

**MATH246 Differential Equations for Scientists and Engineers
(Summer II 2018)**

Instructor: Martin Molina-Fructuoso
Office Hours: TuTh 11:00-12:00, MTH 4302
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Lecture: MTuWThF 9:30-10:50, MTH 0304

Course Webpage. A tentative lecture schedule, MATLAB projects, and suggested homework, as well as other details concerning the contents of the course can be found at http://www2.math.umd.edu/~martinmf/math246_summer2018.html

Course Description. An introduction to the basic methods of solving ordinary differential equations. Equations of first and second order, linear differential equations, Laplace transforms, numerical methods and the qualitative theory of differential equations.

Prerequisites. Required: MATH141 (Calculus II). Recommended: MATH240 (Linear Algebra), MATH241 (Calculus III)

Books.

- The official textbook for this course are Prof. Levermore's notes:
<https://courses.math.umd.edu/math246/NODE/1718S/main.html>
You will need to log in with your UMD credentials.
- **Differential Equations with MATLAB**, Brian R. Hunt, Ronald L. Lipsman, John E. Osborn, and Jonathan M. Rosenberg, J. Wiley and Sons, Third Edition.

Other Useful Books.

- **Elementary Differential Equations and Boundary Value Problems**, William E. Boyce, Richard C. DiPrima, and Douglas B. Meade, Tenth Edition.
- **Differential Equations, Dynamical Systems, and an Introduction to Chaos**, Morris W. Hirsch, Stephen Smale, and Robert L. Devaney. Second Edition.
At the end of the course you should be able to read this book on your own if you are very interested in systems of differential equations.

Grading. There will be 650 attainable points distributed as follows:

Exams	(3 × 100)
Quizzes	(100 total)
Matlab	(5 × 20)
Final Exam	(150)

Grades will be assigned to final scores in the following manner (the thresholds might be adjusted slightly, but always in your favor):

90% of 650 or higher	A
80% of 650 or higher	B
70% of 650 or higher	C
lower than 50% of 650	F

Suggested Homework. Suggested homework will be assigned on the course website, but not it will not be graded. It is crucial that you solve these problems to have success in this course.

Exams. There will be 3 exams during the lecture time. Each exam is worth 100 points. The dates for these exams will be posted on the course website.

Quizzes. There will be 8 quizzes. There will be no makeup quizzes, but the two lowest scores will be dropped. The average of the remaining quizzes will be then multiplied by 100.

MATLAB Projects. There will be 5 MATLAB projects, which will be posted on the course website. You should work in groups of three people. Use the "publish to PDF" option in MATLAB and then print the file to submit your work. No late submissions will be accepted.

Final Exam. The comprehensive final exam will be on August 17 (Friday) during lecture time.

Academic Integrity. Students are expected to honor the University of Maryland Honor Pledge at all times:

I pledge on my honor that I have not given or received any unauthorized assistance on this assignment/examination.

To learn about what is considered academic dishonesty and its consequences visit <http://www.shc.umd.edu/SHC/StudentAcademicDishonesty.aspx>.

ADS. The University of Maryland provides upon request appropriate academic accommodations for qualified students with disabilities. Please let me know as soon as possible if this is your case. For more information visit <https://www.counseling.umd.edu/ads/>.