SYLLABUS

Viscous Flow 7.5 credits F7026T

Viskös strömning

Course syllabus admitted: Autumn 2008 Sp 1 - Spring 2009 Sp 4

DECISION

The syllabus was established by the Department of Applied Physics and Mechanical Engineering 2007-12-17, and remains valid from autumn 2008.

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LULEÅ TEKNISKA UNIVERSITET

Viscous Flow 7.5 credits F7026T

Viskös strömning

Second cycle, F7026T

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	U G#		Mechanical Engineering

Entry requirements

Advanced fluid mechanics F7016T

Selection

The selection is based on 30-285 credits

Examiner

Staffan Lundström

Course Aim

When completing the course you should:

· Master the equation of fluid mechanics.

· Know how to approximate these equations for a number of cases in fluid mechanics.

· Be able to break-down complex fluid mechanical problems into simpler cases and draw conclusions on the complex problem from analysis of the simpler cases.

Contents

Physical properties of fluids. Kinematics of the flow field. Equations governing the motion of a fluid. Flow of a uniform incompressible viscous fluid. Flow at large Reynolds number effect of viscosity. Irrotational flow theory. Test cases.

Realization

You will be assigned certain chapters in the book and problems related to these. You will then present the contents of the chapters and the solutions to the problems for the teachers and the other students. In addition each student will be assigned to real fluid mechanical problems to which they should reflect during their presentations. Occasionally lectures are held in order to introduce a subject or a methodology.

Examination

Each presentation is examined. These presentations are obligatory.

Literature. Valid from Autumn 2008 Sp 1

An Introduction to Fluid Dynamics, GK Batchelor

Course offered by

Department of Applied Physics and Mechanical Engineering

Items/credits

Number	Type	Credits	Grade
0001	Presentations	7.5	U G#

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