



Faculty of Science

## NGNAT, Sciences, 180 credits

*Naturvetenskapligt kandidatprogram, 180 högskolepoäng*

**First cycle degree programme not requiring previous university study /**  
*Program utan akademiska förkunskapskrav och med slutlig examen på grundnivå*

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### Decision

The programme syllabus is established by The Board of Faculty of Science 05-09-2017 (U 2017/281) and most recently amended by Study programmes board, Faculty of Science 25-05-2022 (U 2022/353). The amended syllabus is valid from 25-05-2022, autumn semester 2023.

### Specialisations

Code	Swedish name	English name	Credits
ASTR	Astronomy and Astrophysics	Astronomi och astrofysik	180 credits
BIOL	Biology	Biologi	180 credits
KEMI	Chemistry	Kemi	180 credits
KEMO	Chemistry/Molecular Biology	Kemi/Molekylärbiologi	180 credits
KEYF	Chemistry/Physics	Kemi/Fysik	180 credits
MIHS	Environmental Health	Miljö- och hälsoskydd	180 credits
MIVE	Environmental Science	Miljövetenskap	180 credits
GEOB	Geology	Geologi	180 credits
ENMA	Mathematics	Matematik (undervisning på engelska)	180 credits
MATE	Mathematics	Matematik	180 credits
MEBG	Meteorology and Biogeophysics	Meteorologi och biogeofysik	180 credits
MOBI	Molecular Biology	Molekylärbiologi	180 credits
INES	Physical Geography and Ecosystem Science	Naturgeografi och ekosystemvetenskap	180 credits

ENFY	Physics	Fysik (undervisning på engelska)	180 credits
FYSI	Physics	Fysik	180 credits
FONE	Science with Photons and Neutrons	Naturvetenskap med fotoner och neutroner	180 credits
TEOF	Theoretical Physics	Teoretisk fysik	180 credits

## Programme description

The programme for a degree of Bachelor of Science comprises 180 credits and leads to a degree of Bachelor of Science specialising in one of the main fields of biology, chemistry, environmental science, geology, mathematics, molecular biology, physics, and physical geography and ecosystem science.

The programme is based on scholarship and is closely linked to research conducted at the Lund University Faculty of Science. The activities 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 activities 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.

The programme shall develop:

- the ability of students to make independent and critical assessments,
- the ability of students to identify, formulate and solve problems autonomously, and
- the preparedness of students to deal with changes in working life.

In addition to knowledge and skills in their field of study, students shall develop the ability to:

- gather and interpret information at a scholarly level,
- stay abreast of the development of knowledge, and
- communicate their knowledge to others, including those who lack specialist knowledge in the field.

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.

Appendices 1–8 *Achievement of learning outcomes for a degree of Bachelor of Science with a major in () at the Faculty of Science* describe the disciplinary foundations and links to research of the main fields.

## Goals

### Knowledge and understanding

For a Degree of Bachelor the student shall:

- demonstrate knowledge and understanding in the main field of study, including knowledge of the disciplinary foundation of the field, knowledge of applicable methodologies in the field, specialised study in some aspect of the field as well as awareness of current research issues.

## Competence and skills

For a Degree of Bachelor the student shall:

- demonstrate the ability to search for, gather, evaluate and critically interpret the relevant information for a formulated problem and also discuss phenomena, issues and situations critically
- demonstrate the ability to identify, formulate and solve problems autonomously and to complete tasks within predetermined time frames
- demonstrate the ability to present and discuss information, problems and solutions in speech and writing and in dialogue with different audiences, and
- demonstrate the skills required to work autonomously in the main field of study.

## Judgement and approach

For a Degree of Bachelor the student shall:

- demonstrate the ability to make assessments in the main field of study informed by relevant disciplinary, social and ethical issues
- demonstrate insight into the role of knowledge in society and the responsibility of the individual for how it is used, and
- demonstrate the ability to identify the need for further knowledge and ongoing learning.

### *Independent project (degree project)*

A requirement for the award of a degree of Bachelor is completion by the student of an independent project (degree project) for at least 15 credits in the main field of study.

## Course information

The programme comprises 3 years (180 credits) for a degree of Bachelor. Studies begin with a unified block of basic courses within the selected specialisation. Following this, students can select courses from a range of specialising or broadening profile courses. The programme is completed with an independent project (degree project) of 15 credits. There are recommended study paths for each main field, but students may also design parts of their programme by selecting a certain number of elective courses if they wish. Courses from other faculties may also be included. The degree requirements are specified in Appendices 1–8 *Achievement of learning outcomes for a degree of Bachelor of Science with a major in () at the Faculty of Science*.

### *Grades and assessment:*

The rules for grading and assessment are described in the course syllabi approved by the Faculty Board.

## Degree

## Degree titles

### Degree of Bachelor of Science

Major: Biology

Major: Chemistry

Major: Environmental Science

Major: Geology

Major: Mathematics

Major: Molecular Biology

Major: Physical Geography and Ecosystem Science

Major: Physics

### *Naturvetenskaplig kandidatexamen*

*Huvudområde: Biologi*

*Huvudområde: Fysik*

*Huvudområde: Geologi*

*Huvudområde: Kemi*

*Huvudområde: Matematik*

*Huvudområde: Miljövetenskap*

*Huvudområde: Molekylärbiologi*

*Huvudområde: Naturgeografi och ekosystemvetenskap*

The following requirements must generally be met for students to commence the degree project of 15 credits: at least 75 successfully completed credits in the relevant main field. In addition to the general requirements, students may also be required to have completed specific courses, both within and outside the main field. The specific requirements are stated in the relevant course syllabus for the degree project.

### *Rules applying to degrees in certain main fields:*

**Environmental science:** environmental science is a cross-disciplinary field and includes courses from the social sciences as well as science. Accordingly, the main field of environmental science may include courses in engineering, social sciences or science specialising in environmental science. The course syllabus states whether or not the course is included in the main field.

**Geology:** courses in geoscience may not be included in the degree as courses outside the main field of geology.

**Mathematics:** in addition to mathematics, the main field includes mathematical statistics and numerical analysis. The degree project can address a topic in any of the three disciplines of the field or in the overarching discipline of mathematical modelling.

**Molecular biology:** the main field of molecular biology includes courses in biochemistry, biology focusing on molecular biology or chemical biology and certain courses in bioinformatics or biomedicine (as specified in the course requirements).

## Requirements and Selection method

### Astronomy and Astrophysics

#### Requirements

General and courses corresponding to the following Swedish Upper Secondary School Programs: Chemistry 1, Mathematics 4, Physics 2.

## **Selection method**

Seats are allocated according to: The general average (GPA) of your higher secondary school leaving certificate: 66 %, The Swedish national university aptitude test: 34 %.The University board has decided that applicants with equal merits (in the GPA group) should be separated by the use of a valid result from the Swedish national university aptitude test.

## **Biology**

### **Requirements**

General and courses corresponding to the following Swedish Upper Secondary School Programs: Biology 2, Chemistry 2, Mathematics 4, Physics 1b/1a1+1a2.

### **Selection method**

Seats are allocated according to: The general average (GPA) of your higher secondary school leaving certificate: 66 %, The Swedish national university aptitude test: 34 %.The University board has decided that applicants with equal merits (in the GPA group) should be separated by the use of a valid result from the Swedish national university aptitude test.

## **Chemistry**

### **Requirements**

General and courses corresponding to the following Swedish Upper Secondary School Programs: Biology 2, Physics 2, Chemistry 2 and Mathematics 4.

### **Selection method**

Seats are allocated according to: The general average (GPA) of your higher secondary school leaving certificate: 66 %, The Swedish national university aptitude test: 34 %.The University board has decided that applicants with equal merits (in the GPA group) should be separated by the use of a valid result from the Swedish national university aptitude test.

## **Chemistry/Molecular Biology**

### **Requirements**

General and courses corresponding to the following Swedish Upper Secondary School Programs: Biology 2, Physics 2, Chemistry 2 and Mathematics 4.

### **Selection method**

Seats are allocated according to: The general average (GPA) of your higher secondary school leaving certificate: 66 %, The Swedish national university aptitude test: 34 %.The University board has decided that applicants with equal merits (in the GPA group) should be separated by the use of a valid result from the Swedish national university aptitude test.

## **Chemistry/Physics**

### **Requirements**

General and courses corresponding to the following Swedish Upper Secondary School Programs: Biology 2, Physics 2, Chemistry 2 and Mathematics 4.

### **Selection method**

Seats are allocated according to: The general average (GPA) of your higher secondary school leaving certificate: 66 %, The Swedish national university aptitude test: 34 %.The University board has decided that applicants with equal merits (in the GPA group) should be separated by the use of a valid result from the Swedish national university aptitude test.

## **Environmental Health**

### **Requirements**

General and courses corresponding to the following Swedish Upper Secondary School Programs: Biology 2, Chemistry 2, Mathematics 4, Physics 1b/1a1+1a2.

### **Selection method**

Seats are allocated according to: The general average (GPA) of your higher secondary school leaving certificate: 66 %, The Swedish national university aptitude test: 34 %.The University board has decided that applicants with equal merits (in the GPA group) should be separated by the use of a valid result from the Swedish national university aptitude test.

## **Environmental Science**

### **Requirements**

General and courses corresponding to the following Swedish Upper Secondary School Programs: Biology 2, Chemistry 2, Mathematics 4, Physics 1b/1a1+1a2.

### **Selection method**

Seats are allocated according to: The general average (GPA) of your higher secondary school leaving certificate: 66 %, The Swedish national university aptitude test: 34 %.The University board has decided that applicants with equal merits (in the GPA group) should be separated by the use of a valid result from the Swedish national university aptitude test.

## **Geology**

### **Requirements**

General and courses corresponding to the following Swedish Upper Secondary School Programs: Biology 1, Chemistry 1, Mathematics 4, Physics 1a/1b1+1b2.

### **Selection method**

Seats are allocated according to: The general average (GPA) of your higher secondary school leaving certificate: 66 %, The Swedish national university aptitude test: 34 %.The University board has decided that applicants with equal merits (in the GPA group) should be separated by the use of a valid result from the Swedish national university aptitude test.

## **Mathematics**

### **Requirements**

General and courses corresponding to the following Swedish Upper Secondary School Programs: Mathematics 4 or Mathematics D.

### **Selection method**

Seats are allocated according to: The general average (GPA) of your higher secondary school leaving certificate: 66 %, The Swedish national university aptitude test: 34 %.The University board has decided that applicants with equal merits (in the GPA group) should be separated by the use of a valid result from the Swedish national university aptitude test.

## **Mathematics**

### **Requirements**

General and courses corresponding to the following Swedish Upper Secondary School Programs: Mathematics 4 or Mathematics D.

### **Selection method**

Seats are allocated according to: The general average (GPA) of your higher secondary school leaving certificate: 66 %, The Swedish national university aptitude test: 34 %.The University board has decided that applicants with equal merits (in the GPA group) should be separated by the use of a valid result from the Swedish national university aptitude test.

## **Meteorology and Biogeophysics**

### **Requirements**

General and courses corresponding to the following Swedish Upper Secondary School Programs: Chemistry 1, Mathematics 4, Physics 2.

### **Selection method**

Seats are allocated according to: The general average (GPA) of your higher secondary school leaving certificate: 66 %, The Swedish national university aptitude test: 34 %.The University board has decided that applicants with equal merits (in the GPA group) should be separated by the use of a valid result from the Swedish national university aptitude test.

## **Molecular Biology**

### **Requirements**

General and courses corresponding to the following Swedish Upper Secondary School Programs: Biology 2, Chemistry 2, Mathematics 4, Physics 1b/1a1+1a2.

### **Selection method**

Seats are allocated according to: The general average (GPA) of your higher secondary school leaving certificate: 66 %, The Swedish national university aptitude test: 34 %.The University board has decided that applicants with equal merits (in the GPA

group) should be separated by the use of a valid result from the Swedish national university aptitude test.

## **Physical Geography and Ecosystem Science**

### **Requirements**

General and courses corresponding to the following Swedish Upper Secondary School Programs: Biology 1, Physics 1, Chemistry 1, Mathematics 4 or Biology 2, Physics 2, Mathematics 4 or Biology 2, Chemistry 2, Mathematics 4 or Physics 2, Chemistry 2, Mathematics 4.

### **Selection method**

Seats are allocated according to: The general average (GPA) of your higher secondary school leaving certificate: 66 %, The Swedish national university aptitude test: 34 %.The University board has decided that applicants with equal merits (in the GPA group) should be separated by the use of a valid result from the Swedish national university aptitude test.

## **Physics**

### **Requirements**

General and courses corresponding to the following Swedish Upper Secondary School Programs: Chemistry 1, Mathematics 4, Physics 2.

### **Selection method**

Seats are allocated according to: The general average (GPA) of your higher secondary school leaving certificate: 66 %, The Swedish national university aptitude test: 34 %.The University board has decided that applicants with equal merits (in the GPA group) should be separated by the use of a valid result from the Swedish national university aptitude test.

## **Physics**

### **Requirements**

General and courses corresponding to the following Swedish Upper Secondary School Programs: Chemistry 1, Mathematics 4, Physics 2.

### **Selection method**

Seats are allocated according to: The general average (GPA) of your higher secondary school leaving certificate: 66 %, The Swedish national university aptitude test: 34 %.The University board has decided that applicants with equal merits (in the GPA group) should be separated by the use of a valid result from the Swedish national university aptitude test.

## **Science with Photons and Neutrons**

### **Requirements**

General and courses corresponding to the following Swedish Upper Secondary School Programs: Biology 2, Physics 2, Chemistry 2 and Mathematics 4.



## **Selection method**

Seats are allocated according to: The general average (GPA) of your higher secondary school leaving certificate: 66 %, The Swedish national university aptitude test: 34 %. The University board has decided that applicants with equal merits (in the GPA group) should be separated by the use of a valid result from the Swedish national university aptitude test.

## **Theoretical Physics**

### **Requirements**

General and courses corresponding to the following Swedish Upper Secondary School Programs: Chemistry 1, Mathematics 4, Physics 2.

### **Selection method**

Seats are allocated according to: The general average (GPA) of your higher secondary school leaving certificate: 66 %, The Swedish national university aptitude test: 34 %. The University board has decided that applicants with equal merits (in the GPA group) should be separated by the use of a valid result from the Swedish national university aptitude test.

## **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 degree programmes.

## **Other information**

### *Selection for specialisations taught in English*

Pursuant to a decision by the Swedish Higher Education Authority on 21 December 2015, supported by Chapter 7 Section 15 of the Higher Education Ordinance, Lund University may use grades only as a selection criterion in the early admission round with an application deadline on 15 January for the specialisations of the Bachelor's programme in Science taught in English. In the national admission round with an application deadline on 15 April, places will be allocated in accordance with Chapter 7 Section 13 of the Higher Education Ordinance (1993:100). Fifty per cent of the places on the programmes will be allocated in the early admission round (15 January) and fifty in the national admission round. The Higher Education Authority decision applies to the admissions from the autumn semester 2016 up to and including the autumn semester 2020.