

Fluid Mechanics & Environmental Engineering Laboratory

Responsible:

Dorothea Kasiteropoulou, Associate Professor

Courses it supports:

- Fluid Mechanics,
- Hydrology,
- Fluid Flow Simulation,
- Hydraulics
- Aquatic Ecosystems - Underground and Surface,
- Water Resources Management,
- Coastal Ecosystem Management,
- Limnology



Description:

The laboratory area consists of a 402.50 s.m. working area for Ph.D. Candidates and Post-graduate students and another area with computers for educational and research purposes.

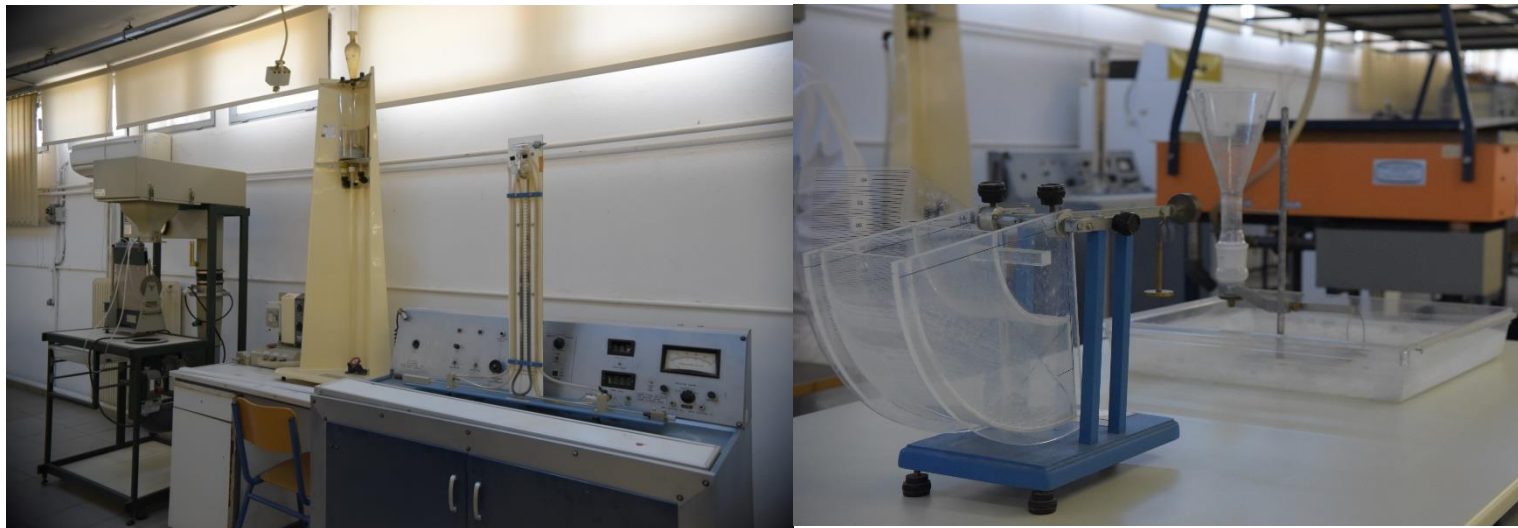
It supports the following:

- Nano – and micro simulation problems

- Simulation of nano- and mesomaterials
- Multiscale modelling
- Computational modelling through nanoporous materials
- Computational Fluid Dynamics problems
- Computational methods for high Reynolds number external and internal flows
- Development of incompressible and compressible CFD methods
- Numerical grid generation (finite elements)
- Vectorization of computer codes
- Modelling of complex environmental processes and development of parallel processing algorithms
- High performance computing and GPU programming
- Hybrid atomistic-continuum method
- Transport phenomena in micro- and nano-fluidic systems

The equipment consists of:

1. Free-flow simulation channel (long channel) with corresponding obstacle profiles,
2. Closed-duct flow simulation device, 3. Closed-duct flow simulation device. (Venturi tube included)
4. Hydrostatic pressure measurement device, 5. Pelton H 41D hydroturbine
6. Pelton H-19 hydro turbine Serial No: 067, 7. Rectangular or triangular weir flow simulation device,
8. Flow meter, 9. Orifice flow measurement device, 10. Portable weather station, 11. Water sampler.



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