

001 Lecture	MWF 11:25-12:40	E1 123
002 Lecture	MWF 1:50-3:05	WH 116

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

**E-mail:** ctier [at] iit [dot] edu

**Web Site:** mypages/~ctier/Math252 (check often)

**Textbook:** Zill, *Differential Equations, 9th. ed.* Brooks Cole.

**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 - Feb. 11, Exam 2 - Apr. 1. Unless otherwise stated, *calculators* will **not** be allowed during the exams.

**Final Exam:** A comprehensive final exam will be given during the IIT final exam week (date TBA). Unless otherwise stated, *calculators* will **not** be allowed during the final exam.

**Quizzes:** Short quizzes may be given weekly usually on the day a homework assignment is due with questions similar to the homework problems. The lowest quiz grade will be dropped.

**Homework:** Homework assignments are posted on the homework page and are due each week. The assignments may be collected at the beginning of class on the due date and graded. To be successful in the course, you need to complete all the assigned problems. 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. When you write up the solution, however, you must not consult any notes or other aids from these discussions.

**Projects:** Projects will 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 - 50 %
- Final Exam - 35%
- Quizzes 10%
- Projects and Homework 5%

Tentative Grading Distribution:

- A: 86-100
- B: 75-85
- C: 60-74
- D: 51-59
- E  $\leq$  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.