**School of
Engineering**

t.CFD - Computational Fluid Dynamics (Numerische Strömungssimulation)

Person responsible for the course:	Egon Lang, lang
Credits:	4
Valid for:	2009/2010
Last saved:	06.07.2010 14:32

Learning objectives:

The students

- know the basic principles of mathematics in computational fluid dynamics,

- are able to produce simple geometric models and the respective structured and unstructured grids,

- are able to undertake computational fluid dynamics simulations,

- are able to interpret and evaluate the results of computational fluid dynamics simulations,

- develop a critical attitude towards the obtained results,

- are able to solve simple problems of fluid mechanics independently using computational fluid dynamics simulation.

Course content:

- princinples of computational fluid dynamics,

- development of basic equations, transformation of computational calculation formulae, programming and simulation with Excel or Matlab for simple examples,

- compilation of simple geometric models for computational fluid dynamics,

- production of structured and unstructured grids using software tools,

- implementation, analysis and interpretation of fluid dynamics,

- discussion of selected examples of three-dimensional flow.

Previous knowledge:

- basics of fluid mechanics (aerodynamics) and thermodynamics

- knowledge of differential equations

Teaching method:

Type of lesson:	Number of lessons per week:
Lecture	14*1
Tutorial/Practicum	14*3
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	
	Exam during the semester	
	Further assessments	

Language of instruction:

German

Instruction material:

script

Comments:

The infrastructure required for this course limits the number of participants to a maximum of 20. Should there be more than 20 participants, the course has to be held in more than one class. Students in Aviation receive a brief introduction to CATIA to ensure that they are capable of producing geometric models.