Essential information.

Instructor: Dr. Adrian Sandu
- Phone: 231-2193
- E-mail: sandu@cs.vt.edu
- Office: 2242 KnowledgeWorks II
- Office hours: By appointment

Teaching Assistant: Mr. Austin Chennault
- E-mail: achennault@vt.edu
- Office: Torgersen Hall, Ground Floor
- Office hours: Mondays 4:30pm–5:30pm

Lecture: Tu-Th, 8:00AM–9:15AM, Holden Auditorium
Final exam (08T): 7:45AM–9:45AM, May 10, 2019

Prerequisites: CS-1044, MATH-2214, MATH-2224

Textbook.


Additional material.


About the course.

This class will introduce computational methods for numerical solution of non-linear equations, differential equations, approximations, iterations, methods of least squares, and other topics. Partially duplicates MATH 4554. If time permits we will discuss additional topics as well.

Grading.

The grade will be based on:

22% Part-term exam #1 (in-class)
22% Part-term exam #2 (in-class)
26% Final Exam (in-class)
30% Homework (theoretical and programming assignments)
Policies.

**In-class exams.** Exams are closed-books, closed-notes. However, you are allowed to bring in one letter-size piece of paper, with hand-written notes on both sides. These notes need to be in your own hand-writing. Rationale: preparing the notes for the exam is in itself a step towards learning the material.

**Homework.** You are allowed to discuss/brainstorm about homework problems with your colleagues. However, after the discussion ends, everyone needs to step away from the group, and solve the problems again on their own. Homework submissions that are highly similar raise the plagiarism flag.

Disclaimer.

Some information given to you in class may supersede the information in this syllabus or in the web page.

**Student Complaints and Academic Misconduct.**

Students are expected to comply to the Honor Code. If you have any problems, the first step is to discuss with me directly.

**Disabilities.**

Please let me know if you have a disability which requires special arrangements.

**Topics.**

| Weeks 1-2  | Computer arithmetic. |
| Weeks 3-4  | Linear systems of equations. |
| Weeks 5    | Taylor polynomials. |
| Week 6     | Rootfinding. |
| Week 7     | Interpolation. |
| Weeks 8-9  | Approximation of functions. |
| Weeks 10-11| Numerical integration and differentiation. |
| Weeks 12-13| Initial value problems. |
| Weeks 14-15| Additional topics as time permits. |