Math 514 (Elementary Differential Equations) Course Info – Spring 2009

1. **Lecture Time and Place:** 11:00AM - 12:20PM, TuTh, *Carnegie Hall, Room 313*

2. **Instructor:** Lixin Shen. Office: Carnegie Hall, Room 206D

3. **Office Hours:** 2:00–3:00 pm, TuTh, or by appointment

4. **Contact Information:**

    (a) **Office Telephone Number:** (315)443-2889

    (b) **E-mail Address:** lshen03@syr.edu

5. **Textbook:** *Elementary Differential Equations and Boundary Value Problems* by William E. Boyce and Richard C. DiPrima

6. **Material to be covered**: The course covers selected sections of Chapters 1, 2, 3, 6, and 7. These sections are 1.1, 1.2, 1.3, 2.1–2.4, 2.6, 2.8, 3.1–3.7, 6.1–6.4, 7.1–7.5

7. **Prerequisites**: 12 credit hours of calculus or equivalent. Credit will not be given for both MAT 514 and MAT 485. Students must be able to:

    (a) take partial derivatives

    (b) set up and evaluate integrals

    (c) do integration by parts

    (d) work with elementary linear algebra

8. **Course Description**: This course introduces students to basic topics of ordinary differential equations. We will cover such topics as:

    (a) Classification of Differential Equations

    (b) Method of Integrating Factors

    (c) Separable Equations

    (d) Exact Existence and Uniqueness Theorem

    (e) Second Order Linear Equations

    (f) Complex Roots of the Characteristics Equations

    (g) Variation of Parameters

    (h) Laplace Transform

    (i) Systems of First Order Linear Equations

    (j) Matrices, Eigenvalues and Eigenvectors

9. **Exams**: There will be two exams during the semester and a cumulative final examination.

   - Exam 1 is scheduled on **Thursday, February 19**
   - Exam 2 is scheduled on **Thursday, April 2**
   - Final Exam is scheduled on **Tuesday, May 5**

10. **Make-up Exams**:

    A make-up exam will be given only to those with a valid excuse from a physician or other official. Typically, you will not be allowed to make up more than one exam this way. If you cannot justify your absence from an exam, then you will receive a grade of zero for that exam.

11. **Homework:** Unless otherwise indicated, on Tuesday of each week you will be expected to turn in some of the problems from the sections covered during the previous week. If Tuesday is a holiday, then the problems are due on Thursday. Homework problems are listed in the Table 1. The problems to be turned in will be announced on Thursday of the previous week.

Section	Problems
1.1	1,3, 17, 20, 22
1.2	3,7,9,15,19
1.3	2,4,6,10,18,20
2.1	13,15,18,31
2.2	2,4,6,23,35,36
2.3	4,8
2.4	2,8,15,21,28
2.6	4,8,21,27,31
2.8	1,5,9
3.1	2,10,15,22,28
3.2	4,5,11,14,16,18,23,24
3.3	3,7,12,15,18,21
3.4	2,5,7,9,11,18,20
3.5	2,5,9,14,25,27,36
3.6	2,3,6,8,13,15,19,23,26
3.7	3,4,7,9,14,16,18
6.1	3,6,7,9,18,19,22,24
6.2	2,4,8,10,15,17,20,22,26,30,34
6.3	3,5,6,8,12,13,15,25
6.4	1,3,9,11
7.1	1,3,8,10
7.2	2,9,11,13,16,23,24
7.3	1,2,3,6,10,17,21,24
7.4	
7.5	2,4,6,10,12,14,18

Table 1: Homework Problems

These problems will be graded by a part-time grader. You may consult with each other on homework problem sets, BUT only submit work which is in your own words AND be sure to cite any sources of help (either texts or people). **Homework turned in late cannot be**

graded, and you will not receive credit for it. If you are unable to come to class, you may turn in your homework by putting it in my mailbox or slipping it under my office door.

12. **Attendance**: You are expected to attend every class, every hour exam, and the final exam. If because of illness, or any other reason, you miss class more often than once in a week, you should see me in office hours and justify your absences. If you miss a class, it is your responsibility to obtain a copy of the lecture notes for that class from another student. You are also responsible for any announcements about changes to the course schedule, the exam schedule, or the course requirements that were made during that class. Missing class on a regular basis for any reason (job, another course, labs, athletic events, weekend trips home, vocations, laziness, etc.) is not acceptable behavior. Repeated absence may affect your right to make up exams and are grounds for a reduction of your course grades.

13. **Academic Honesty:** Maintaining academic honesty is vital in protecting your efforts in the course. Accordingly, cheating will not be tolerated. The penalty for cheating will range from a zero on the relevant work or entire exam, to a **F** in the course. In accordance with official policy, all violations will be reported to the College of Arts and Science for the further action.

14. **Students with Disabilities:** Students who are in need of disability-related academic accommodations must register with the Office of Disability Services (ODS), 304 University Avenue, Room 309, 315-443-4498. Students with authorized disability-related accommodations should provide a current Accommodation Authorization Letter from ODS to the instructor and review those accommodations with the instructor. Accommodations, such as exam administration, are not provided retroactively; therefore, planning for accommodations as early as possible is necessary. For further information, see the ODS website, Office of Disability Services http://disabilityservices.syr.edu/

15. **Grading Policy:** The course grade will be computed as follows:

   - each of the two exams in class counts **20%**
   - homework counts **20%**
   - class participation and quizzes count **5%**
   - the final exam counts **35%**

Your letter grade for the term then comes from the following table.

93–100	A	77–79	C+
90–92	A-	73–76	C
87–89	B+	70–72	C-
83–86	B	60–69	D
80–82	B-	0–59	F

————————————————

Any suggestions and comments from you are **highly appreciated**.