

SYLLABUS

Introduction to High Temperature Processes 7.5 credits Q0046B

Introduktion till högtemperaturprocesser

Course syllabus admitted: Spring 2015 Sp 3 - Spring 2016 Sp 4

**DECISION DATE
2014-11-04**

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Introduktion till högtemperaturprocesser

First cycle, Q0046B

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	G U 3 4 5	Processmetallurgi	Chemical Engineering

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language

Selection

The selection is based on 1-165 credits.

Examiner

Jörgen Andersson

Course Aim

After having concluded the course, the student should be able to:

- understand the meaning of and apply fundamental metallurgical concepts in production of the most common metals
- describe and explain the common unit operations in metallurgical high-temperature processes
- understand the meaning of and be able to explain metallurgical process systems
- understand the meaning of and be able to account for the production of various metallic materials
- use both Swedish and English terminology relevant to the topic

Contents

- Principles of pyrometallurgy
- Principles of hydrometallurgy
- Principles of electrometallurgy
- Reduction processes in iron production
- Reactions in the blast furnace
- Direct reduction processes
- Steelmaking. Modern oxygen steelmaking processes, Electric arc furnace, Induction furnace
- Ladle furnace and refining
- Aluminium production
- Copper production
- Zinc production
- Silicon production
- Energy, environment and recycling

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

Lectures, project assignment, problem solving sessions, visit to metallurgical process plants

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. Written examination 4.5 credit, home assignments 2 credits, study visit 1 credit

Literature. Valid from Spring 2015 Sp 3

Course offered by

Department of Civil, Environmental and Natural Resources Engineering

Items/credits

Number	Type	Credits	Grade
0001	Written exam	4.5	G U 3 4 5
0002	Assignment reports	2	U G#
0003	Study visit	1	U G#

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Eva Gunneriusson 2014-11-04

Syllabus established

by Eva Gunneriusson 2014-02-11