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

On 06/10/2020, the Vice President for Education has decided to establish this official course syllabus to apply from autumn semester 2020, registration number: V-2020-0438.

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 safe and environmental perspective 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 ”Lab” .)
- 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 ”Examination”.)
- 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 ”Examination”.)
- Calculations
  Be able to carry out chemical calculations for substances in different aggregation forms and solutions and for chemical reactions.
  (Intended learning outcome #2 is assessed in the course item ”Examination” .)

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 parts 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.