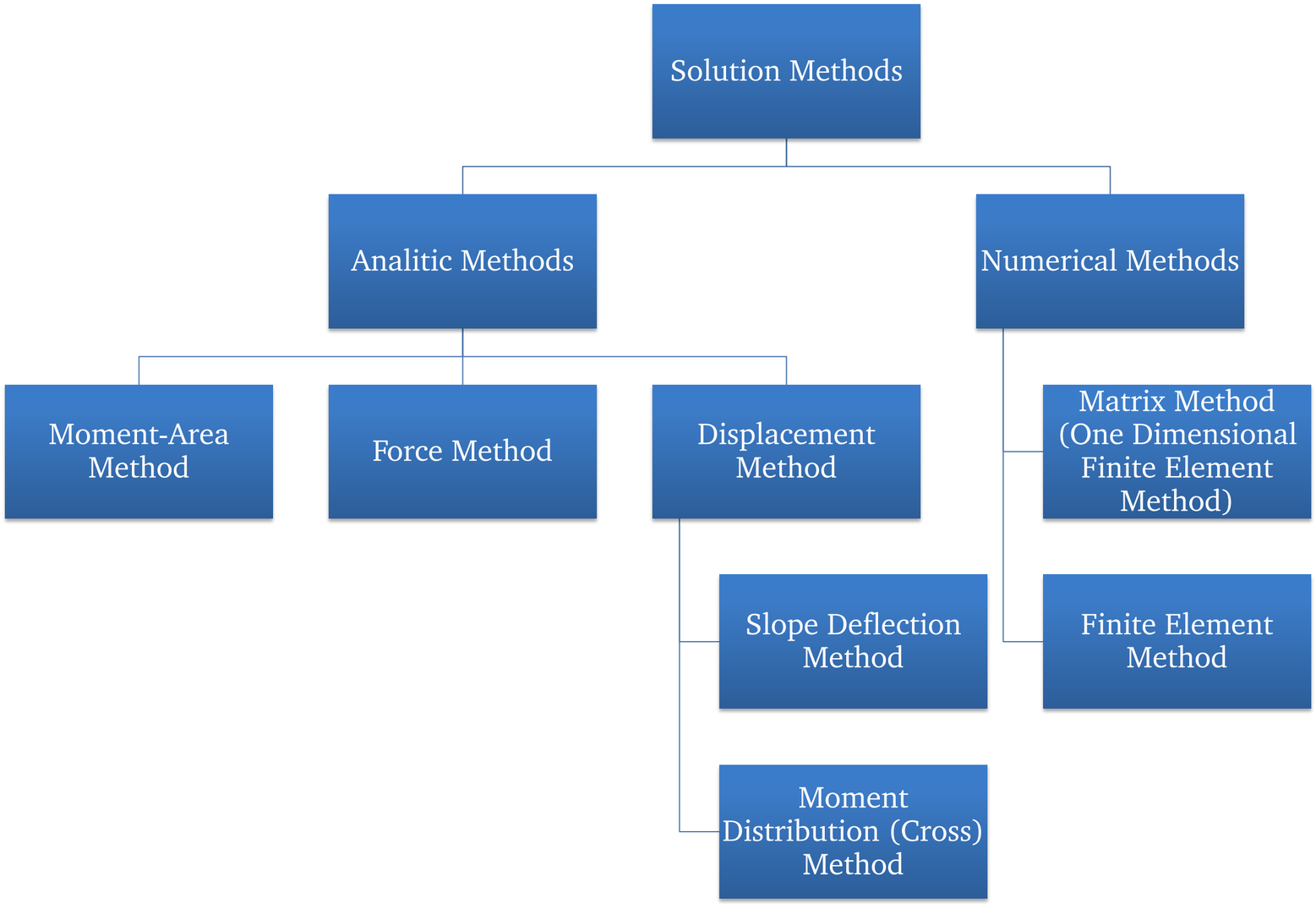
Sonlu Elemanlar Yöntemi ile Bilgisayar Uygulamaları

Structural Analysis with Finite Element Method

Dr. Öğr. Üyesi Orkun YILMAZ

Solution Methods for Structural Analysis



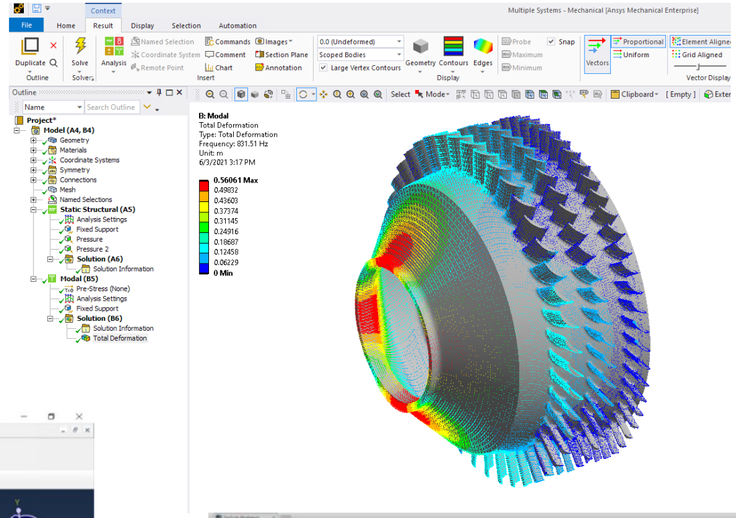
Course Objective:

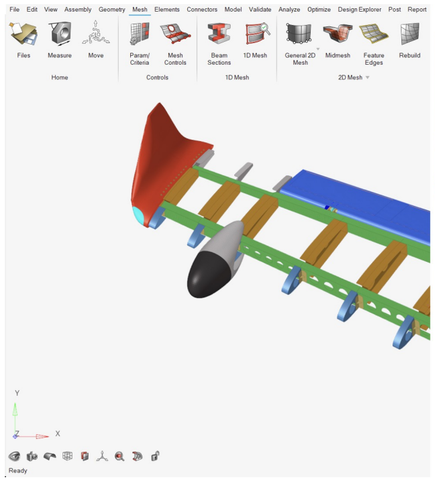
To introduce the technique of finite element method and **to teach principles of software employing finite element method**.

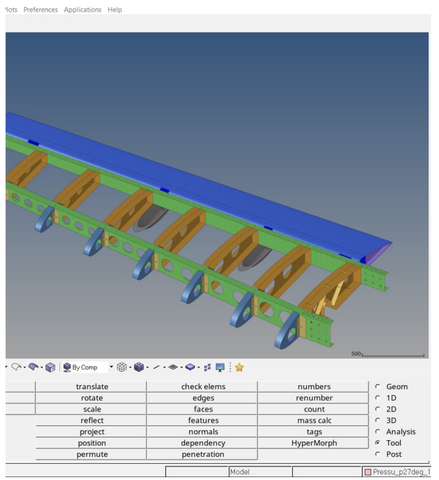
Some Finite Element Analysis Software:

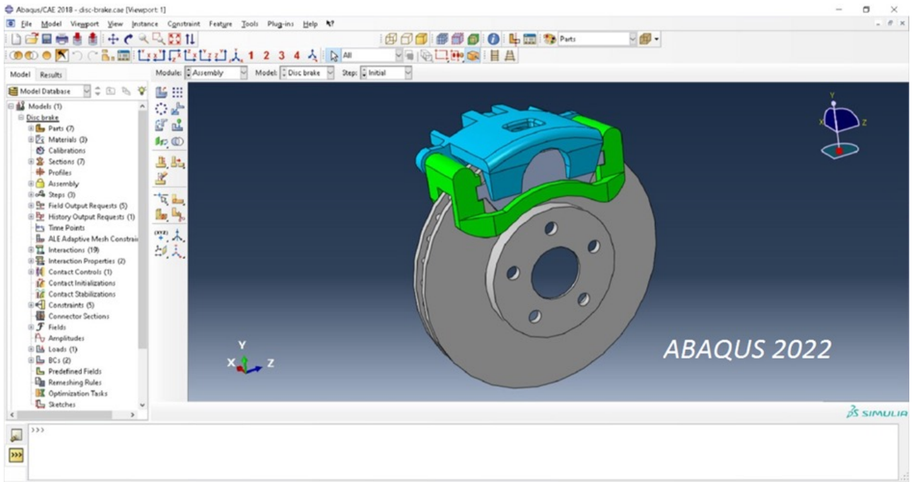
- **Ansys**
- Abaqus
- SimScale
- HyperWorks

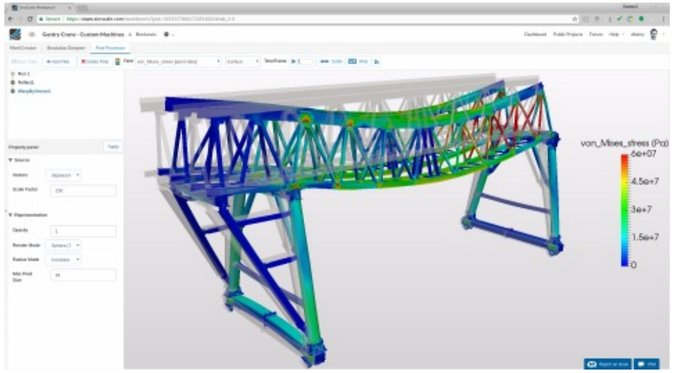
… and many more











Evaluation System:

Homework: $3 \times 5\% = 15\%$
Project: 20%
Mid-Term Exam: 25%
Final Exam: 40%

Recommended Readings:

- R. Cook, D.S. Malkus, M.E. Plesha, R.j. Witt, **Concepts and Applications of Finite Element Analysis**, 4th Edition, Wiley, 2001
- Huei-Huang Lee, **Finite Element Simulations with ANSYS Workbench 2023**, SDC Publications, 2023
- Huei-Huang Lee, **Part and Assembly Modeling with ANSYS DesignModeler 14**, A Free PDF Book by Huei-Huang Lee (http://lab.es.ncku.edu.tw/hhlee/Site/ADM14.html)
- X. Chen, Y. Liu, **Finite Element Modeling and Simulation with ANSYS Workbench**, CRC Press, 2015

Installing of Ansys Software

Installing of Ansys Software

Installing of Ansys Software

Index of /Distro/Utility

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Installing of Ansys Software

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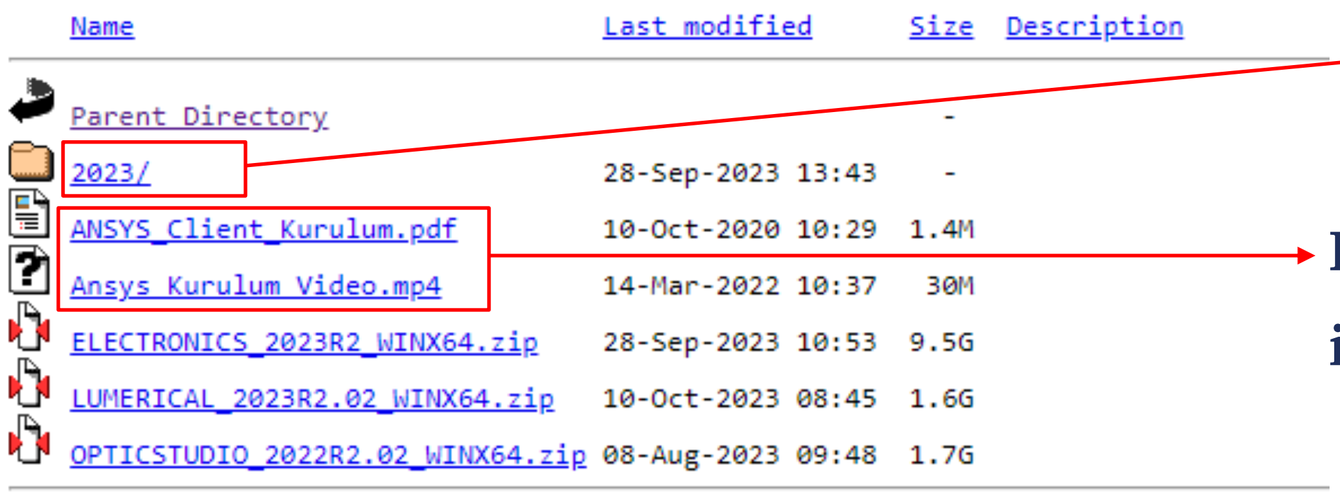

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Ansys Software

Instructions for installation steps

Installing of Ansys Software

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Linux/	18-May-2022 23:38	-	

Course Content

- Introduction to finite element method
- Introduction to Ansys Workbench
- 1D, 2D, and 3D analysis
- Introduction to modeling
- Mathematical modeling of structural systems
- Mesh structure of finite element model
- Contact properties between parts
- Material modeling
- Non-linear analysis
- Statical analysis
- Free-vibration and forced-vibration analysis
- Thermal analysis
- and other some additional information about Ansys

(topics may not be in sequence)