Time: 1:30 - 2:45 MW
Place: SAS 2225
Instructor: Ralph Smith
Office: SAS 4140, Tel: 515-7552
Email: rsmith@ncsu.edu
Web: http://www4.ncsu.edu/~rsmith/


Computing: We will use Matlab and Maple.

Grades: The gradescale is: 90-100 A-,A;
80-89 B-,B,B+;
70-79 C-,C,C+;
60-69 D-,D,D+;
below 60: F. The grades are based on the following coursework:

Homework and Projects: 60 %
Midterm Exam: 15 %
Final Exam (December 16, 2015): 25 %

Course Topics:
- Motivating Examples and Modeling Concepts
- Mathematical and Statistical Aspects of Inverse Problems
  - Mathematical and statistical model calibration
  - Statistically-based model comparison techniques
- Compartmental Analysis and Conservation Laws
  - Advection, convection and diffusion processes
  - General transport equations
  - Conservation of mass and momentum
  - Traffic flow and analysis
- Heat Transfer
  - Application: catalytic converter
  - Laboratory experiment: Heat conduction in a rod
- Population and Disease Models
- Neutron Transport Problems
- Analytic and numerical solution techniques for PDE
- Validation and Verification Techniques

Academic Integrity and Disabilities Information: This is provided at the following web sites:
http://www.ncsu.edu/provost/academic_regulations/integrity/reg.htm
http://www2.ncsu.edu/ncsu/stud_affairs/counseling_center/dss/