



LUND  
UNIVERSITY

# MSc in Chemistry – Physical Chemistry

LUND UNIVERSITY, SWEDEN

- Master of Science in Chemistry
- 2 years, full-time, 120 ECTS credits
- Department of Chemistry
- Lund Campus
- Application deadline: January 2021
- Programme start: August 2021

## Programme overview

The master's programme in physical chemistry provides a broad and fundamental knowledge of physical chemistry, theoretical chemistry and chemical physics, important fields for industry and for research regarding environment, materials and catalysis. Special emphasis is placed on an unbroken line of understanding, from quantum mechanical description of atoms and molecules to complex supramolecular structures, as well as their industrial and biological applications. It includes courses on thermodynamics, colloid chemistry and spectroscopy. Profound theoretical comprehension of fundamental mechanisms and a good understanding of practical applications are developed using advanced methods such as spectroscopy and calorimetry, together with simulations and theoretical calculations.

During the first year, courses within the fields mentioned above provide you with a suitable base for future studies in these or related subjects. In the second year, they choose Master's degree project or projects in the fields mentioned above, which can be carried out at the University or in a company with a relevant research profile.

## Programme modules/courses

**COURSES AND NUMBER OF CREDITS:** The recommended structure for the programme includes the following courses: Molecular driving forces and chemical bonding (15 ECTS), Advanced surface and colloid chemistry (15 ECTS), Molecular quantum mechanics (7.5 ECTS), Statistical thermodynamics and molecular simulation (7.5 ECTS), Molecular spectroscopy

– methods and applications (15 ECTS) and at least one master's degree project (30, 45 or 60 ECTS).

**COMPULSORY COURSES:** Advanced level courses in chemistry comprising 30 ECTS, of which 15 ECTS should be within physical chemistry, theoretical chemistry or chemical physics, and a Master's degree project comprising at least 30 ECTS.

## Career prospects

Graduates from the programme are highly skilled in conducting research and development and they have a diverse set of employers to choose from, both in industry, medicine and academia, within such diverse areas as smart materials, photochemistry, food science and biomolecular assembly. The programme also provides an excellent foundation for PhD studies. The courses are taught by teachers that are also world-leading researchers, providing valuable contacts for future employment. About half of the students graduating from the programme continue with a PhD-degree, while the rest start working in industry, both in the local region and internationally. Previous graduates from our master's programmes in chemistry are in high demand. Examples of positions held by graduates of the master's programme include process engineer for Silex microsystems (Stockholm, Sweden), senior research scientist at Red lead discovery (Lund, Sweden) and technical service and development engineer at the Dow chemical company (Tarragona, Spain).

## Entry requirements and how to apply

### ENTRY REQUIREMENTS

A Bachelor's degree of at least 180 credits or the equivalent, including at least 90 credits in chemistry, of which at least 15 credits must be in physical chemistry. In addition to courses in chemistry, 15 credits in mathematics are required. English Level 6 (equivalent to IELTS 6.5, TOEFL 90). See [www.lunduniversity.lu.se](http://www.lunduniversity.lu.se) for details on English proficiency levels.



“I think it's a really good programme because you can select which kind of chemistry you're interested in and take courses about that. I really like the courses here, and the fact that you can pick your courses yourself. I also like the fact that classes are really small – it feels really personal. You often work as a team in the classes. The programme allows for a really good balance between studying and having a personal life as well, which is great.”

Floriane Baussière from Switzerland





## HOW TO APPLY

### 1. Apply online:

Go to [www.lunduniversity.lu.se/chemistry-physical](http://www.lunduniversity.lu.se/chemistry-physical). 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:** 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).

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

## SELECTION CRITERIA/ADDITIONAL INFORMATION

The selection will be based on grades awarded for previous academic courses in science, engineering and mathematics.

## 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.

## About the Department of Chemistry

The Department of Chemistry at Lund University provides world-class education and research within a wide area of chemistry. The Department of Chemistry is situated at Kemist centrum, Scandinavia's largest center for research and education in chemistry. It is a unique research environment close to several major research centers, research parks and industries. Our education is closely integrated with the department's research and all our students will have the opportunity to be involved in ongoing research projects during their studies.

The Department of Chemistry has a unique strength in undergraduate and postgraduate education in all areas of chemistry, as we belong to both the Faculty of Science and the Faculty of Engineering (LTH). The student services and support at the department is well-known and much appreciated by our students.

## CONTACT

### Programme webpage

[www.lunduniversity.lu.se/chemistry-physical](http://www.lunduniversity.lu.se/chemistry-physical)

### Director of Studies

Sophie Manner

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## 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 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 the most popular study location in Sweden. The University offers one of the broadest ranges of degree programmes and courses in Scandinavia, based on cross-disciplinary and cutting-edge research. Because of its wide disciplinary range, interdisciplinary collaborations and engagement with wider society, Lund University is particularly well equipped to meet complex societal challenges. With partner universities in around 70 countries, the University's profile is distinctly international.

Lund University has an annual turnover of more than EUR 830 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.

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

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