# Fundamental Fluid Mechanics

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## Outline:

1. Introduction and basic concepts
2. Vector and tensor analysis, application to fluid mechanics
3. Kinematics of fluid motion
4. Differential balances in fluid mechanics
5. Integral balances in fluid mechanics
6. Inviscid flows
7. Viscous laminar flows
8. Laminar-turbulent transition and turbulent flows
9. Boundary layer theory

**Homework:** Homework sets will be assigned in the class.

**Course resource:** ftp://ftp.iam.ntu.edu.tw

**Grading Policy:** homework (20%), two mid-term exams (50%), final exam (30%)

**References:**

Meinhard T. Schobeiri, ***Fluid Mechanics for Engineers****, a Graduate Textbook*, Springer-Verlag, 2010

Yunus A. Çengel and John Cimbala, *Fluid Mechanics: Fundamentals and Applications*, McGraw-Hill, 2006

Frank M. White, *Fluid Mechanics*, 5th Ed., McGraw-Hill, 2003