

# Method of Finite Elements II

Faber, Autumn Semester 2008

Date	Pages	Subject
19.09.2008	485-502	Non-linear Finite Element Calculations in solids and structural mechanics <ul style="list-style-type: none"><li>- Introduction to non-linear calculations</li><li>- The incremental approach to continuum mechanics</li></ul> <b>Presentation at HIL E9 (by Prof. Dr. Faber)</b>
26.09.2008	502-528	Non-linear Finite Element Calculations in solids and structural mechanics <ul style="list-style-type: none"><li>- Deformation gradients, strain and stress tensors</li><li>- The Lagrangian formulation – only material non-linearity</li></ul> <b>Meeting at HIL E10.2</b>
03.10.2008	538-548	Non-linear Finite Element Calculations in solids and structural mechanics <ul style="list-style-type: none"><li>- Displacement based iso-parametric finite elements in continuum mechanics</li></ul> <b>Presentation at HIL E9 (Example 6.14, 6.15)</b>
10.10.2008	548-560	Non-linear Finite Element Calculations in solids and structural mechanics <ul style="list-style-type: none"><li>- Displacement based iso-parametric finite elements in continuum mechanics</li></ul> <b>Meeting at HIL E10.2</b>
17.10.2008	561-578	Non-linear Finite Element Calculations in solids and structural mechanics <ul style="list-style-type: none"><li>- Total Lagrangian formulation</li><li>- Extended Lagrangian formulation</li><li>- Structural elements</li></ul> <b>Presentation at HIL E9 (Example 6.18, 6.20)</b>
24.10.2008	581-617	Non-linear Finite Element Calculations in solids and structural mechanics <ul style="list-style-type: none"><li>- Introduction to constitutive relations</li><li>- Non-linear constitutive relations</li></ul> <b>Meeting at HIL E10.2</b>
31.10.2008	622-640	Non-linear Finite Element Calculations in solids and structural mechanics <ul style="list-style-type: none"><li>- Contact problems</li><li>- Practical considerations</li></ul> <b>Presentation at HIL E9 (Example 6.24, 6.27)</b>
07.11.2008	768-784	Dynamical Finite Element Calculations <ul style="list-style-type: none"><li>- Introduction</li><li>- Direct integration methods</li></ul> <b>Presentation at HIL E9 (by Prof. Dr. Faber)</b>
14.11.2008	785-800	Dynamical Finite Element Calculations <ul style="list-style-type: none"><li>- Mode superposition</li></ul> <b>Presentation at HIL E9 (Example 9.7)</b>
21.11.2008	801-815	Dynamical Finite Element Calculations <ul style="list-style-type: none"><li>- Analysis of direct integration methods</li></ul> <b>Meeting at HIL E10.2</b>
28.11.2008	824-830	Dynamical Finite Element Calculations <ul style="list-style-type: none"><li>- Solution of dynamical non-linear problems</li></ul> <b>Presentation at HIL E9 (Example 9.12)</b>
05.12.2008	887-910	Solution of Eigen value problems <ul style="list-style-type: none"><li>- The vector iteration method</li></ul> <b>Meeting at HIL E10.2</b>
12.12.2008	911-937	Solution of Eigen value problems <ul style="list-style-type: none"><li>- The transformation method</li></ul> <b>Presentation at HIL E9 (Example 11.4, 11.5, 11.8)</b>
19.12.2008		Introduction to FEM-software <b>Presentation at HIL E9 (by Dr. Mojsilovic)</b>