Class and Contact Information

Class: MWF 9:00-9:50, DSH 141
Instructor: Natalia Vladimirova
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Phone: 265-9995, 277-4803 (email preferred)
Webpage: WebCT Vista and math.unm.edu/~nvladimi
Office Hours: Tu 14:00-17:00 or by appointment, HUM 461
TA: Sergey Dyachenko
TA’s Office Hours: M 14:00-16:00, HUM 332
Lab: WF 14:00-15:00, DSH 143

Description: This is an introductory numerical analysis course. We study numerical methods to solve linear and nonlinear equations, to interpolate and approximate data, and methods for numerical integration and differentiation. We will implement all algorithms in MATLAB, and begin the course with a MATLAB tutorial. Additional course materials (homework assignments, example programs, etc.) will be available on the class webpage. Not all topics will be covered in the lectures, so students are expected to read the text. Topics not fully discussed in the text will be covered in the lectures, so students need to attend class regularly.

Tentative Course Outline

Week 1: Introduction to MATLAB (Appendix B)
Week 2: Computing Fundamentals (Chapter 0)
Weeks 3-4: Nonlinear equations (Chapter 1)
Weeks 5-6: Linear systems (Chapter 2)
Weeks 7: Interpolations (Chapter 3)
Week 8: Review and Test 1
Week 9: Spring break
Week 10: Interpolations (Chapter 3 Cont.)
Week 11: Least Squares (Chapters 4)
Weeks 12-13: Numerical differentiation and integration (Chapter 5)
Weeks 14-15: Differential equations (Chapter 6)
Week 16: Review and Test 2
Finals: Project due

Special arrangements: Students with disabilities or needing special arrangements must contact me ASAP so that we can be sure your needs are adequately met.

Grading: Your grade for this course is based on weekly homework (60%) two test (15% each), the final project (10%), and class participation (extra credit). Late homework will be accepted only with the instructor’s prior approval and are subject to penalties. Students with 3 missed homeworks will be dropped out of class or assigned non-passing grades.