



# LTH

FACULTY OF  
ENGINEERING

*Course syllabus*

## Tekniskt basår: Kemi 1 Pre-University Course in Technical Sciences: Chemistry 1

**TBAA31, 9 credits, G1 (First Cycle)**

**Valid for:** 2023/24

**Faculty:** Faculty of Engineering, LTH

**Decided by:** PLED TB

**Date of Decision:** 2023-04-19

### General Information

**Compulsory for:** TNB1-TEBA, TNB1-NABA

**Language of instruction:** The course will be given in Swedish

### Aim

The purpose of the course is to complement an upper secondary school education in Chemistry 1.

### Learning outcomes

*Knowledge and understanding*

For a passing grade the student must

Does not exist in this form.

*Competences and skills*

For a passing grade the student must

Does not exist in this form.

*Judgement and approach*

For a passing grade the student must

Does not exist in this form.

# Contents

## Chemistry 1, Part a

### *Materials and chemical bonding*

- Models and theories of the structure and classification of matter.
- Chemical bonding and its impact on e.g. the occurrence, properties and application areas of organic and inorganic substances.

### *Stoichiometry*

- Understanding and writing formulae for chemical compounds and reactions.
- Substance relationships, concentrations, limiting reactants, and exchanges in chemical reactions.

### *Reactions and changes*

- Acid-base reactions, including the concept of pH, buffer effects, and titration.
- Precipitation reactions.

## Chemistry 1, Part b

### *Reactions and changes*

- Redox reactions, including electrochemistry
- Energy transformations in phase transitions and chemical reactions

### *Analytical chemistry*

- Qualitative and quantitative methods of chemical analysis, e.g. chromatography.

### *Thermochemistry*

- Thermal energy, heat capacity, phase transition.
- Bond energy, enthalpy, Hess's Law.

# Examination details

**Grading scale:** UG - (U,G) - (Fail, Pass)

**Assessment:** Written exam and passed laboratory works.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

## Parts

**Code:** 0121. **Name:** Written Exam, Part a.

**Credits:** 6. **Grading scale:** UG. **Assessment:** Written examination.

**Code:** 0221. **Name:** Laboratory Works, Part a .

**Credits:** 1. **Grading scale:** UG. **Assessment:** Passed laboratory works.

**Code:** 0321. **Name:** Written Exam, Part b.

**Credits:** 2. **Grading scale:** UG. **Assessment:** Written examination.

**Code:** 0421. **Name:** Laboration Works, Part b.

**Credits:** 0. **Grading scale:** UG. **Assessment:** Passed laboratory works.

## Admission

**The number of participants is limited to:** No

## Reading list

- Andersson m fl: Gymnasiekemi 1. Liber, 2012, ISBN: 9789147085576.

## Contact and other information

**Course coordinator:** Ia Rosenlind, [ia.rosenlind@food.lth.se](mailto:ia.rosenlind@food.lth.se)

**Course homepage:** <http://www.lth.se/utbildning/tekniskt-basaar/>

**Further information:** The scope for this course is expressed in access education credits (fup).