Instructor: Charles Tier  Office: E1 212  Office Hours: MWF 12:45-1:45 or appointment

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Web Site: mypages/∼ctier/Math252 (check often)


Prerequisites: Math 152

Course Topics

- Chapter 1 - Introduction to Differential Equations
- Chapter 2 - First Order Equations/Modeling
- Chapter 4 - Higher Order Linear Equations
- Chapter 5 - Modeling and BVP’s
- Chapter 6 - Series Solutions
- Chapter 7 - Laplace Transform
- Appendix II - Matrices
- Chapter 8 - Systems of Linear First Order Equations

Course Objectives

- Students will be able to classify and solve first order DE’s and IVP’s of various types: especially separable, exact, linear, and others reducible to them.
- Students will be able to solve higher order linear DE’s and IVP’s having constant coefficients and be able to use the method of undetermined coefficients and variation of parameters.
- Students will be able to obtain power series solutions (about ordinary points) of second order linear DE’s with variable coefficients.
- Students will be able to manipulate Laplace transforms and to solve linear IVP’s using them.
- Students will be able to solve systems of first order linear DE’s.
- Students will be able to solve a variety of physical problems modeled by first order and linear second order IVP’s.
Required Coursework

Hourly Exams: There will be two hour exams during the semester - tentative dates: Exam 1 - Sept. 25, Exam 2 - Nov. 6. Unless otherwise stated, No calculators, cell phone or electronic devices will be allowed in the exams. In general, there will be no make-up exams. If you miss an exam with a documented reason of illness, etc., your score on the final exam will be used to replace the missing exam score. Undocumented reasons include oversleeping, forgetting the location of the exam, being kidnapped by aliens, etc.

Final Exam: A comprehensive final exam will be given during the IIT final exam week (date TBA). No calculators or electronics will be allowed in the final exam.

Quizzes: Short quizzes will be given weekly with questions similar to the homework problems. The lowest quiz grade will be dropped. No make-up quizzes will be given

Homework: Homework assignments will be posted regularly on WebAssign. Please review the information on the WebAssign Help link on the course webpage. You are encouraged to discuss homework problems but only with another student in Math 252 this semester, the TA, an IIT ARC tutor, or the instructor. It is recommended that you practice a problem until you can solve it quickly without calculator or Mathematica in order to prepare for exams. The more problems you do the greater your understanding of the material and better your grade. Differential Equations is not a spectator sport.

Projects: Projects may be assigned during the semester. Projects and due dates will be posted on the course web page.

Solutions for homework, quizzes, and exams must be written clearly, legibly, and concisely and will be graded on mathematical correctness and presentation. Points will be deducted for sloppiness, incoherent or insufficient explanation, or for lack of supporting rationale.

Grading Policy (approximate percentages)

- Two - Hour Exams - 45%
- Final Exam - 30%
- Quizzes 10%
- Homework 15%

Tentative Grading Distribution:

- A: 86-100
- B: 75-85
- C: 60-74
- D: 51-59
- E ≤ 50
Disability Assistance

Reasonable accommodations will be made for students with documented disabilities. In order to receive accommodations, students must obtain a letter of accommodation from the Center for Disability Resources and then make an appointment to speak with me as soon as possible during my office hours. The Center for Disability Resources is located in the Life Sciences Building, room 218, 312-567-5744 or disabilities@iit.edu.

Class Etiquette and Rules

We are all members of the IIT academic community. We should treat each other with respect and use proper ethics in our work. You should be aware of the following.

- Attendance is mandatory and will be taken in every lecture, lab, and recitation session. Students are required to attend all classes. Lack of attendance can be reflected in the final grade.

- During all classes, students are prohibited from using iPods, notebook computers, etc. Cell phones should be off and are not allowed for calls or text messaging. A ringing phone will lead to a penalty.

- Refrain from talking in class and in general avoid behaviour that will distract others’ attention.

- Academic Integrity: By writing your name on your work you certify that you have adhered to the homework and lab policy, and that all exam work is your own without any unauthorized assistance or aids. The Code of Conduct in the IIT Student Handbook applies, and violations will be prosecuted accordingly.

- Talk to your instructor about any problems that may prevent you from performing up to your expectations. Any concerns about the class pace, material, sections, quizzes and homework should be promptly discussed with your instructor.

- Missed Work: Assignments/exams/labs cannot be made up except as approved by the instructor (e.g., due to official IIT activity or documented emergency). An exam missed for an excused reason must be made up promptly upon the students return, the time frame being at the discretion of the instructor.