

Course Descriptions CiE

Course code: MB156, CE004

Course title : Solids Based Modelling for Finite Element Analysis

Hours per week: 4 SWS

Semester: 7 or 8

Number of Credits allocated/work-load:

4 CR

Course contents:

- Introduction to I-DEAS
- Solid Modelling - different approaches
- Introduction to the method of Finite Elements
- Loads and boundary conditions
- Automatic mesh generation
- Semi-automatic and manual mesh generation
- Quality of mesh
- Linear static analysis (also with msc.Nastran)
- Post processing
- Thermal and dynamic analysis (overview)
- Utilising foreign geometry for analysis
- Analysis of beam structures

Prerequisites:

- student of Mechanical Engineering in the last third of their studies
- good knowledge of Struct. Mechanics, Strength of Materials and Mathematics
- as this class focuses on the practical side of the FE-applications,

the basics of FE theory should be available (e.g. class "Numerische Lösungsverfahren"; only in German)

Objective of the course/learning outcome:

You will be capable of designing appropriate models for simulation, and based on those prepare and conduct FE-analysis and interpret the results

Recommended Reading:

no dedicated textbook

Teaching methods:

2 SWS lecture + 2 SWS lab in front of a PC

Assessment methods:

designing and analysing a part in 90' on the computer

Language of instruction:

English

Name of lecturer:

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