Brandenburgische Technische Universitaet, Cottbus-Senftenberg

Turbulence Modelling (6 ETCS)

Responsible Staff Member: Prof. Dr.-Ing. Schmidt, Heiko

Location of the courses: Faculty 3 - Mechanical Engineering, Electrical Engineering and

Industrial Engineering

Language: English

Learning Outcome

The students learn about different approaches to model turbulent flows.

They learn which turbulence model is adequate for different applications.

Contents:

1.   In the seminar we will discuss basic concepts in turbulence modelling.

2.   Subjects are:

3.   • The problem of simulating turbulent floes

4.   • Basic flow equations

5.   • Algebraic, 1- and 2- equation models.

6.   • Reynolds stress models

7.   • Large Eddy Simulation

8.   • Hybrid turbulence models

9.   • One-dimensional turbulence

Forms of Teaching and Proportion:

Lecture - 2 hours per week per semester

Exercise - 2 hours per week per semester

Teaching Materials and Literature:

10.   • Pope, S.B.: Turbulent Flows

11.   • Geurts, B.J.: Elements of Direct and Large-Edddy Simulation

Assessment Mode:

Oral exam, duration 30 min.

Withdrawal from Examination:

Until the end of the seventh week of the lecture period