2194	Multiphase Flows

Introduction to multiphase flow: description, categorization and application examples. Dispersed phase: properties, characterisation, coupling with carrier phase. Statistical characteristics of dispersed phase distributions. Particles in a continuous phase: dynamics, thermodynamics, interactions with fluids, particles and solid boundaries (erosion, deposition). Carrier phase: equations, integration methods. Numerical simulation: Lagrange-Euler. Continuous phase equations (coupling with dispersed phase). Dispersion mechanisms: molecular and turbulent diffusion, numerical simulation. Measurement methods.

Project 1 : Statistical processing of dispersed phase measurements.

Project 2: Numerical simulation of particle motion in basic flow fields of incompressible fluids.

To attend this course, sufficient knowledge of the material of the following courses is strongly recommended: Fluid Mechanics I, Computational Fluid Dynamics.