



COURSES DESCRIPTION

Winter Semester

1 FLUID MECHANICS OF HYDRAULIC STRUCTURES

Teacher: Angelidis P.

Professor

This course will cover the following topics:

1. Hydrostatics - applications
2. Forces practiced on dams
3. Applications to forces exercised in dams
4. Cavitation Effect - Barbed Superflow Ventilators
5. Inflatable Dams
6. Bernoulli theorems - applications to flow problems
7. Bernoulli theorems - applications in non-permanent flow problems
8. Energy line, hydraulic gradient line, applications in water transport projects with closed conductors
9. Water turbines
10. Small hydroelectric projects
11. Dynamic and static stress from turbulent flow.
12. Turbulent flow, Reynolds equations
13. Turbulence models. Boundary layer

Once the course is completed, participant will be able to:

- To possess knowledge for the design and dimensioning of dams and inflatable dams
- To understand the dynamic and static stress from turbulent flow
- To apply the Bernoulli theorem for the design of various hydraulic works
- To analyze and calculate hydrostatic and other forces, exerted in various hydraulic works
- To combine and synthesize the knowledge he acquired, to deal with the phenomenon of cavitation in overflow and closed ducts
- Assess - in the context of the energy crisis - and plan small hydroelectric projects

Teaching Mode: 3 hours suggestion-exercises / week