Course: FLUID MECHANICS

GENERAL INFORMATION

Spring Semester
6 ECTS credits

INSTRUCTOR(S)

IÑIGO J. LOSADA RODRÍGUEZ (losadai@unican.es)
Catedrático de Universidad. Departamento de Ciencias y Técnicas del Agua y del Medio Ambiente.

JAVIER LÓPEZ LARA (lopezjav@unican.es)
Profesor Contratado Doctor. Departamento de Ciencias y Técnicas del Agua y del Medio Ambiente.

PABLO HIGUERA CAUBILLA (higuerap@unican.es)
PFU Student. Instituto de Hidráulica Ambiental. Universidad de Cantabria

Description

This course covers hydrostatics, the basic equations of incompressible fluid flow, potential flow and dynamic pressure forces, viscous flow and shear forces, steady pipe flow, turbulence, dimensional analysis, laminar and turbulence boundary layer, flows around obstacles, and open-channel flow. The course includes small-group laboratory assignments.

TEXTBOOK

***Textbook**: A Brief Introduction to Fluid Mechanics. Donald F. Young, Bruce R. Munson and Theodore H. Okiishi.*

SYLLABUS

1. Introduction to fluids
2. Basic Concepts
3. Fluid Properties
4. Fluid Statics
5. Fluid Kinematics
6. Control Volume Analysis (Mass, Momentum and Energy)
7. Bernoulli and Energy Equations
8. Differential Analysis
9. Pipe flow
10. Open Channel flow
11. Boundary layer and related topics
12. Turbulence