PHYS2223 Physics of fluids II

[22.5h+7.5h exercises] 4.5 credits

This course is taught in the 1st semester

Teacher(s):	Eric Deleersnijder
Language:	French
Level:	Second cycle

Aims

Introducing the first and second principles of thermodynamics applied to a fluid and combining them with the material of the Fluid Physics I course to analyse the main natural and industrial fluid flowing regimes.

Main themes

1. Local equilibrium, equations of energy and entropy applicable to a fluid flow.
2. Characterization of different flow regimes (laminar flow, turbulent flow, Stokes regime, etc.)
3. Compressible flow : Bertouilli theorem generalized, wave shocks.
4. Turbulent flow, limit layer notions.
5. Fluid dynamics in a non-inertial referential, big scale rotation flow.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisites: the course PHYS 1121, Physics of fluids I, or equivalent.