TB0023 Chemistry for Technical Preparatory Year, online with meetings on campus I 9.0 fup

Kemi för basår, distans med campusträffar I

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 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: 18/01/2022The course was given for the last time during the autumn semester 2021. 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.sePossibility to carry out labs is given during the autumn semesters of 2022 and 2023. For application to labs and information about when the labs are given, the student should contact the Department of Sustainable production development via service-hpu@kth.se, no later than on the first day of current autumn 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

- Laboratory exercises
  Be able to carry out experimental studies on parts of the course content with satisfactory precision and in a safe and environmentally satisfactory way, and process, report and interpret results and give an account of this, both orally and in writing.
  (Intended learning outcome #1 is assessed in the course item ”Laboratory work” .)
- Models
  Understand and explain the chemical and physical properties of different matter, based on models of the structure of the atom and substances and by means of the periodic system.(Intended learning outcome #2 is assessed in the course item ”Written exam”.)
- Reactions
  Have knowledge of different types of chemical reactions and be able to write balanced chemical equations for these.
  (Intended learning outcome #3 is assessed in the course item ”Written exam”.)
- Calculations
  Be able to carry out chemical calculations for substances in different aggregation forms and solutions and for chemical reactions.
  (Intended learning outcome #4 is assessed in the course item ”Written exam” .)

Course contents

- Models and theories of the structure and classification of matter
- Chemical binding and its effect on for example existence, properties and fields of use for organic and inorganic substances.

Reactions and changes

- Acid-base reactions including the notation of pH and the buffer effect.
- Redox reactions including electrochemistry.
- Precipitation reactions.
- Energy conversion at phase transformations and chemical reactions.

Stoichiometry

- Interpretation and writing of formulae for chemical compounds and reactions
- Amount of substance proportions, concentrations, limiting reagents and yield at chemical reactions.

Analytical Chemistry

- Qualitative and quantitative methods for chemical analysis, for example reagent and titration.

Examination

- LAB1 - Laboratory work, 2.0 fup, grading scale: P, F
- TENA - Written exam, 7.0 fup, 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

Final grades are given if all examination items are passed. The final grade is based on the points in the written examination.

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.