EGM6813 Fluid Mechanics II - Spring 2020
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Class Time: Tuesday 5th & 6th Periods (11:45am – 1:40am)
Thursday 5th & 6th Periods (11:45am – 1:40am)

Class Location: CSE E107 (*)

(*) Tentatively Thursday 5th period will be in a different nearby-room and will be announced

Course Description:

Prerequisite: EGM6812, or equivalent fluid mechanics knowledge;

Text: Class Notes

Grading Policy
Homeworks – 30%, Mid-Term Exam – 30%, End-of-Term Exam – 40%
A = [90,100], A- = [87,90), B+ = [84,87), B = [80,84), B- = [77,80), C+ = [74,77), C = [70,74),
C- = [67,70), D+ = [64,67), D = [60,64), D- = [57,60), E = [0,57).

Homework, Final Presentation and Exam Policy
Homework and assignments are due at the beginning of the period on the due date. All assignments should be neat and legible. Points will be taken off for sloppy work. You may discuss the assignments with other students, but you are expected to put in individual effort. Copying and plagiarizing assignments will not be accepted.

Academic Honesty
All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. You are expected to uphold academic honesty and failure to comply will result in disciplinary action.

TA & Office Hours: TA for this course is Josh Garno jgarno@ufl.edu. My office hours are Tuesday 3:00 - 4:00pm, Thursday 3:00 - 4:00pm in 205F PS&T. Josh will announce his office hours.

Recommended Books:
Books (1) and (2) are overall the best books for this course - You should purchase one of them. Books (3) and (4) excellent books as well. They are perhaps harder, but they will be most useful as you become more knowledgeable in fluid mechanics. I will use book (5) when we consider boundary layer theory. Book (6) is a classic. I will use book (7) for perturbation theory. Book (8) again a very good source from continuum mechanics perspective.
1. *Incompressible flow*, by R.L. Panton
3. *Introduction to Fluid Mechanics*, by G.K. Batchelor
5. *Boundary Layer Theory*, by H. Schlichting
6. *Hydrodynamics*, by H. Lamb
8. *Stromungsmechanik I in Handbuch der Physik*, by J. Serrin

Outline
1. Vorticity equation
2. Exact solutions of Navier-Stokes equations
3. Boundary layer and lubrication theory
4. Solutions by asymptotic analysis and perturbation methods
5. Hydrodynamic stability
6. Introduction to Chaos and Turbulence

**Lecture Schedule**(*) (tentative)

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<tr>
<th>Week 1</th>
<th>Tue, Jan 7</th>
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<td>Week 4</td>
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<td>Thu, Jan 30</td>
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<td>Thu, Feb 6</td>
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<td>Week 6</td>
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<td>Thu, Feb 13</td>
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<td>Exam-I</td>
<td>Thu, Feb 27</td>
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(*) **Note:** Both Tuesday and Thursday classes are for 2 periods. This allows me to make up for days I am on travel. The above lecture schedule covers a total of 45+ periods.