

## BIWO-03: Energy Methods, Finite Element Method (Prof. Kaliske)

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### **Prerequisite Knowledge**

- Basics in structural analysis like beam and plate bending theory

### **Topics of Project and Master Thesis**

- Numerical investigation of fracturing in wooden beams
- Mechanical analysis of polymeric structures
- Investigation of biomechanical components
- Simulation of concrete structures
- Structural Analysis taking data uncertainty into account
- Multiphysical investigation
- Material modelling

### **Literature**

- G. Holzapfel: Nonlinear Solid Mechanics, Wiley, Chichester, 2000
- J.N. Reddy: Energy Principles and Variational Methods in Applied Mechanics, Wiley, Hoboken, 2002
- O.C. Zienkiewicz, R.L. Taylor: The Finite Element Method, Butterworth, Oxford, 2005