ME 304 – Section 102 - Fluid Mechanics

Wednesday: 6:00 PM - 8:50 PM

Instructor: Farid Alisafaei, farid.alisafaei@njit.edu

Office Hours: Wednesday 4:00-6:00 PM

Office Location: MEC 324B

Course Description: This course covers an introduction to the basic principles of fluid statics and dynamics, conservation of mass, momentum, and energy, control-volume analysis, and viscous incompressible flow.

Computer usage: Some problems may require software such as MATLAB.

Recommended reference: B. R. Munson, D. F. Young, T. H. Okiishhi's. Fundamentals of Fluid Mechanics, by Philip M. Gerhart, Andrew L. Gerhart, John I. Hochstein 8th Edition, Wiley, NY, 2016.

Grading:

Assignment and class exercises: 30%

Tests and Quizzes: 40%

Final exam: 30%

Syllabus / Lecture schedule:

Class	Chapter	Topic
1	1	Introduction
2	2	Fluid statics
3	3	Bernoulli's equation
4	3,4	Bernoulli's equation, Fluid kinematics
5	4	Fluid kinematics
6	5	Control volume analysis (conservation of mass)
7	5	Control volume analysis (momentum)
8	5	Control volume analysis (energy)
9	6	Differential analysis of fluid flow
10	7	Dimensional analysis
11-12	8	Pipe flows
13-14	9	Drag