Programme overview

Why should a physicist study biology? As a matter of fact, they already have for quite some time. Many famous physicists, such as Richard Feynman, Wolfgang Pauli, Niels Bohr, Max Delbrück and Erwin Schrödinger to name a few, had profound interests in biological problems and some made substantial progress to specific fields such as molecular biology.

Biology is increasingly becoming a quantitative science and has a range of fundamentally unresolved problems at hand, e.g. how biomolecules adopt their specific shape, how they interact in cells and how cells divide and communicate. The methods of theoretical physics, among others statistical methods, modelling and simulation, can provide a powerful toolbox for approaching many of these problems.

The Department of Astronomy and Theoretical Physics offers a programme in biological physics and computational biology, which combines a solid base of courses in theoretical and mathematical physics with courses in other subjects given at the relevant departments, such as physics, chemistry and biology.

As a Master’s student you will become part of a vibrant research community at the Computational Biology and Biological Physics division, engaged in cutting-edge theoretical studies of biological problems. The programme includes a Master’s project carried out within one of the research groups.

Programme modules/courses

For information on specialisations and elective courses, please see www.fysik.lu.se/english/education/start-studying/masters-programme

Career prospects

A specialisation in biological physics will give you opportunities to pursue a wide variety of careers. Whereas some students go on to do a PhD in theoretical physics or computational biology, it is also possible to find suitable careers outside academia, for example in the fields of information and communication technology or biotechnology, where advanced programming and modelling is sought after.

In addition, MAX IV and the upcoming ESS laboratory in Lund will give new opportunities for graduates with a degree in physics, including biological physics and computational biology.

More information about career prospects for students at this programme can be found at www.fysik.lu.se/english/education/start-studying/masters-programme

Entry requirements and how to apply

ENTRY REQUIREMENTS

A BA/BSc in physics, mathematics or similar, with 90 ECTS in physics and/or mathematics. English Level 6 (equivalent to IELTS 6.5, TOEFL 90). See www.lunduniversity.lu.se for details on English proficiency levels.

HOW TO APPLY

1. Apply online: Go to www.lunduniversity.lu.se/biological-physics. 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.

• Master of Science in Physics
• 2 years, full time, 120 ECTS credits
• Department of Astronomy and Theoretical Physics
• Lund Campus
• Application deadline: January 2018
• Programme start: August 2018

MSc in Physics, Biological Physics and Computational Biology

LUND UNIVERSITY, SWEDEN
Programme-specific supporting documents: When applying for this programme, you must submit a statement of purpose and letters of recommendation with your application. We also encourage you to fill in our Summary Sheet that can be found on the programme webpage.

3. Pay the application fee (when applicable).

SELECTION CRITERIA/ADDITIONAL INFORMATION
Selection of students is based on previous university/college studies and other merits such as letters of recommendation and statement of purpose.

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 Department of Astronomy and Theoretical Physics
The Department of Astronomy and Theoretical Physics spans a very large range of research activities; theoretical particle physics, computational biology and biological physics, theoretical astrophysics, observational astronomy, research on atomic data, as well as instrument development. We have vibrant and active research groups in all areas. Of special relevance for the Master’s programme in astrophysics is the research, e.g., on black holes, X-ray binaries, Milky Way astronomy, the Gaia satellite, planet formation and studies of evolved giant stars.

About Lund University
Lund University was founded in 1666 and is repeatedly ranked among the world’s top 100 universities. The University has 42 000 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. The University offers one of the broadest ranges of programmes and courses in Scandinavia, based on cross-disciplinary and cutting-edge research. The compact university campus encourages networking and creates the conditions for scientific breakthroughs and innovations. The University has a distinct international profile, with partner universities in over 70 countries.

Lund University has an annual turnover of SEK 8 billion, of which two-thirds go to research. Our research is characterised by both breadth and strength and, according to independent evaluations, over 30 of our research fields are world-leading.

The establishment of the world-leading facilities MAX IV and ESS will have a major impact on future scientific and industrial development in both materials science and life science. MAX IV, which was inaugurated in June 2016, is the leading synchrotron radiation facility in the world, while the European research facility ESS will be the world’s most powerful neutron source when it opens for research in 2023. Adjacent to these facilities, Science Village Scandinavia is also being developed into a meeting place and testing environment for research, education and entrepreneurship.

Learn more at www.lunduniversity.lu.se
Ask questions and follow news at facebook.com/lunduniversity

CONTACT
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