

MAT 414 – Introduction to Ordinary Differential Equations

Spring 2017, Section M002

TuTh 9:30am-10:50am, 219 Carnegie Hall

Professor: Jani Onninen

Office: 304A Carnegie Library

Phone: 443-1700

Office hours: TuTh 3:00-4:00pm, W, 11:00-12:00pm, and by appointment.

email: jkonnine@syr.edu

Prerequisites: 12 credit hours of calculus or equivalent. Credit will not be given for both MAT 485 and MAT 414. Students are expected to be able to:

- take partial derivatives,
- set up and evaluate integrals,
- do integration by parts, and
- work with elementary linear algebra.

Textbook: *Elementary Differential Equations and Boundary Value Problems* 10th edition, William E. Boyce and Richard C. DiPrima. We will cover parts of chapters 1-3, and 5-6 including the analytic and qualitative aspects of first order differential equations (linear and nonlinear), second order linear equations, power series solutions and Laplace transforms. The book is well-written and you are encouraged to read the new material before class.

Calculators: A calculator is not required for this course. In particular, *no calculators will be allowed on the exams or quizzes*. Use or availability of any calculator or other electronic device on the exams or quizzes will be a violation of the Academic Integrity Policy. You may use calculators for learning purposes and for solving homework. On exams and quizzes complete solutions, and not merely answers, must be presented to receive credit.

Grading:

First test: Thursday, February 23, 9:30am–10:50am. 25%

Second test: Thursday, April, 6, 9:30am–10:50am. 25%

Final exam: Thursday, May 4, 12:45pm–2:45pm. 30%

Homework and quizzes: 20%

Tests will be given in lecture. The final exam will be cumulative. There will be **no make-ups** for the test or final exam. If you have an excused absence for one of the tests, your grade on the relevant portion of the final will be used.

Homework:

*I hear, and I forget;
I see, and I remember;
I do, and I understand.*

-Proverb

The key to success in this course is to master the homework. Homework will be assigned after each class and collected weekly at the beginning of class, usually on Thursdays, not including exam weeks. **No late homework** will be accepted. Homework has to be neat and professional when submitted. A portion of the homework problems will be graded. You are encouraged to discuss the homework problems with your classmates and to work together, but submitted assignments must be written up individually. The exam problems will be very similar to those in the homework and the examples shown in class.

Quizzes: Quizzes will be given about once a week. They will be announced in advance. There will be **no** make-ups for any of these quizzes, but I will drop the two lowest scores when I compute your final quiz grade.

Attendance: You are expected to attend every class. If you **must** miss a class for some reason, it will be up to you to find out from me or other members of the class what you missed including any announcements concerning homework, quizzes, or exams that were made during the class. You are highly encouraged to ask questions in class.

Students with Disabilities: If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS), <http://disabilityservices.syr.edu>, located in Room 309 of 804 University Avenue, or call 315-443-4498 for an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible coordinating disability-related accommodations and will issue students with documented Disabilities Accommodation Authorization Letters, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible. You are also welcome to contact me privately to discuss your academic needs although I cannot arrange for disability-related accommodations.

Academic Integrity: The Syracuse University Academic Integrity Policy holds students accountable for the integrity of the work they submit. Students should be familiar with the Policy and know that it is their responsibility to learn about instructor and general academic expectations with regard to proper citation of sources in written work. The policy also governs the integrity of work submitted in exams and assignments as well as the veracity of signatures on attendance sheets and other verifications of participation in class activities. Serious sanctions can result from academic dishonesty of any sort. For more information and the complete policy, see <http://academicintegrity.syr.edu>

Religious observances policy. SU religious observances policy recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe

religious holidays according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to are religious observance provided they notify their instructors before the end of the second week of classes. For fall and spring semesters, an online notification process is available through MySlice (Student Services -> Enrollment -> My Religious Observances) from the first day of class until the end of the second week of class.

Tips for success in this course:

- 1) It is absolutely essential that you understand how to solve all the assigned problems. Once you understand how to solve a problem, write your solution down neatly and in full detail with explanations that make your reasoning clear.
- 2) Don't fall behind! The material is built on cumulatively, thus you need to stay on top of the material at every stage. If you are having difficulty, see me immediately to discuss the problem!
- 3) Take advantage of office hours.
- 4) Discussing problems with a classmate is very useful.
- 5) Again, questions in class are strongly encouraged.
- 6) I believe you can be successful in this course! You should expect to work hard. Don't get discouraged if you find some of the material difficult. Be persistent and patient! If you follow the above suggestions, your experience in this course will be a rewarding one.

I look forward to a great semester!