

SYLLABUS

Math 235, Fall 2006

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Office Hours: Monday 1:00-2:30 and Wednesday 11:00-12:30. Otherwise, by appointment.

Math 235 Coordinates: Slot 3, Lectures in Jeffrey 126, Tutorial in Jeffrey 225.

Text: Fundamentals of Differential Equations, by Nagle, Saff and Snider, 6th ed.

Course Outline:

- Introduction to differential equations/direction field/Euler approximation (Chapter 1)
- Separable and linear differential equation. (Sections 2.1, 2.1, 2.6, 2.7)
- Applications of first order equations: Heating and cooling, fall of an object and electric circuit(Sect. 3.2-3.5)
- Homogeneous and non homogeneous higher order differential equations (Chapter 4, 6.1, 6.2)
- Electric circuits/electrical systems. (Section 5.6)
- Laplace transform (Chapters 7)
- Linear systems of differential equations(chapter 9)

Grading System: Final grade will be determined by a midterm, a comprehensive final exam, a quiz grade and a homework grade. The weight of each component is as it follows:

Midterm 30% Homework grade 15% Quiz Grade 10% Final Exam 45%

Exam Schedule: The midterm will be Wednesday, October 18.

Quiz and Homework: Homework will be due at the beginning of class according to the attached schedule. You will have to hand in only some of the homework problems, but **you should work all the problems**. There will be a quiz every two weeks, on Friday, starting September 22. The quiz will contain 2 problems from the homework (the one you handed in or not), and it will be at the end of class. I will drop the lowest quiz grade and the lowest homework grade, when determining your final quiz/HW grades.

Make-up policy: A make-up for midterm/quiz will be given only with documented valid university excuses (sickness, etc). The same applies for late homework.

Homework Assignment for Math 235

Assignment 1: due Wednesday, September 20.

Section 1.1: 1, 3, 4, 8, 14. Hand in all of them.

Section 1.2: 1, 4, 11, 12, 14, 21, 22. Hand in 4, 11, 12, 22.

Section 1.3: 2, 3, 4, 5. Hand in 2, 4, 5 (in Maple).

Assignment 2: due Wednesday, September 27.

Section 1.4: 1, 8, 9. Hand in 1, 9.

Section 2.2: 2, 3, 4, 5, 9, 15, 16, 18, 21, 26. Hand in 2, 3, 4, 11, 16, 18, 26.

Assignment 3: due Friday, October 6.

Section 2.3: 1, 3, 4, 5, 6, 11, 15, 16, 19, 20, 22. Hand in 3, 4, 15, 20, 22.

Section 3.3: 1, 5, 10. Hand in 5.

Section 3.4: 2, 5, 10. Hand in 2.

+ Maple assignment

Assignment 4: due Monday, October 16.

Section 3.5: 1, 2, 7. Hand both 1, 2, 7.

Section 4.2: 2, 3, 15, 16, 18, 27, 31, 41, 42. Hand in 15, 18, 27, 42.

Section 4.3: 3, 4, 15, 16, 23, 26. Hand in 15, 26.

Assignment 5: due Wednesday, October 25.

Section 4.4: 1, 3, 4, 5, 12, 16, 17, 18, 22, 35. Hand in 1, 4, 12, 16, 22.

Section 4.5: 6, 9, 10, 11, 18, 19, 20, 29, 30, 32, 33, 34, 35, 39. Hand in 19, 20, 30, 32, 33, 39

Assignment 6: due Wednesday, November 1.

Section 4.8: 2, 7, 8. Hand in 8.

Section 5.6: 1, 2, 4. Hand in 1, 2.

Section 7.2: 11, 12, 14, 15, 20. Hand in 12, 14, 15.

+ Maple assignment

Assignment 7: due Wednesday, November 8.

Section 7.3: 3, 6, 7, 10, 14, 17. Hand in 7, 10, 17.

Section 7.4: 3, 6, 12, 17, 25, 30. Hand in 3, 12, 30.

Assignment 8: due Friday, November 17.

Section 7.5: 4, 5, 10, 12, 13, 28. Hand in 5, 10, 12.

Section 7.6: 2, 3, 7, 9, 17, 18, 20, 30, 35. Hand in 7, 18, 20, 30, 35.

+ Maple assignment.

Assignment 9: due Friday, November 24.

Section 7.9: 3, 4, 12, 15, 16. Hand in 3, 12, 15.

Section 5.6: 11, 12, 13. Hand in 12, 13.

Section 9.4: 3, 4, 5, 8, 13, 16, 19, 20. Hand in 3, 8, 20.

Assignment 10: due Wednesday, November 29.

Section 9.5: 2, 3, 11, 14, 22, 25. Hand in 2, 14, 25.

Section 9.6: 2, 3, 6, 7, 13, 14. Hand in 2, 7, 14.