

**SYLLABUS**

# **Applied FEM 7.5 credits S7001B**

**Tillämpad FEM**

**Course syllabus admitted: Spring 2016 Sp 3 - Present**

**DECISION DATE  
2015-11-04**

# Applied FEM 7.5 credits S7001B

## Tillämpad FEM

### Second cycle, S7001B

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	G U 3 4 5	Väg- och vattenbyggnad	Civil Engineering

## Entry requirements

A basic understanding in structural design and FiniteElement Method.

## Selection

The selection is based on 30-285 credits

## Examiner

Ove Lagerqvist

## Course Aim

The aim of the course is to introduce students to Finite Element modelling of various structural problems and to proper interpretation of FE results. Knowledge of engineering methods for problem solving, is required for the discussion of results obtained by commercial codes.

## Contents

The course starts with basic introduction to geometry modelling or so called pre-processing. Students can choose three of four possible areas of structural mechanics to deal with: elastic-static analysis, elastic dynamic analysis, non linear analysis of steel and concrete. Commercially available FEM-programs will be used: ABAQUS (or similar) for calculation and FEMGEN/VIEW for pre-processing (and post-processing). A basic of our Intranet and practical use of various standards for computer communication (telnet, ftp,..) will be explained.

## Realization

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

One numerical example within each area will be presented. After each numerical example is explained the students will obtain a compulsory assignment with specific questions and links to references needed. Assignments should be solved by groups consisting of two students. One final assignment gives each student the opportunity to chose problem and level of difficulty.

## 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. All assignments have to be written in a form of short technical reports using MSWord which will be published on institution's web server where all assignments are presented. The final project is solved individually, be each student. The grades are individual and based on achievements during the entire course.

## Overlap

The course S7001B is equal to ABS120

## Literature. Valid from Autumn 2007 Sp 1

All available on the intranet.

## Course offered by

Department of Civil, Environmental and Natural Resources Engineering

## Items/credits

Number	Type	Credits	Grade
0001	Project assignments	3.8	U G#
0002	Seminar	3.7	U G#

## Last revised

by Eva Gunneriusson 2015-11-04

## Syllabus established

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