# ME220A: **Fundamentals of Fluid Mechanics**
## Fall 2010
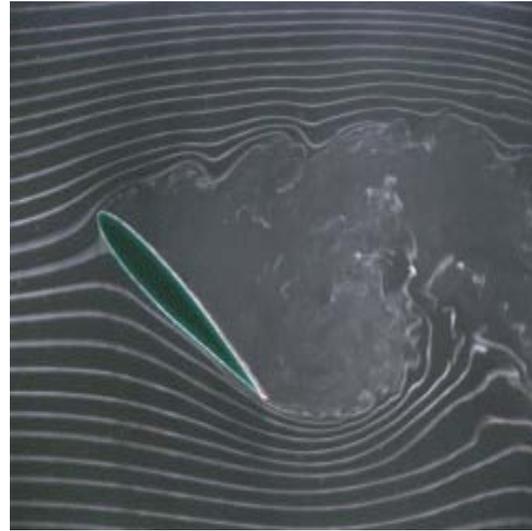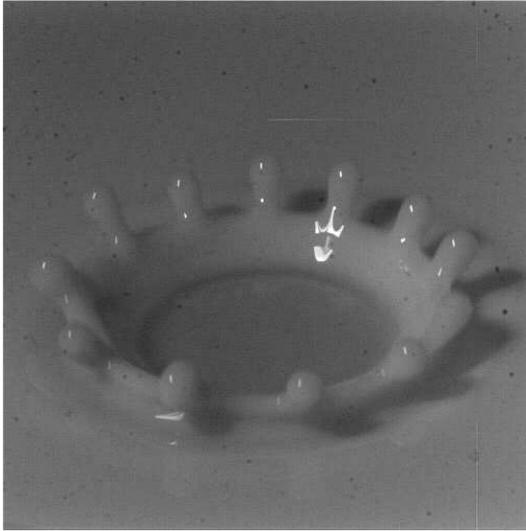


**Course goals:**

to develop a coherent picture of the fluid dynamics theory via physically motivated examples and to introduce students to both the classical as well as modern results

**The topics to be covered:**
- basic equations of motion (continuity, momentum, energy, vorticity)
- potential flows, thin airfoil theory, conformal mapping
- stability theory, laminar/turbulent transition
- vortex dynamics, boundary layers, turbulence
- inviscid/viscous, irrotational/rotational, incompressible/compressible flows

**Suggested textbooks:**
- R.L. Panton, *Incompressible flow*, Wiley 1984
- G.K. Batchelor, *An introduction to fluid mechanics*, Cambridge 1967
- L.D. Landau and E.M. Lifshitz, *Fluid mechanics*, Pergamon Press 1987

**Instructor:**   Prof. Rouslan Krechetnikov, Engineering II 2332
**Lectures:**   Tue/Thu 3:30-4:45 at Engineering II 2243
**Office hours:**   Tue/Thu 11:00-12:30