Programme overview

Photonics is the science and technology of generating, controlling and detecting light. Photonics is of increasing importance to our society, as illustrated by the 2009 and 2014 Nobel Prize in Physics. Optical communication, which relies on optical fibres combined with several other photonics devices, forms the backbone of today’s information technology. Light-emitting diodes provide bright and energy-efficient white lamps for tomorrow’s lighting and lasers are today important tools in virtually any field of research and technology. Our programme 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 some of the main photonics applications (e.g. communication or biophotonics).

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 also 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

Employment opportunities exist in many areas. Applications of photonics include light detection, telecommunications, information processing, illumination, metrology, spectroscopy, medicine, laser material processing, robotics and defence. The photonics industry is in rapid expansion worldwide. In addition, two international research facilities create opportunities for photonics engineers in Lund – 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/photonics](http://www.lunduniversity.lu.se/photonics). Click on “Apply” and follow the instructions for the online application at the Swedish national application website [www.universityadmissions.se](http://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.

*Please note that the information about this programme is subject to change. Please refer to www.lunduniversity.lu.se for any updates.*
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
Ask questions and follow news at facebook.com/lunduniversity