

Viscous Fluid Dynamics, MIE 707/ME 745-A

Course Information

Lecture: Mon/Wed 4:00-5:15, 114 Marcus (Studio C)

Instructor: Prof. Blair Perot

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Office Hours: Tues/Thurs 4:00-5:30, or by appointment.

Text:

FLUID DYNAMICS, Theoretical and Computational Approaches, 2nd Edition, Z.U.A. Warsi, CRC Press, ISBN# 0-8493-2407-6

Web Page:

<http://www.ecs.umass.edu/mie/faculty/perot/mie707>

Grading:

- Homework: 25%
- Project: 10%
- Midterm: 25%
- Final Exam: 40%

Academic Honesty Policy:

<http://www.ecs.umass.edu/mie/graduate/requires/hones.htm>

Syllabus

Date	Reading	Assignment	Content
Jan 26 (we)	Chap 5, I		Introduction / Review
Jan 31 (mo)			Unsteady Flows
Feb 2 (we)		HW1 due	Stagnation Points
Feb 7 (mo)	Chap 5, II		Boundary Layer Equations
Feb 9 (we)		HW2 due	Similarity Solutions
Feb 14 (mo)			Jets, Wakes, Shear Layers
Feb 16 (we)		HW3 due	Examples
Feb 21 (mo)	Holiday	No Class	
Feb 23 (we)			Affect of Pressure Gradient
Feb 28 (mo)			3D Boundary Layers
Mar 1 (we)		HW4 due	Unsteady B. L.
Mar 6 (mo)	Chap 6, I		Stability Theory
Mar 8 (we)		HW5 due	Applications
Mar 20 (mo)			Review
Mar 22 (we)		Midterm Exam (due 3/29)	
Mar 27 (mo)			Turbulence
Mar 29 (we)			Turbulence Statistics
Apr 3 (mo)	Chap 6, II		RANS equations
Apr 5 (we)		HW6 due	Turbulent B.L. Eqns
Apr 10 (mo)	Chap 6, III		Log Law
Apr 12 (we)		HW7 due	Jets, Wakes
Apr 17 (mo)	Patriots Day	No Class	
Apr 19 (we)			Shear Layers, Plumes, etc
Apr 20 (th)	Make up 17th	HW8 due	Similarity analysis
Apr 24 (mo)			Production and Decay
Apr 26 (we)	Chap 6, IV	HW9 due	Two equation models
May 1 (mo)			Reynolds stress models
May 3 (we)		HW10 due	Special Topic
May 8 (mo)			Project Reports
May 10 (we)		Final Exam (due 5/15)	Review & Exam