

CAAM 564: Numerical Optimization (Spring, 2009)

- **Instructor:** Yin Zhang, Room: DH 3090, Phone: X5744.
- **Office Hours:** Wed: 1:00–3:00pm or by appointment.
- **Textbook:** *Numerical Optimization*, by Nocedal and Wright.
See <http://www.ece.northwestern.edu/~nocedal/book/num-opt.html>
- **Course Webpage:** <http://www.caam.rice.edu/~zhang/caam564/>
- **Coverage:**
 - 1) Review of constrained optimization theory (Chap. 12)
 - 2) Trust region methods for unconstrained optimization (Chap. 4)
 - 3) Linear programming theory and algorithms (Chaps. 13-14)
 - 4) Nonlinear programming algorithms (Chaps. 15-19).

Part 1) will be covered without detailed proofs since a more thorough treatment of this subject is given in CAAM 560. Part 3), linear programming, will be also be treated in a brief way. The primary emphasis of the course is on Part 4).

Prerequisites: CAAM 453/4 (matrix analysis, multivariable calculus, Matlab)

- **Course Work:**

Homework problems, including computer programming, will be assigned. Late submissions will be accepted for 80% of the credit until the third day after the due date, or otherwise with the permission of the instructor. There will be no exams.
- **Honor Code Policy:**

Students can discuss assignments with each others, but must carry out the work independently. Copying or sharing any part of an assignment, especially computer codes, is strictly prohibited.
- **Grading:**

Homework 90%; Participation: 10%