lower power consumption. Photonic technology, i.e. optical fibers and related photonic devices, is the backbone of global communication and information exchange. The increasing importance of photonics for society is also underlined by the Nobel prizes in 2009, 2014 and 2018. The Photonics programme at Lund University provides in-depth understanding of optics and laser technology, practical experience of optical design, practical experience in an optics and laser laboratory and in-depth knowledge of important photonics applications (e.g. communication or medical optics).

This education programme is coupled to world-leading research activities in optics, lasers and their applications, performed at the Lund Laser Centre. NanoLund, with an active research area in applied photonics, is another research centre connected to the programme.

Programme modules/courses

COMPULSORY COURSES AND NUMBER OF ECTS CREDITS:

Optics and Optical Design (7.5), Lasers (7.5), Optoelectronics and Optical Communication (7.5) Advanced Optics and Lasers (7.5), Medical Optics (7.5), Master's degree project (30).

ELECTIVES: A number of 7.5 credit/ECTS courses available in the areas of Communication, Interaction and Devices/Components.

Career prospects

The employment opportunities in photonics are excellent. The photonics market features stable growth much beyond the global GDP growth. Applications of photonics include light detection, telecommunication, information processing, illumination, metrology, spectroscopy, medicine, laser material processing, robotics and defence. While the photonics industry is truly global, a number of photonics related companies exist in Lund and two international research facilities create additional opportunities for photonics engineers – MAX IV, a synchrotron radiation laboratory that opened in Lund in June 2016, and ESS, the European Spallation Source that is currently under construction.

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, basics in optics, multi-dimensional calculus, linear algebra and Fourier analysis. English Level 6 (equivalent to IELTS 6.5, TOEFL 90). See www.lunduniversity.lu.se for details.

HOW TO APPLY

1. Apply online: Go to www.lunduniversity.lu.se/photronics.

Click on "Apply" and follow the instructions for the online application at the Swedish national application website www.universityadmissions.se. 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:** For information on programme-specific documentation, please check the programme webpage.

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

SELECTION CRITERIA/ADDITIONAL INFO

The selection is based on academic qualifications.

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 for details on tuition fees.

About the Faculty of Engineering

The Faculty of Engineering at Lund University (LTH) is among the leading engineering faculties in Europe with over 9 000 undergraduate students and 800 postgraduates. We are one of the few comprehensive engineering faculties in Sweden, and in addition to traditional engineering programmes we also offer programmes in architecture and industrial design. With a 50-year long history of research and education excellence, we are well equipped to meet the increasing global demand for more sustainable, connected and user-driven technologies, and to provide our students with the knowledge and skills they need in order to succeed within their chosen field.

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 7 600 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. Lund University offers one of the broadest ranges of programmes and courses in Scandinavia, based on cross-disciplinary and cutting-edge research. The University has a distinct international profile, with partner universities in around 70 countries.

Lund University has an annual turnover of SEK 8.5 billion, more than half of which is destined for research. Our eight faculties conduct strong research in many different areas, including over thirty research fields in which we are world-leading. Many scientific breakthroughs and pioneering innovations have originated from Lund University.

The world-leading research facilities MAX IV and ESS which are being established in Lund will be of great significance for research and industrial development within materials and life sciences. MAX IV is the world's foremost synchrotron radiation facility and the ESS will be the most powerful neutron source in the world once it opens for research in 2023. Science Village Scandinavia is developing nearby and is destined to become a meeting place and a test environment for research, education and entrepreneurship.

Learn more at www.lunduniversity.lu.se

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CONTACT

Programme webpage

www.lunduniversity.lu.se/photonics

Programme Director

Cord Arnold, msc.photonics@lth.lu.se