Fluid Dynamics

This course is an introduction to Fluid Dynamics for students in Science, Math, and Engineering. No previous knowledge of fluid dynamics is assumed.

Fluid dynamics is one of the most applied chapters of applied mathematics: People make planes, predict weather; and in addition, we live in fluids (air and water). Fluid dynamics considers motions ranging in scale from swimming microorganisms to galactic vortices.

And besides: The "almost alive" water motion is
fascinating

Instructor: Alexander Balk

The course will introduce the following topics:
- Equations of Fluid Motion
- Vorticity Dynamics
- Waves in Fluids
- Scaling and Similarity
- Boundary Layers
- Instability and Turbulence
- How Airplanes Fly: Lift and Drag
- Dynamics of Atmosphere and Ocean.

The Main Text: Fluid Mechanics by P. K. Kundu and I. M. Cohen

M, W, F, 8:35-9:25AM, LCB 222