**ME 55600/ME I0200: Advanced Fluid Mechanics**

3 credits; 3 class hours/wk.

**Prerequisites**: ME 32200, ME 35600

**Textbook:** *Fluid Mechanics* by Pijush K. Kundo & Ira M. Cohen, Academic Press.

References: *Incompressible Flow* by Ronald L. Panton, Wiley.

*Fluid Mechanics* by Chia-Shun Yih, West River Press

*Fluid Mechanics* by L. D. Landau & E. M. Lifshitz, Pergamon Press

**Topic (Lecture Notes) Weeks Textbook Homework**

I. Introduction 1 Ch. 1 & 2

II. Governing Equations 1 Ch. 4 #1

III. Exact Solutions of N-S Equation. 2 Ch. 9 #2

IV. Scaling/Hydrodynamic Parameter 0.5 Ch. 8 #4

V. Lubrication Theory 1 Notes #5

***Mid Term Exam*** 1

VI. Law Re Hydrodynamics 1 Ch. 10 #6

VII. Boundary Layer Theory 2 Ch. 10 #7

VIII. Jets, Wakes & Shear Layers 1 Ch. 10 #8

IX. Potential Flow 2 Ch. 6 #9

X. Surface Gravity Waves 0.5 Ch. 7

XI. Turbulent Flow 1 Ch. 13 #11

***Final Exam***

All homework assignments have to be presented clearly, neatly, and well organized.

Disorganized or sloppy work will not be considered.

Office Hours: By appointment, Th, 3:45-4:45 PM

Grading: Mid Term Exam 30%, Final Exam 30%, Homework 20%, Special Project 20%

To preserve grading fairness for all students, the course grade breakdown and grade assignment as specified in the course syllabus will be strictly followed. No individual exception to the grading policy will be allowed.

Prof. Z. Dagan

Office: T-238

Tel: (212) 650-6455

email: [dagan@ccny.cuny.edu](mailto:dagan@ccny.cuny.edu)