Math 50, Section 02   Tufts University
Modeling and Computing   Department of Mathematics   Fall 2011

Course Website: http://neumann.math.tufts.edu/∼scott/math50.

Recommended Materials: *Matlab & Simulink Student Version - Release 2011a*, available from the bookstore or from http://www.mathworks.com/academia/student_version/index.html . The homework in this course will require you to do some programming exercises; if you are not already familiar with another programming language (and even if you are), then it is probably easiest to do these in Matlab. All Tufts students have access to Matlab in the ITS Computing Center at Eaton Hall, but the student version will allow you to do the assignments on your own computer. Free alternatives (that require more work to get running) include doing these exercises in Octave or Python.

Academic Integrity: While there are no exams in this class, students are required to abide by the university guidelines on academic integrity. For full details, see http://uss.tufts.edu/studentaffairs/policies/campus/academicintegrity.asp .

Disability Services: If you are requesting an accommodation due to a documented disability, you must register with the Disability Services Office at the beginning of the semester. To do so, call the Student Services Desk at 617-627-2000 to arrange an appointment with Sandra Baer, Program Director of Disability Services.

Course Work and Grading: This course will be focused on the development of problem-solving techniques based on applying mathematical ideas and computational principles. There will be no exams. Instead, there will be weekly homework assignments, two midterm projects, and a final project. Your final percentage grade in the course will be computed as 30% for homework, 20% for each midterm project, and 30% for the final project.

Late Policy: All homework assignments are due at the beginning of the class on the date specified. Late homework will be penalized by deducting 10 percent of the total grade per day late. For example, an assignment handed in before 1:30 pm on the day after it is due will be penalized 10 percent, while one handed in after 1:30 pm on the day after it is due will be penalized 20 percent. You are allowed two "freebies" in this system, so you may *either* hand in two of your assignments one day late each *or* one assignment two days late (but not both) without penalty. *No* late projects will be accepted.

Learning Objectives: This course satisfies Learning Objectives 1a, 1e, 3a, 3b, 4a, 5a, and 6a as listed at http://ase.tufts.edu/faculty-committees/assessment/math.htm.

Approximate Course Topics:
- Optimization, Sensitivity Analysis
- Linear Programming, Integer Programming
- Graph Algorithms, Critical Paths, Maximum Flow
- Probabilistic Modeling, Markov Chains
- Monte Carlo Methods, Queuing Theory
- Difference Equations, Population Dynamics