

Course Syllabus

Math 204: Differential Equations

Koç University, Fall 2021

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Textbook: W. E. Boyce, R. C. DiPrima, and D. B. Meade, Elementary Differential Equations and Boundary Value Problems, 11th Global Edition, 2017.

Website: http://home.ku.edu.tr/~vkalantarov/math204_fall21/

Topics to be covered: Introduction to differential equations, First order ordinary differential equations (ODEs), Second and higher order ODEs, Power series solution of ODEs, Laplace transform and its applications, Systems of linear ODEs, Partial Differential equations (PDEs) and Fourier Series.

Objective: To provide the student with a basic knowledge of ODEs and PDEs. This includes the general theory of and solution techniques for general first order ODEs, second order linear ODEs, systems of first order ODEs, Fourier series, and initial boundary value problems for the heat and wave equations.

Homework: Suggested homework problems will be assigned regularly but not collected for grading. Students are required to solve these problems in order to gain a better understanding of the subject.

Evaluation method: Students' progress will be evaluated according to their performance in two midterm exams and a final exam. Midterm exams will contribute to the total grade as 30% each. The final exam, which will cover all the material of the course, will contribute as 40%.

Eligibility to take the final exam: In order to become eligible to take the final exam, a student must not miss both the midterm exams and his/her average grade in midterm exams should not be below 30 out of 100.

Make-ups & Remedial Exams: If a student misses a midterm exam and has a valid excuse, his (her) grade in the final exam will be substituted for the grade in the missed midterm exam(s). If (s)he also misses the final exam, (s)he will be given zero in the midterm exam(s) that (s)he has missed regardless of whether (s)he has a valid excuse or not. If a student misses the final exam and has a valid excuse, (s)he will be given a make-up exam. Students who fail the course but have a chance of passing it by taking the remedial exam will be allowed to take this exam.

Rules for online education: The lectures will be pre-recorded and made available online as videos. The electronic files of these video lectures and their content must not be made available to third parties; students are not permitted to share any part of these videos in the social media platforms or post them in the internet.

Suggested Method of Study: Students are advised to study the subjects covered in class immediately after the lectures. Reading the lecture notes and the book is necessary for grasping the subject, but it is by no means sufficient. Students must try to reproduce the definitions, calculational techniques, and proofs of the theorems covered in class on their own, and apply them to different problems. They are expected to spend an average of three hours per week on studying the material covered in class in addition to the time spent on suggested homework problems.

Academic dishonesty: If a student is caught cheating in an exam, s/he will be punished according to the YÖK regulations. These consist of one or two semesters of prohibition from attending the university.