ACMS 60690 Numerical Analysis I, Fall 2014

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Textbook
There is no fixed textbook. Materials are chosen from different references below.

Course Description
This is an introduction course for graduate students to learn fundamental concepts, theory and techniques in numerical analysis and scientific computing.

Topics
1. Numerical Solution of Nonlinear Equations and Linear Systems
2. Approximating Functions
3. Numerical Differentiation and Integration
4. Numerical Solution of Ordinary Differential Equations
5. Numerical Solution of Partial Differential Equations

Prerequisites: Calculus, Linear Algebra, Differential Equations, a programming language (Fortran or C or C++ or matlab, etc.)

References


**Other information**

- **Office location**: Hurley Hall 176
- **Office phone**: (574) 631-6079
- **Office hours**: Tue 3pm – 4pm, or send me an email for an appointment.
- **Meeting time & place**: MWF 10:30am-11:20am, Pasquerilla Center 105 (Lecture)
- **Class website**: [http://www.nd.edu/~yzhang10/ACMS60690.html](http://www.nd.edu/~yzhang10/ACMS60690.html)
- **Homework**: Both theoretical and computational homework will be assigned regularly. Homework will be collected and graded.
- **Exams**: There will be one midterm exam and the final exam. Midterm exam will be the in-class exam. The final exam will be a take-home exam involving computer problems, or a combination of take-home exam and in-class exam.
- **Grades**: 35% homework, 20% midterm, 45% final exam. The final grade will be assigned by the total points as follows: *A+ ≥ 97, A ≥ 93, A- ≥ 90, B+ ≥ 87, B ≥ 83, B- ≥ 80, C+ ≥ 77, C ≥ 73, C- ≥ 70, D ≥ 60*. Note: The cut-offs of grades are sharp. *A+ will not be shown in your transcript.*
- **Honor Code**: Both examinations and homework are conducted under the [honor code](http://www.nd.edu/~yzhang10/ACMS60690.html). While cooperation in doing homework is permitted (and encouraged), copying is not.