Master's Programme in Chemistry, Synthetic and Analytical Chemistry

LUND UNIVERSITY | SWEDEN

- Master of Science in Chemistry
- 2 years, full-time, 120 ECTS credits
- Department of Chemistry
- Lund Campus
- Application deadline: January 2024
- Programme start: August 2024

PROGRAMME OVERVIEW

Are you passionate about producing new molecules and materials, examining the world of chemical compounds or solving environmental problems at the molecular level? If so, this Master's programme could be right for you. After graduation, you can embark on a career in either academia or at a research-intensive company.

The Master's programme provides both theoretical and practical knowledge in analytical, organic, organometallic and coordination chemistry. Some of the areas covered include drug production, food, environmental issues and nanotechnology. You will obtain specialised knowledge in advanced organic synthesis, learn about reaction mechanisms in organometallic compounds and the importance of metals in biological systems. You will obtain ample experience in different chromatography and mass spectrometry methods as well as in modern characterisation methods. The importance of green analytical chemistry for a sustainable society is also emphasised.

As a student you will practice independently planning, conducting and critically evaluating interdisciplinary research projects from a chemical perspective. You will also learn to use scientific literature as well as manage and analyse data in various forms. Teaching takes place on modern premises and in laboratories with advanced equipment. The format of the programme varies and includes lectures, seminars, group exercises, extensive laboratory work, calculation exercises, computer exercises and project work, including oral and written presentations.

The programme has strong ties with research. All of the teaching staff are researchers, and the course content is continuously adapted based on current research. The Department of Chemistry is characterised by a broad spectrum of basic research and applied research, as well as close contact with industry and external research centres. Lund is also home to two unique research facilities – the MAX IV Laboratory and the ESS (European Spallation Source) neutron source, the latter of which is currently being constructed. The facilities offer applications in many areas of chemistry. The language of instruction is English in the Master's programme.

PROGRAMME STRUCTURE

You can influence and plan your study design to a large extent. You will begin the first semester with a course on molecular driving forces and chemical bonding. The recommendation for the next course is advanced analytical chemistry. During the spring semester courses on advanced organic chemistry, organometallic chemistry and coordination chemistry will follow.

In the second academic year you can take more courses depending on the scope of your degree project. The degree project can be worth 30, 45 or 60 credits and is conducted in a research team or at a company. If you decide to do a degree project worth less than the maximum number of credits, you can do a second project. The Master's programme offers the option of doing an internship, which can provide valuable professional contacts during the programme.

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 analytical chemistry (15 ECTS), Advanced organic chemistry (15 ECTS), Coordination chemistry and organometallic chemistry (15 ECTS) and at least one master's degree project (30, 45 or 60 ECTS).

COMPULSORY COURSES: Advanced level courses in chemistry comprising at least 30 ECTS, of which 15 ECTS should be within analytical, organic, organometallic, or coordination chemistry, and a Master's degree project comprising at least 30 ECTS.

CAREER PROSPECTS

The Master's programme provides you with general and subject-specific skills that prepare you for a career in the chemical industry, other related industries and the public sector, or you can continue to doctoral studies. Typical employment in industry includes working as a research and development engineer at an innovative start-up or as a synthetic organic chemist at a large

"The best part about the Master's programme in Synthetical and Analytical Chrmistry is being able to go more into depth with analytical and organic chemistry, which are two areas in chemistry that really interest me. In addition, the other students on my courses have been very friendly so even though I came here without knowing anyone, I made new friends on the course. We come in with different backgrounds in chemistry, which creats a good knowledge-sharing environment where we can learn from each other."

Anette Saaugaard Hansen from Denmark

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pharmaceutical company, for example. Employers have been full of praise for our graduates' laboratory skills.

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 7.5 credits must be in general chemistry, 15 credits in physical chemistry, 15 credits in inorganic chemistry, 22.5 credits in organic chemistry, 15 credits in analytical chemistry. In addition to courses in chemistry, 15 credits in mathematics are required. English Level 6.

How to apply

1. **Apply online:** Go to www.lunduniversity.lu.se/chemistry-synthetic-analytical. 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:** 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.
3. **Pay the application fee (when applicable).**

Selection criteria/additional info

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

Tuition fees

Tuition fee SEK 170 000 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 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 Kemicentrum, 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-synthetic-analytical

Programme Director:
Sophie Manner, sophie.manner@chem.lu.se, +45 (0)46 222 83 63

Lund University was founded in 1666 and is repeatedly ranked among the world's top universities. The University has around 45 000 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.

Learn more at www.lunduniversity.lu.se

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