



# TB0025 Physics for Technical Preparatory Year, online with meetings on Campus II 18.0 credits

Fysik för basår, distans med campusträffar II

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

## Establishment

The official course syllabus is valid from and the spring semester 2022 according to a decision by the Vice President for Education: V-2022-0012. Decision date: 18/01/2022

## Decision to discontinue this course

The course is discontinued at the expiration of the spring semester 2024 according to a decision by the Vice President for Education: V-2022-0012. Decision date: 18/01/2022 The course is given for the last time during the spring semester 2022. Final opportunity for examination in the course will be given during the spring semester 2024. The examination in the course is carried out as written examination and labs. At least two examination dates per academic year are offered until and including the spring semester 2024. For information about when examination is given, when exam registration is possible and for exam registration please refer to the KTH web. Questions are referred to the Department of Sustainable production development via [service-hpu@kth.se](mailto:service-hpu@kth.se) Possibility to carry out labs is given during the spring semesters of 2023 and 2024. For application to labs and information about when the labs are given, the student should contact the Department of sustainable development in production via [service-hpu@kth.se](mailto:service-hpu@kth.se), no later than on the first day of current current spring semester.

## Grading scale

A, B, C, D, E, FX, F

## Education cycle

Pre-university level

## Specific prerequisites

## Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

## Intended learning outcomes

General goals

The course should promote a natural science perspective and give an understanding of basic physics concepts and relationships and give a good basis for further studies within physics and technical subjects that are included in the 3- and 5-year engineering programmes.

After passing the course, the student should be able to:

- Carry out, describe, analyse and present experiments to examine physical phenomena which are discussed in the course.
- Apply basic physics models and concepts to identify, analyse and solve physics problems within the scope of the course content and report the solutions in a structured way.

## Course contents

COURSE UNIT A: TEN A

- Projectile motion, circular motion, electric fields, potential, the capacitor, magnetic fields, induction, alternating current.

COURSE UNIT B: TEN B

- Mechanical waves, electromagnetic waves, reflection, refraction and interference, oscillatory motion, photoelectric effect, atoms and quantum mechanics, the atomic nucleus and radioactivity, relativistic effects.

Laboratory work: LAB1

Includes course units A and B.

## Examination

- LAB1 - Laboratory work, 2.0 credits, grading scale: P, F
- TENA - Written exam, 8.0 credits, grading scale: A, B, C, D, E, FX, F
- TENB - Written exam, 8.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

## Other requirements for final grade

During the course, approved oral and/or written presentations of selected assignments may be required

For final grade, it is required that all examination items are passed. Final grades are based on the total number of points from both written examinations.

## Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.