



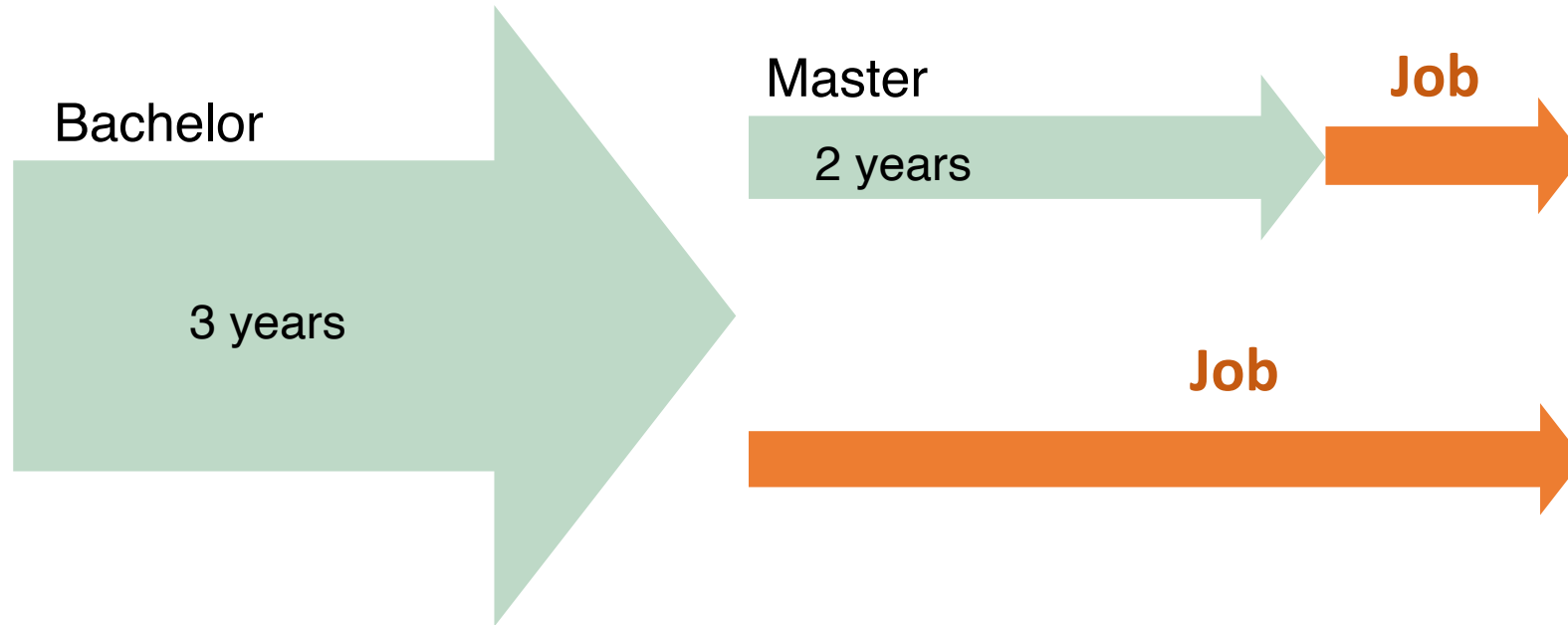
LUNDS
UNIVERSITET

Study Physics in Lund

MARTIN MAGNUSSON FYSISKA INSTITUTIONEN LUNDS UNIVERSITET



Overview of the education structure



BSc programs

- Physics
- Theoretical physics
- Astrophysics / Astronomy

5 year degree programs

- Engineering physics / nano
- Medical physics
- Teacher physics + math

Bachelor education – 180 hp

Mandatory courses, 127.5 hp



- All mandatory courses should be taken before the thesis project
- plan courses for exchange studies

Optional courses, 37.5 hp



- Think about:
specialization, soft skills, inspiration
at least 7.5 hp physics here

Bachelor project, 15 hp



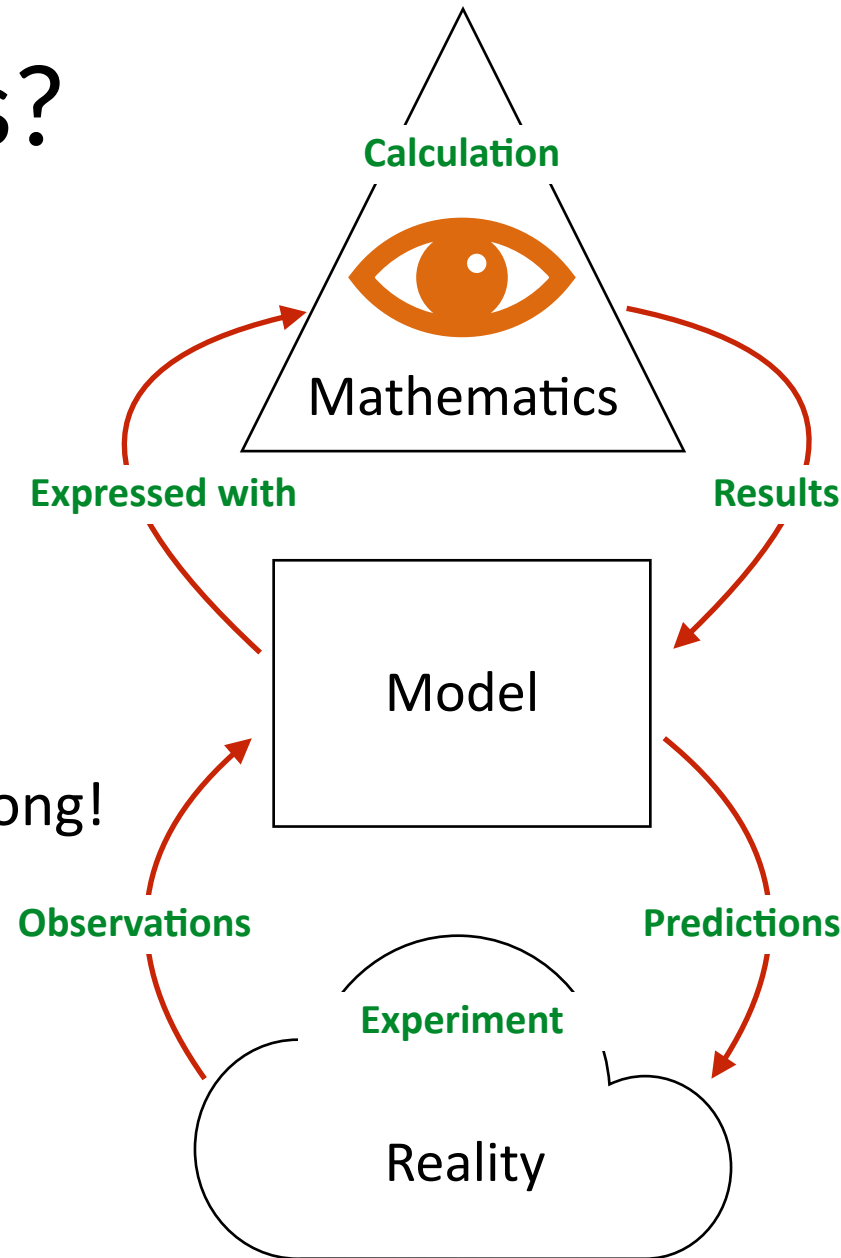
- First scientific essay / study

What is Physics?

- The math is always right
- Trust the math!

- Bring out the essentials
- Disregard details
- Different refinement
- Sometimes the model is wrong!

- Complex
- Changing
- Inexact

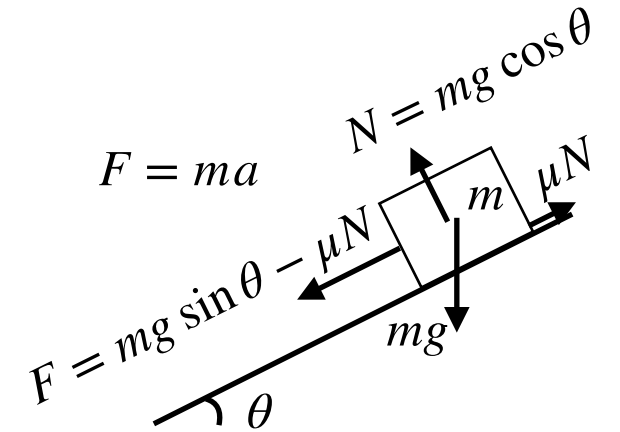


$$a = \frac{dv}{dt} = \frac{d^2x}{dt^2}$$

$$v = \int a \, dt = \frac{F}{m} t$$

$$v(t) = gt(\sin \theta - \mu \cos \theta)$$

$$x(t) = \frac{gt^2}{2}(\sin \theta - \mu \cos \theta)$$



OPTION 1 – a flavor of physics

➤ **FYSB22 Basic Quantum Mechanics (7.5 hp)**

➤ Fall Period 2 *(from HT27 called FYSB32)*

Requires ≥ 60 hp
in mathematics...

➤ **FYSC20 Electromagnetism (7.5 hp)**

➤ Fall Period 2 and Spring Period 2

(from VT28 called FYSC30 and given only Spring Period 1)

Requires ≥ 75 hp
in mathematics...

➤ **FYTB14 Classical Mechanics and Special Relativity (7.5 hp)**

➤ Fall Period 1 *(from VT28 Spring Period 2)*

Requires ≥ 75 hp
in mathematics...

... including specified courses

OPTION 2 – foundations of physics

- **Start from the beginning on the BSc program**
- **Take courses up to FYSB level, 45 hp**
- **Done in parallel with your other math courses**



OPTION 3 – a physics degree

- **Start from the beginning on the BSc program**
- **Take the whole BSc program**
- **You already have most or all of the math**



Current BSc program

Fall

Year 1

MATA31 Mathematics: Analysis in One Variable, (15 hp)

MATA32 Mathematics: Linear Algebra 1 (7.5 hp)

NUMA01 Numerical Analysis: Computational Programming with Python, (7.5 hp)

Year 2

MATB21 Mathematics: Analysis in Several Variables 1 (7.5 hp)

MATB32 Mathematics: Linear Algebra 2 (7.5 hp)

FYSB21 Physics: Mathematical Methods for Vibrations, Waves and Diffusion (7.5 hp)

FYSB22 Physics: Basic Quantum Mechanics, (7.5 hp)

Last time HT26

Year 3

FYSC23 Physics: Solid State Physics (7.5 hp)

FYTB14 Classical mechanics and special relativity (7.5 hp)

FYSC20 Electromagnetism (7.5 hp)

Last time HT27

Semester 5 can be used for exchange studies

Spring

FYSA22 Physics: Introduction to University Physics, with Mechanics (7.5 hp)

FYSA23 Physics: Introduction to University Physics, with Electricity (7.5 hp)

FYSA13 Physics: Introduction to University Physics, with Optics, Waves and Quantum Physics (7.5 hp)

FYSA14 Physics: Introduction to University Physics, with thermodynamics, climate, and experimental methods (7.5 hp)

Last time VT26

FYSB23 Physics: Basic Statistical Physics and Quantum Statistics (7.5 hp)

FYSB24 Physics: Atomic and Molecular Physics (7.5 hp)

FYSC24 Physics: Particle Physics, Cosmology and Accelerators (7.5 hp)

FYSC22 Physics: Nuclear Physics and Reactors (7.5 hp)

Last time VT27

FYSK04 Bachelor degree project (15 hp half speed)

FYSC23 Physics: Solid State Physics (7.5 hp)

FYSK04 Bachelor degree project (15 hp half speed)

FYSC20 Electromagnetism (7.5 hp)

Last time VT28

New Program ENFY/TEFY/ASTR

[https://
canvas.education.lu.se/
courses/
23414/
pages/new-
version-of-
the-
bachelor-
programme
-starting-
ht2026](https://canvas.education.lu.se/courses/23414/pages/new-version-of-the-bachelor-programme-starting-ht2026)

Term 1 HT			Term 2 VT	
FYSA30 Light and matter			FYSA33 Electricity & Magnetism	FYSA35 Mechanics
MATA32 Algebra + Vector				
MATA31 One Dim Analysis, 15hp			MATB32 LinAlg	NUMBxx Programming concepts with Python
Term 3 HT			Term 4 VT	
FYSB31 Waves & Fluids	FYSB32 Basic Quantum Mechanics		FYSC30 Electromagnetism	FYSC32 Nuclear
		FYSC34 Particles, Cosmol. & Accel.		
MATBxx Multivariable calculus & vector analysis for Physicists	FYSB33 Thermo-dyn&Stat.Physics		FYSC31 Atomic & molecular	FYSC35 Analyt. Mec. & Relativity
Term 5 HT			Term 6 VT	
FYSC33 Solid State	Elective FYS/FYT/AST		FYSK04 Bachelor Thesis, 15hp	
ASTC12 Astro	AST <small>choose from several</small>		elective	Double FYSC33
FYSN27 Quant. Mech.	MASB13 Mathem. Statistics		Double ASTC12 cost?	Remaining FYSC32/34/35

2
of
3

Mandat. Math. courses

Mandat. Phys. courses

relev. ASTR

elective with recommendation

Master programs in physics, 120 hp

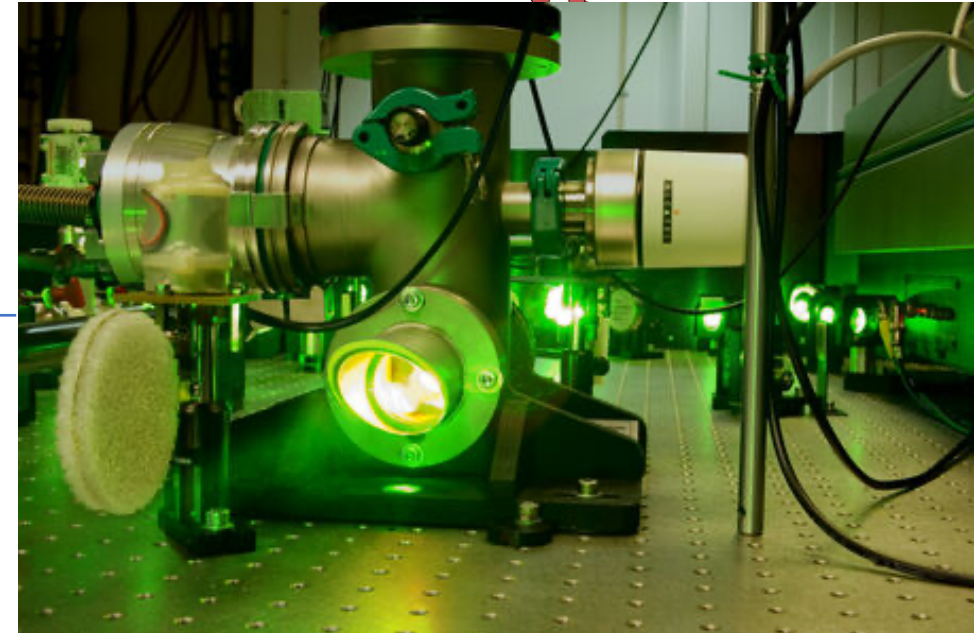
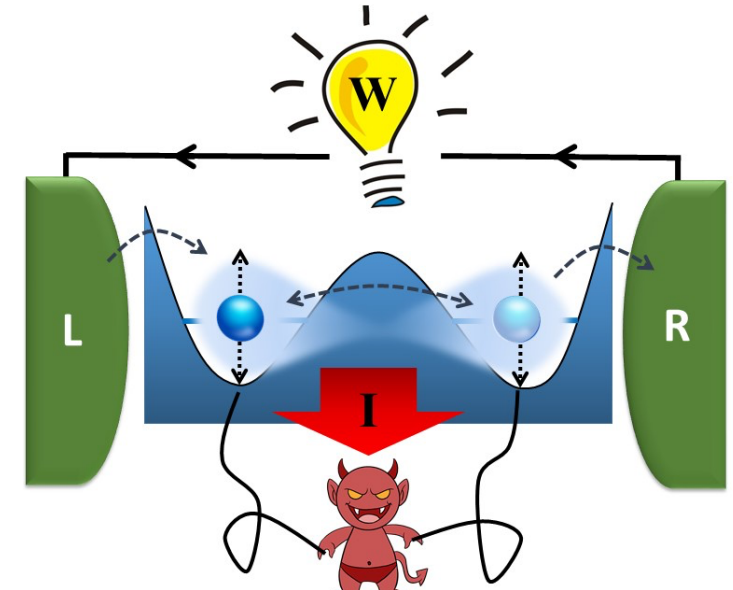
- General Physics
- Materials Science
- Exp. Particle and Nuclear Physics
- Theoretical Physics
- X-ray and Neutron Science
- Quantum science and technology
- Astrophysics

-
- Nanoscience
 - Photonics

Given by LTH

Require 90 hp
physics

Require 40 hp
physics



Elective courses

- **Some elective courses are possible to take without a physics degree**
- **Examples**
 - MAXC21, Photon and Neutron Production for Science (7.5 hp) Spring p. 1
 - FYTA14: Fluid Dynamics (7.5 hp) Spring p. 2
 - ASTC12 Astrophysics of stars (7.5 hp) Fall p. 1
 - ASTC11 Astrobiology - Conditions and possibilities for life in the Universe (7.5 hp) Fall p. 2
 - ... search and ye shall find!

How to find courses

<https://www.fysik.lu.se/en/education/courses>


To Lund UniversityLibrary of ScienceIntranet (Lucat log-in)

Department of Physics

Faculties of Engineering & Science

Swedish websiteListen

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Newly admitted student

Bachelor's degree programme

Master's degree programmes >

Incoming exchange students >

Courses ▾

Courses at bachelor's level

Courses at master's level

Courses at LTH

Course analyses and evaluations

Courses

We offer a wide variety of courses in physics. Most of our courses at the Bachelor's level and all courses at the Master's level are taught in English.

The academic year is divided into an autumn and a spring semester. One semester of full-time studies corresponds to 30 credits. Each semester is divided into two 15-credit periods. Courses of 7.5 credits are either offered during the first or the second part of the period.

[Read more about degrees and academic credits on the Lund University international website.](#)

Academic calendar 2022–2023 ▾


Courses at bachelor's level ⓘ

The language of instruction in our courses at Bachelor's level is English

🌐 Denna sida på svenska

<https://www.lunduniversity.lu.se/admissions>

Current studentsAlumniStaff websiteLibraries websiteAcademic Calendar



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Admissions

Bachelor's and Master's studies

Programmes and courses A–Z

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Application and admission FAQs



Programmes by subject area

[Architecture and design](#)

The team at Physics in Lund

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Study counselling:

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Web-page with contact info:

- <https://www.fysik.lu.se/en/education>

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- Andreas Wacker (deputy)
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BSc program coordinator:

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