

Math 218, Applied Mathematics

Dr. Xiaofeng Ren

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Office hours: 4:00 PM - 5:00 PM, WF, or by appointment.

Class time and place. 9:35AM - 10:50AM Wednesday and Friday, Monroe B34.

Textbook. Applied Mathematics, by J. David Logan, third edition .

Course Objectives:

1. Students will be able to use dimensional analysis.
2. Students will be able to analyze differential equations for stability and bifurcation phenomena.
3. Students will learn the importance of perturbation analysis. They will derive asymptotic properties of solutions to linear and nonlinear ODEs.
4. Students will learn calculus of variations and solve some minimization problems.
5. Students will learn to model physics problems from first principles.

Your grade.

Grade (100%) = Final exam (30%) + Two Midterm exams (40%) + Homework (30%)

Homework. There will be about one homework assignment every two weeks. Each assignment is due one week later.

Tentative schedule.

- Chapters 1, 2. Midterm exam I.
- Chapters 3. Midterm exam II.
- Chapters 8. Final exam (comprehensive).