Compulsory and elective courses for Bachelor's program

Requirements for the Degree of Bachelor of Science in Physics, 180 credits

There are several different possibilities, depending on your specialisation:

Physics, Theoretical Physics, Astronomy, Chemistry / Physics, Meteorology.

The study program outlined below applies to students who began their studies in the spring of 2015 or later.

The courses are divided into four packages:

1. Courses compulsory to all specialisations
2. Specialised compulsory courses
3. Optional courses
4. Diploma work

Courses compulsory for all specialisations:

REQUIRED COURSES for all specialisations 97.5 credits:

FYSA01 Physics 1 General Physics, 30 credits
MATA21 Calculus, 15 Credits
MATA22 Linear Algebra 1, 7.5 credits
NUMA01 Calculation Programming with Python, 7.5 credits
MATB21 Multivariable 1, 7.5 credits
MATB22 Linear Algebra 2, 7.5 credits
FYSB11 Basic Quantum Mechanics, 7.5 credits
FYSB12 Basic statistical physics and the quantum statistics, 7.5 credits
FYSC11 Atomic and Molecular Physics, 7.5 credits

Specialised compulsory courses and optional courses:

Depending on your specialisation, you select one of the following packages. The
latter can be picked freely among all academic courses in Lund or elsewhere. Note! You have to pick one of these specialisations!

**Option 1: The Physics and Astronomy specialisations:**

*Specialised compulsory courses 30 credits*

FYSC12 [Nuclear Physics and Reactors](#), 7.5 credits  
FYSC13 [Solid State Physics](#), 7.5 credits  
FYSC14 [Particle Physics, Cosmology and Accelerators](#), 7.5 credits  
FYTB13 [Electromagnetic Field Theory](#), 7.5 credits  

*Optional courses 37.5 credits*

**Option 2: The Chemistry/Physics specialisation:**

*Specialised compulsory courses 52.5 credits*

KEMA20 [General Chemistry](#), 15 credits  
KEMA01 [Organic Chemistry - Basic Course](#), 7.5 credits  
KEMA03 [Biochemistry - Basic Course](#), 7.5 credits  
FYSC12 [Nuclear Physics and Reactors](#), 7.5 credits  
FYSC13 [Solid State Physics](#), 7.5 credits  
FYSC14 [Particle Physics, Cosmology and Accelerators](#), 7.5 credits  

*Optional courses 15 credits*

**Option 3: The Meteorology specialisation:**

*Specialised compulsory courses 60 credits*

NGEA21 [Climate System](#), 15 hp  
NGEA16 [Dynamic Meteorology and Numerical Weather Forecasting](#), 7.5 credits  
FYTA14 [Fluid Dynamics](#), 7.5 credits  
METD01 [Operations Project in the Weather Chart Analysis and Forecasts](#), 15 credits  
NGEA17 [Synoptic / mesoscale meteorology](#), 7.5 credits  
METN01 Atmospheric Chemistry, 7.5 credits  

*Optional courses 7.5 credits*

**Option 4: The Theoretical Physics specialisation:**

Compulsory and elective courses for Bachelor's program [Here](http://www.fysik.lu.se/index.php?id=137200)
Specialised compulsory courses 30 credits

FYTB13 Electromagnetic Field Theory, 7.5 credits
FYTB14 Analytical mechanics and special relativity, 7.5 credits
FYSC13 Solid State Physics, 7.5 credits

and one of the courses
FYSC12 Nuclear Physics and Reactors, 7.5 credits
FYSC14 Particle Physics, Cosmology and Accelerators, 7.5 credits

Optional courses 37.5 credits

Diploma work

Diploma work, 15 hp.

If the thesis work will be carried out at the Department of Physics:
FYSK02 Physics, Bachelor Degree, 15 hp.

If the thesis carried out at the Department of Astronomy and Theoretical Physics:
FYTK02 Theoretical Physics: Bachelor Degree, 15 hp, or
ASTK02 Astronomy: Bachelor Degree, 15 hp.

General requirements for Bachelor's degree

For Bachelor of Science degree you need to pass at least 90 hp of courses in the main field (in this case Physics) and at least 30 hp outside this field. The latter is automatically met by the required 45 credits of mathematics.