

Turbulent heat exchange

Course code: ATH3

ECTS Credits: 1

Department	: ET	Lectures	: 20h00
Lecturers	: L. Brizzy	Tutorials	:
Year of study	: 2 nd year	Laboratory sessions	:
Semester	: 3 rd semester	Project	:
Assessment method(s)	: 1 written test	Home works	:
Language of instruction	: English	Total hours	: 20h00
Type of courses	: Compulsory		

Objective: The purpose of this course is to provide a description of the mechanisms involved in the heat transfer in the presence of turbulent flows. It should enable the student to know the role of turbulence on heat transfer for the main industrial configurations. The last part of the course is an extension of the course on turbulence modelling applied to heat transfer.

Prerequisites: None

Content:

1. Reminder of the characteristics of the dynamic and thermal turbulence.
2. Heat transfer in turbulent parietal flows (flow in pipes - boundary layer)
3. Turbulent free flows in natural, mixed and forced convection.
4. RANS Turbulence modeling : Thermal aspects.

In the lecture is associated tutorials, in pairs, to calculate heat transfer in industrial configurations.

Recommended reading: None

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