Syllabus
Math 441: Introduction to Numerical Analysis
Fall 2006, TuTh 4:00 - 5:15pm, SOND 207

Instructor: Andrei Drăgănescu
Office: MP420
Phone: 410-455-3237
Email: draga@math.umbc.edu
Website: *http://www.math.umbc.edu/~draga/courses/math441*

Office hours: Tuesday 5:30 - 6:30 pm, Thursday 9:00 - 10:00 am, or by appointment.

Prerequisites: Math 225, Math 251, Math 301, CMSC 201, or instructor approval.

Texts:

- **required:** *Numerical Analysis: Mathematics of Scientific Computing*, 3rd edition, by David Kincaid and Ward Cheney, Brooks/Cole 2002.
- **recommended:** *Matlab Guide*, 2nd edition, by Desmond J. Higham and Nicholas J. Higham, SIAM 2005.

Course objectives: This course serves as an introduction to the mathematical aspects of numerical analysis. The focus will be on the mechanisms lying at the basis of method design and error analysis. Topics include Newton's method for solving nonlinear equations, function approximation, numerical differentiation and integration, and numerical solution of ordinary differential equations. Practical illustration of the methods will be done using Matlab.

Assignments: Each lecture will be followed by a homework assignment that will be generally due on Thursday of the following week at the beginning of class. Late assignments will not be accepted under any circumstances. A sufficient number of assignment scores will be dropped in order to avoid penalizing infrequent absences. Each homework assignment contains required and recommended problems. Recommended exercises will not be graded, but can serve as basis for in-class discussions and office hours.

Tests: There will be two tests and a final exam (see detailed schedule for exam dates).

Grading: Homework – 30%, Exams – 40 %, Final Exam – 30%.

Academic conduct: The UMBC policy on academic conduct will be stricly observed. To read the full Student Academic Conduct Policy, consult the UMBC Student handbook, the Faculty Handbook, the UMBC Integrity webpage www.umbc.edu/integrity, or the Graduate School website www.umbc.edu/gradschool.