

SYLLABUS

Introduction to FEM 7.5 credits B7002B

Introduktion till FEM

Course syllabus admitted: Autumn 2017 Sp 1 - Present

**DECISION DATE
2017-06-27**

Introduction to FEM 7.5 credits B7002B

Introduktion till FEM

Second cycle, B7002B

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	G U 3 4 5	Konstruktionsteknik	Building Technology

Entry requirements

Calculus, differential equations. Matrix algebra. Basic knowledge of strength of materials and structural mechanics, displacement method and energy principles. For example B7004B Structural Mechanics I.

Selection

The selection is based on 30-285 credits

Examiner

Naveed Iqbal

Course Aim

To give basic understanding of the finite element method. To show how the method can be applied to some engineering problems.

You should be able to apply:

- Element analysis
- Structural analysis

You should know:

- Strong and weak form.

You should understand:

- Boundary conditions

You should know about:

- Derivation of equations

Contents

Derivation of the basic mathematical relations. Heat flow and elasticity problems, especially for beams and plates, are studied in detail. Assignment: Two assignments and 4-5 hand in exercises are part of the course

Realization

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

The teaching consists of lectures, exercises and assignments. Assignments are compulsory.

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 exam with graded marks (U, 3, 4, 5) Completed assignments

Transition terms

1000

Literature. Valid from Autumn 2007 Sp 1

Ottosen, Petersson; Introduction to the Finite Element Method, Prentice Hall

Course offered by

Department of Civil, Environmental and Natural Resources Engineering

Items/credits

Number	Type	Credits	Grade
0001	Written exam	3	G U 3 4 5
0002	Assignments	4.5	U G#

Last revised

by Assistant Director of Undergraduate Studies Eva Gunneriusson, Department of Civil, Environmental and Natural Resources Engineering 2017-06-27

Syllabus established

The plan is established by the Department of Civil and Environmental Engineering 2007-01-31 and is valid from H07.