MSc in Computational Science, Scientific Computing

LUND UNIVERSITY | SWEDEN

- Master of Science, Major in Computational Science with specialisation in Scientific Computing
- 2 years, full-time, 120 ECTS credits
- Centre for Mathematical Sciences
- Lund Campus
- Application deadline: January 2023
- Programme start: August 2023

PROGRAMME OVERVIEW

This interdisciplinary education will give you leading edge knowledge in the field of computational science. The specialisation has students with a background in mathematics/physics and an interest in mathematics and programming, but also applications in natural sciences, as a target group. In addition to knowledge in theory for computational science, strong emphasis is placed on obtaining knowledge about the practical tools that are used by professionals in the field and you will amongst several things train your skills in programming. You will get generic knowledge and skills of importance for computationally intensive working tasks, such as problem formulation, information search, data processing, scientific writing and presentation techniques.

The programme has three separate specialisations: Geoscience, Physics and Scientific Computing. You will study several courses together with students from another specialisation than your own and there will opportunities to do common projects and thesis work. During your studies, an interdisciplinary perspective is emphasized and you will also study together with students from biology, geology, environmental sciences, physical geography and chemistry.

The education has a strong connection to research. You will meet and be taught by active and internationally well recognised researchers, and you will be in contact with several research groups. You will at the same time be prepared for a career in business and industry.

For programme details, full entry requirements, application steps and selection, visit the programme web page: www.lunduniversity.lu.se/computational-science-scientific-computing

PROGRAMME MODULES/COURSES

Scientific Computing is a branch within computational science where analytical, numerical and statistical methods are used to analyse and draw conclusions from physical models, as well as huge datasets from physics experiments. The programme contains a mix of courses in physics, mathematics and computational science that will give you broad knowledge in numerical methods within data science, Monte-Carlo simulations and solutions to differential equations. You will also get insight into the interplay between computational methods and the underlying physical phenomena and models that are studied.

CAREER PROSPECTS

After graduation, there are several different career paths depending on which subject profile you have chosen. The Master's programme gives you a solid ground for postgraduate education in natural sciences. You can also choose a career path outside academia and then find attractive jobs in areas where there is a need to solve computational problems both in industry and in public administration and other organisations.

ENTRY REQUIREMENTS AND HOW TO APPLY

Entry Requirements

Bachelor´s degree in Physics of at least 180 credits.
Proficiency in English equivalent to English 6/B from Swedish upper-secondary school.
or
Bachelor's degree of at least 180 credits in Science or Engineering. The degree must contain at least 30 credits mathematics, of which 6 credits in programming and 7.5 credits in statistics, and an additional 60 credits in mathematics and/or physics. The degree must contain at least 15 credits in a natural science (not mathematics) or in computer science.
For details on English proficiency levels, see www.lunduniversity.lu.se

How to apply

1. **Apply online:** Go to www.lunduniversity.lu.se/computational-science-scientific-computing**.** Click on "Apply" and follow the instructions for the online application at 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/

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proof of expected graduation, translations, proof of English, passport) and how you need to submit them at www. universityadmissions.se.

- **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
Seats are allocated according to: Previous college/university studies (HPAV): 100 %.

Tuition fees
Tuition fee SEK 145 000 per year for non-EU/EEA citizens. No fee for EU/EEA citizens. See www.lunduniversity.lu.se for details on tuition fees.

ABOUT THE CENTRE FOR MATHEMATICAL SCIENCES
The Centre for Mathematical Sciences is both part of the Faculty of Science and of the Faculty of Engineering. The Centre consists of approximately 120 employees. We carry out research and teaching in mathematics, mathematical statistics and scientific computing. The personnel of the Centre can be clustered according to different non-disjoint criteria, e.g. according to title, faculty, subject or research groups. The three administrative divisions are: Mathematics (Faculty of Science), Mathematics and Numerical Analysis (Faculty of Engineering) and Mathematical Statistics).

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.

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