t.MND2 - Mathematik: Numerik und Differentialgleichungen 2

Person responsible for the course:	Franz Müller, mlra
Credits:	3
Valid for:	2010/2011
Last saved:	07.09.2010 17:39

Learning objectives:

This course

- provides the mathematical/numerical knowledge and skills needed for the ingeneering courses

- introduces notions and ways of thinking in discrete and numerical mathematics

- exemplifies the role of applied mathematics in sciences and technology

Course content:

numerical integration

numerics of ODEs and ODES
- Euler's method and Taylor's method
- methods of Runge-Kutta type

numerics of PDEs
- finite differences
- finite elements

Previous knowledge:

courses MAE1, MAE2, MLAE1, MLAE2,

i.e.:

Analysis 1 and 2 (differential- und integral calculus of one variable)

Linear Algebra 1 and 2

furthermore MND1

Teaching method:

Type of lesson:	Number of lessons per week:
Lecture	14x(2L+2L)
Tutorial/Practicum	exercises are integral part of course
Group teaching	
Block instruction	
Seminar	

Assessment:

According to the table or as specified in writing by the lecture at the beginning of the semester!

Number	Type	Weighting
1	End of term exam	60%
2	Exam during the semester	20% each
	Further assessments	worked/presented solutions of exercises (depending on lecturer)

Language of instruction:

german

Instruction material:

depending on lecturer (e.g. script, exercise sheets ...)

Comments:

Literature (e.g.):

Arnol'd: Gewöhnliche Differentialgleichungen. Springer

Walter: Gewöhnliche Differentialgleichungen. Springer

Stiefel: Einführung in die numerische Mathematik. Teubner

further references from lecturer on demand