MECH 7220/26 Convection heat transfer: Fall 2010

Instructor: Daniel W. Mackowski
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office hours MWF 2:00–3:00, TH 1:00-3:00

Text: *Convective Heat Transfer*, Adrian Bejan,
Supplemental notes and reading assignments will be assigned throughout the semester.

Course Objectives: The course will examine the analysis and prediction of convective transport for a variety of flow and heat transfer configurations.

Computer/software usage: We will rely extensively on the symbolic/numeric package *Mathematica* throughout the course. I would encourage you to purchase a copy, providing you have the resources. See me if you do not have the resources. You may also use *Matlab* if that package is more to your liking, yet I will not be able to give you the same assistance for *Matlab* codes that I can for *Mathematica*.

Homework: Homework problems will be assigned on a regular basis. As you might have already discovered, graduate–level homework problems are considerably more demanding and involved than undergraduate exercises. Your homework assignments will typically involve several pages of analysis. The packaging of the homework (i.e., presentation, organization, clarity) will affect the grade. You do not need to type the assignments, yet I would encourage you to do so – you will certainly need to become familiar with word processing/editing of mathematical documents to complete your thesis/dissertation.

Exams: There will be two exams in the course: a mid–term and a final. Both will be take–home exams.

Grading: Homework: 30%
Mid–term exam: 30%
Final exam: 30%
Class participation (on–campus students only): 10%

Accessibility: Students requiring special accommodations should see the instructor as soon as possible, and/or contact the Students with Disabilities Program office at 844–5943.

Tentative Schedule
We will closely follow the textbook in this course, with a few twists and turns. We will begin with the introduction chapter (1), and then jump to the end to numerical methods (chapter 12 and notes). Following this chapter we will pick up with chapter 2 and continue on in sequence.