

NAKEM, Master Programme in Chemistry, 120 credits

Masterprogram i kemi, 120 högskolepoäng

Second-cycle programme requiring previous university studies / Program med akademiska förkunskapskrav och med slutlig examen på avancerad nivå

Decision

The syllabus was approved by Study programmes board, Faculty of Science on 2009-06-11 (N 2009/417) and was last revised on 2026-05-28 by The Education Board of Faculty of Science (U 2026/337). The revised syllabus comes into effect 2026-10-15 and is valid from the autumn semester 2027.

Specialisations

Code	Swedish name	English name	Credits
BIKE	Biochemistry	Biokemi	120 credits
FYKE	Physical Chemistry	Fysikalisk kemi	120 credits
SAKE	Synthetic and Analytical Chemistry	Syntetisk och analytisk kemi	120 credits

Programme description

The programme for a degree of Master of Science specialising in Chemistry comprises 120 credits and leads to a degree of Master of Science (120 credits) with a major in Chemistry.

The programme is based on scholarship and is closely linked to research conducted at the Lund University Faculty of Science. The operations at the faculty uphold academic credibility and good research practice and are arranged to ensure that high standards are attained in courses and study programmes. Furthermore, the operations promote sustainable development, equality between women and men and understanding of other countries and international circumstances. These aspects are integrated in the degree outcomes of the programme.

Second-cycle courses and study programmes in the main field of Chemistry are fundamentally based on the knowledge acquired by students during first-cycle courses and study programmes.

Second-cycle courses and study programmes in the main field of Chemistry involve the acquisition of specialist knowledge, competence and skills in relation to first-cycle courses and study programmes, and in addition to the requirements for first-cycle courses and study programmes shall:

- further develop the ability of students to integrate and make autonomous use of their knowledge,
- develop the students' ability to deal with complex phenomena, issues and situations, and
- develop the students' potential for professional activities that demand considerable autonomy, or for research and development work.

The programme applies a learning perspective, in which students take an active role in the learning process, and consciously and continuously reflect on their learning and development towards the degree outcomes.

Goals

Knowledge and understanding

For a Degree of Master (120 credits) the student shall:

- demonstrate knowledge and understanding in the main field of study, including both broad knowledge of the field and a considerable degree of specialised knowledge in certain areas of the field as well as insight into current research and development work, and
- demonstrate specialised methodological knowledge in the main field of study.

Competence and skills

For a Degree of Master (120 credits) the student shall:

- demonstrate the ability to critically and systematically integrate knowledge and analyse, assess and deal with complex phenomena, issues and situations even with limited information
- demonstrate the ability to identify and formulate issues critically, autonomously and creatively as well as to plan and, using appropriate methods, undertake advanced tasks within predetermined time frames and so contribute to the formation of knowledge as well as the ability to evaluate this work
- demonstrate the ability in speech and writing both nationally and internationally to clearly report and discuss his or her conclusions and the knowledge and arguments on which they are based in dialogue with different audiences, and
- demonstrate the skills required for participation in research and development work or autonomous employment in some other qualified capacity.

Judgement and approach

For a Degree of Master (120 credits) the student shall:

- demonstrate the ability to make assessments in the main field of study informed by relevant disciplinary, social and ethical issues and also to demonstrate awareness of ethical aspects of research and development work
- demonstrate insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used, and
- demonstrate the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning.

Independent project (degree project)

A requirement for the award of a degree of Master (120 credits) is completion by the student of an independent project (degree project) for at least 30 credits in the main field of study. The degree project may comprise less than 30 credits, however no less than 15 credits, if the student has already completed an independent project in the second cycle for at least 15 credits in the main field of study or the equivalent from a programme of study outside Sweden.

Course information

The programme comprises 2 years for a degree of Master (120 credits). The appendix *Programme Structure and course requirements for Master Programme in Chemistry* at the Faculty of Science describes the courses included.

A Degree of Master (120 credits) is awarded after the student has completed the courses required. In addition, the prior award of a Degree of Bachelor of at least 180 credits or a corresponding qualification from abroad is required. To acquire the fundamentally based advanced knowledge and understanding, competence and skills as well as judgement and approach required to meet the learning outcomes for a degree of Master of Science (120 credits) with a major in Chemistry, new knowledge building upon the underlying Bachelor's degree is necessary.

See attachment NAKEM - Programme Structure and course requirements for Master Programme in Chemistry, 120 credits.pdf

Degree

Degree titles

Degree of Master of Science (120 credits)

Main field of study: Chemistry

Naturvetenskaplig masterexamen

Huvudområde: Kemi

Entry requirements and selection method

Entry requirements

Specialisation: Biochemistry

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 biochemistry.

Proficiency in English equivalent to English 6/B from Swedish upper-secondary school.

Specialisation: Physical Chemistry

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.

Proficiency in English equivalent to English 6/B from Swedish upper-secondary school.

or

Bachelor's degree of at least 180 credits or the equivalent, including at least 75 credits in physics and 30 credits in mathematics.

Proficiency in English equivalent to English 6/B from Swedish upper-secondary school.

Specialisation: Synthetic and Analytical Chemistry

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.

Proficiency in English equivalent to English 6/B from Swedish upper-secondary school.

Selection method

Based on grades awarded for previous academic courses in science, engineering and mathematics.

Transition rules

The Faculty Board may decide on the discontinuation of a programme or main field and may also decide, in association with this, on transitional provisions for students who have started these programmes.

Other information

Rules pertaining to grades and examination are stated in the course syllabi approved by the Faculty Board.



FACULTY OF SCIENCE

Appendix 1 for programme syllabus,
NAKEM Master Programme in
Chemistry, 120 credits

Reg. No.
U 2026/337

Date 2026-05-28

Department of Chemistry

Programme Structure and course requirements for Master Programme in Chemistry, 120 credits

The programme comprises two years of full-time studies (120 credits) and leads to a Degree of Master of Science with major in Chemistry, and can be pursued through several specialisations, each with its associated study path.

Specialisations

- Biochemistry
- Physical Chemistry
- Synthetic and Analytical Chemistry

Biochemistry

Elective courses

Elective courses of at least 30 credits.

KEMM57, Advanced Experimental Protein Chemistry, 15 credits
KEMM23, Chemistry: Advanced Biochemistry, 15 credits
KEMM35, Chemistry: Structural Biochemistry, 15 credits

Optional courses

Optional courses between 30 to 60 credits.

Degree Project

Degree project between 30 to 60 credits.

KEMR10, Chemistry: Master's Degree Project, 30 credits

KEMR20, Chemistry: Master's Degree Project, 30 credits

KEMR45, Chemistry: Master's Degree Project, 45 credits

KEMR30, Chemistry: Master's Degree Project, 60 credits

Physical Chemistry**Elective courses**

Elective courses of at least 30 credits.

KEMM29, Chemistry: Molecular Spectroscopy - Methods and Applications, 15 credits

KEMM30, Chemistry: Molecular Driving Forces and Chemical Bonding, 15 credits

KEMM48, Chemistry: Statistical Thermodynamics and Molecular Simulation, 7.5 credits

KEMM57, Chemistry: Magnetic Resonance - Spectroscopy and Imaging, 7.5 credits

KEMM58, Chemistry: Molecular Quantum Mechanics, 7.5 credits

KEMM67, Chemistry: Scattering Methods, 7.5 credits

KEMM87, Chemistry: Advanced Surface and Colloid Chemistry, 15 credits

KEMM20, Chemistry: Medicinal Chemistry, 7.5 credits

Optional courses

Optional courses between 30 to 60 credits.

Degree Project

Degree project between 30 to 60 credits.

KEMR10, Chemistry: Master's Degree Project, 30 credits

KEMR20, Chemistry: Master's Degree Project, 30 credits

KEMR45, Chemistry: Master's Degree Project, 45 credits

KEMR30, Chemistry: Master's Degree Project, 60 credits

Synthetic and Analytical Chemistry**Elective courses**

Elective courses of at least 30 credits.

KEMM21, Chemistry: Advanced Organic Chemistry, 15
KEMM30, Chemistry: Molecular Driving Forces and Chemical Bonding, 15 credits
KEMM52, Chemistry: Chemistry: Magnetic Resonance - Spectroscopy and Imaging,
15 credits
KEMM76, Chemistry: Advanced Analytical Chemistry, 15 credits

Optional courses

Optional courses between 30 to 60 credits.

Degree Project

Degree project between 30 to 60 credits.

KEMR10, Chemistry: Master's Degree Project, 30 credits
KEMR20, Chemistry: Master's Degree Project, 30 credits
KEMR45, Chemistry: Master's Degree Project, 45 credits
KEMR30, Chemistry: Master's Degree Project, 60 credits