CS /Math 4642, CX 4640: **Numerical Analysis I, Fall 2013**

This course covers introductory materials to numerical algorithms for some basic problems in computational mathematics. Discussions of both implementation issues and analysis will be presented.

Students are expected to have a good background in calculus, linear algebra and familiarity with a high-level programming language.

Class 3:05 pm – 4:25 pm, MW, Instr Center 105

Instructor: Hongyuan Zha, zha@cc.gatech.edu, 1314 KACB

TA: Sao, Piyush K [psao3@mail.gatech.edu]

Textbook:
Michael Heath. **Scientific Computing, An Introductory Survey**, 2nd Ed.

There are SIX homework assignments including paper-pencil problems and Matlab implementations. Late homework policy: 20% penalty. No credits for late HWs ONE week passed the due date.

The final grade will be based on

Homework assignments: 50%
Mid-Term: 20%
Final: 30%

Class Time	Topics	Textbook	Homework
Week 1	Introduction	Ch1	
Week 2	Introduction	Ch1	
Week 3	Linear Systems	Ch2	HW1/Due
Week 4	Linear Systems	Ch2	
Week 5	Least Squares	Ch3	HW2/Due
Week 6	Least Squares	Ch3	
Week 7	Least Squares	Ch3	HW3/Due
Week 8	Eigenvalues	Ch4	Mid-Term
Week 9	Eigenvalues	Ch4	
Week 10	Eigenvalues	Ch4	HW4/Due
Week 11	Nonlinear Equations	Ch5	
Week 12	Nonlinear Equations	Ch5	
Week 13	Nonlinear Equations	Ch5	HW5/Due
Week 14	Optimization	Ch6	
Week 15	Optimization	Ch6	
Week 16	Optimization	Ch6	HW6/Due
Week 17	Final Week		

Assignment and due dates of home works are tentative and are subject to change.