Course Contract

Math 4445: Introduction to Numerical Analysis

CRN 94329, Fall 2012

Class Meeting Time and Place: Tuesday and Thursday 11:00am -12:15pm, LITRV 1800

Instructor: Matthias Chung, McBryde 474, phone: 231-3446, e-mail: mcchung@vt.edu

Office Hours: Tuesday 12:30pm - 1:30pm, Thursday 12:30pm -1:30pm, or by appointment if necessary


Prerequisites: Math 1114, Math 2224, Math 2214 and computer programming skills. MATLAB will be used as the standard computation environment.

Software: MATLAB is required for this course and can be purchased from The Software Distribution Office that is located in 3240 Torgersen Hall. See Student Software Distribution for more information. Note that MATLAB is available on the computers at the Math Emporium.

Course Topics: The course Math 4445 covers the following topics:

1. Numerical Algorithms
2. Round-off Errors
3. Direct Methods
4. Iterative Methods
5. Eigenvalue Problems
6. Least Square Problems
7. Nonlinear Equations
8. Nonlinear Systems

Grading: Students are expected to do reading and assignments as they are assigned. There will be two in-class midterms, and three term projects. Homework assignments will be assigned biweekly. The final grade will be calculated using the following weights: Each midterm will count 20%, each term project will count 10%, homework will count 10%, and the final exam will count for 20%. Percentages of at least 90, 80, 70, and 60 guarantee grades of at least A, B-, C-, D-, respectively.
In the homework and the term projects, there will be some computational work that must be done using MATLAB. Homework and term project submissions requiring MATLAB code must be submitted via the VT Scholar webpage and as a printout. **There will be NO late submissions allowed for any reason but you will be allowed to drop the lowest homework grade in calculating your final grade.**

Two students, i.e., a group of two, may turn in, one joined homework. In this case, both students will receive the same grade for the corresponding homework. The names of both students must be written on the homework assignment. Students must do the **term projects by themselves** according to the their own understanding of the material. The term projects must be submitted individually. No make up test for the midterm exams and final exam will be given.

**Tentative exam dates and project deadlines:**

- *Exam 1:* October 4, 2012, 11:00am to 12:15pm
- *Exam 2:* November 13, 2012, 11:00am to 12:15pm
- *Final Exam:* December 17, 2012, 1:05pm to 3:05pm
- *Project 1:* September 27, 2012 at 11:00am
- *Project 2:* October 30, 2012 at 11:00am
- *Project 3:* December 4, 2012 at 11:00am

**Honor Code:** Students work on midterm exams, term projects, and the final exam alone. It will be announced prior to each exam what aids (books, notes, calculators, etc.), if any, students will be permitted to use. Handed in homework may be discussed with other students and/or the instructor. In writing up an assignment, two students may work together and submit one homework. However, in writing up the assignment, the student can work only with their group member (without other groups). The honor code applies to all graded work in this course.

*The Virginia Tech Honor System* will be strictly enforced.

**Special Needs:** Students, who have any special needs or circumstances, should feel free to meet with me to discuss what can be done to help them fulfill the requirements of the class. Also, they may contact the Dean of Students who will see that their special needs are considered and appropriately addressed.