Course Title: Computational Fluid Dynamics	**Number of Units: 1**
SSD :ING-IND/06	**CFU:** 9
Course aims: The aim of the course is to provide students with the theoretical foundations of numerical discretization of fluid flow equations, as well as to permit them to understand and apply the basic techniques of modern Computational Fluid Dynamics	
Course Description Finite volume and finite difference discretization of model transport equations, conservative and non conservative formulations. Numerical integration of incompressible Navier-Stokes equations: vorticity-streamfunction and primitive variable formulations. Fractional step methods and the treatment of the pressure Poisson equation. Discretization techniques for nonlinear convective terms and associated conservation properties. Turbulent models and introduction to the numerical simulation of turbulent flows. Numerical integration of Euler equations for compressible flows and introduction to the study of shock capturing schemes.	
Assumed Background: Numerical methods	
Assessment methods: Written text on a case study and oral examination	