King Saud University
College of Engineering
Department of Mechanical Engineering

ME581 *Advanced Fluid Mechanics* 2nd semester 1438/37

Instructors' contact info:
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Lecture Hours:
4:00-6:30 Tuesday

Textbook:
Incompressible Flow, R. L. Panton, John Wiley & Sons, Inc.

Useful Reference:
Introduction to Fluid Mechanics, Fox & McDonald, John Wiley & Sons, Inc.

Topics:

- Fundementals of fluid mechanics (chapters 1 and 4)
- Vector calculus and index notation (chapter 3)
- Basic laws in integral and differential forms (chapter 5)
- Navier-Stokes equations (chapter 6)
- Internal flows (chapters 6 and 7)
- Dimensional analysis (chapter 8)
- Potential flow (chapter 12)
- Boundary layer theory (chapter 20)

Assessment:

- Two midterms (20% each)
- Project (20%)
- Final exam (40%)