Hochschule Konstanz
University of Applied Sciences

Course number: BIM 10524
Finite Element Method
Study Level: Master / Graduate

Prof. Dr. Kemmler
Language of Instruction: English
ECTS Credits: 3

The lecture Finite Elements Method deals with the following topics:

- repetition of mechanical relationships of solids and formulation ina stringent, mathematical manner
- formulation of the strong and weak form of equilibrium of solids
- description of the discretization process•derivation of finite elements for trusses, plan problems, beams,folding plates and volumes using engineering strains and linearmaterial laws
- requirements for the shape functions for different mechanical models
- explanation of the h- and p-adaptation
- errors and convergence behavior for displacement, reaction andstress quantities of different element formulations based on apure displacement approach
- impact of element formulations on modelling questions
- formulation of field problems in civil engineering and solution using the finite element method