



**LUND**  
UNIVERSITY

# MSc in Embedded Electronics Engineering

LUND UNIVERSITY, SWEDEN

- Master of Science in Electronic Design
- 2 years, full-time, 120 ECTS credits
- Faculty of Engineering
- Lund campus
- Application deadline: January 2019
- Programme start: August 2019

## Programme overview

Embedded Electronics Engineering offers a wide perspective, where digital and analogue design is regarded as one unit in which different domains interact. The focus is on CMOS, where billions of devices are used to build a system on a single silicon die.

The Shanghai ranking (ARWU) ranks Lund University among the top 20 universities in the world in the field Electrical and Electronic Engineering for the year 2017. This programme is demanding and unique in its offering, a perfect preparation for your future career. The programme spans areas from radio frequency (RF) circuits through to data conversion and digital circuits. Another distinguishing feature is that circuit design is linked to the area of wireless communication, where RF front-ends are co-designed with digital baseband, which provides the opportunity to build complete transceivers.

Due to the extensive local industry, the programme is closely linked with a variety of private companies, which ensures that our courses maintain high market relevance. In some cases, our students' degree projects result in patent registrations and the opportunity to publish their work at international conferences.

### Special features of the programme:

- The focus is on applied studies in digital IC design, analogue RF IC design and mixed signal/ data conversion IC design
- All taught study involves hands-on laboratory work using the most modern CAD tools and IC technologies
- Taught by world-leading researchers and with very strong links to research in the field

- After the initial taught courses, students undertake a large project, where the student starts from a digital or analogue design specification and carries it through to completion and, in some cases, silicon realisation

## Programme modules/courses

**COURSES AND NUMBER OF CREDITS:** Embedded Systems (7.5), Introduction to Structured VLSI Design (7.5), Analogue IC Design (7.5), Digital IC Design (7.5), Integrated A/D and D/A Converters (7.5), Patent and Intellectual Property Rights (IPR) (7.5), IC Project & Verification I (7.5), IC Project & Verification II (7.5) Master's degree project (30), electives at the Faculty of Engineering (in total 30).

## Career prospects

After completing this programme, you will be ready for a career, or further research studies, in circuits and systems with a focus on VLSI design. Designers in this area are very attractive on the global job market. The Lund area itself is a part of one of the fastest growing regions in Europe, with a large concentration of interesting companies in the field, large and small, such as Sony, Ericsson, Axis, ARM Sweden, Mellanox, Oticon and GN Resound. The European Spallation Source (ESS) and MAX IV, both located in Lund, will also offer students many exciting career opportunities. For some students, perhaps the most interesting career option is to continue towards a PhD.

The final semester degree project offers students the opportunity to work alongside our current PhD students to get a taste of what a career in research is like. This route is very popular with our Master's students, and a large number of graduates have chosen to continue their studies, both in Lund and at other research institutions around the world.



“The programme is industry-oriented and prepares you for the job market. Every course has laboratory sessions, so that you have the opportunity to apply theoretical knowledge. We have professors who guide you if you want to apply for internships or thesis work at a company. I did a summer internship (and later my thesis work) at Ericsson, where I got the chance to work in a field that particularly interests me. While I was working on the thesis, they had a job opening. I applied and finally landed the job. I will start working at Ericsson right after I graduate.”

Deepak Yadav from India





## Entry requirements and how to apply

### ENTRY REQUIREMENTS

A Bachelor's degree in electrical engineering, computer science or equivalent. Completed courses in mathematics (calculus, differential equation, transform theory and linear algebra) of at least 30 credits/ECTS, as well as completed courses in basic circuit theory, electronics, analogue electronics and digital electronics corresponding to at least 30 credits/ECTS in total. The applicant must have basic programming skills (at least one course) and knowledge of electronic description languages, such as VHDL/Verilog. 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/embeddedee](http://www.lunduniversity.lu.se/embeddedee). 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](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).

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

### CONTACT

Programme webpage

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

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## 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. LTH is 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 7,400 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 over 70 countries.

Lund University has an annual turnover of SEK 8 billion, two-thirds of which are 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.

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