

**SYLLABUS**

# **Fire Exposed Structural Elements 7.5 credits S0007B**

**Brandutsatta konstruktionselement**

**Course syllabus admitted: Spring 2019 Sp 3 - Present**

DECISION DATE  
**2018-02-13**

# Fire Exposed Structural Elements 7.5 credits S0007B

## Brandutsatta konstruktionselement

### First cycle, S0007B

<b>Education level</b>	<b>Grade scale</b>	<b>Subject</b>	<b>Subject group (SCB)</b>
First cycle	G U 3 4 5	Brandteknik	Building Technology

## 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 and Physics 1 - F0004T, Fire dynamics I - S0003B and Fire dynamics II - S7002B

## Selection

The selection is based on 1-165 credits.

## Examiner

Alexandra Byström

## Course Aim

The overall aim of the course is to obtain understanding regarding

- fundamental material properties during fire conditions, and response of constructions exposed to fires
- the basics of design of construction elements and simple constructions with respect to fire

After the course the students shall:

- be oriented in building construction
- be able to select and master fundamental design methods for design of load bearing constructions
- have acquired a general education on building construction regarding concepts, constructions, load bearing performance in case of fire, building fire protection, and evacuation in case of fire
- be informed on fundamental material properties under fire exposure
- understand the basic requirements on constructions exposed to fire
- understand the basics for design and dimensioning of fire exposed construction elements under tensile, compressive, and bending loads

## Contents

Material data is studied for building materials at elevated temperatures, as well as the basic principles of the behavior of constructions exposed to fire. The later part of the course handle how the Eurocodes, which are adapted in the construction regulation of Boverket, shall be applied for determining critical temperatures and critical loads on unprotected columns and beams, as well as for dimensioning of fire protection of columns and beams.

## Realization

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

The course consists of lectures, assignments, laboratory exercises. The course end with a written exam with differentiated grades. In order to obtain a final grade it is also required that the assignments and lab reports are approved.

## 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 with differentiated grades, assignments and lab reports. In order to write the exam it is required that the assignments are approved.

## Overlap

The course S0007B is equal to S0004B

## Literature. Valid from Spring 2019 Sp 3

## Course offered by

Department of Civil, Environmental and Natural Resources Engineering

## Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0001	Written exam	G U 3 4 5	4.5	Mandatory	S17	
0002	Assignment	U G#	3	Mandatory	S17	

## 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 Assistant Director of Undergraduate Studies Eva Gunneriusson, Department of Civil, Environmental and Natural Resources Engineering 2018-02-13

## Syllabus established

by Eva Gunneriusson 2016-06-13