

MATH 202 DIFFERENTIAL EQUATIONS SUMMER 2021

Lectures:

- Wednesday 11:40-13:30, Thursday 15:40-17:30, Friday 11:40-14:30

Recitations:

- Both sections will be held on Thursday 17:40-19:30

Instructor: Asst.Prof. Sibel ŞAHİN (Office hours: By appointment via email: ssahin@sabanciuniv.edu)

Course Link (Zoom): <https://sabanciuniv.zoom.us/j/7917007718>

Course Description: This course covers techniques for solving ordinary differential equations (ODE). Topics include first-order ODE, second and higher-order linear ODE, the Laplace transform and if time permits the systems of first-order linear ODE.

Textbook: *Elementary Differential Equations and Boundary Value Problems*, by W. E. Boyce and R. C. DiPrima, published by Wiley, 10th Edition, 2013.

Exams: There will be one midterm exam, one final exam and one make-up exam (**August 21st**).

For these proctored exams, your webcam and microphone should be on during the exam. In the case of non-compliance with this and other declared exam procedures, your exam will be void. Make sure to check that your webcam and microphone function properly before the exam.

Make-up policy: There is only one make-up exam for all exams. Anyone who misses an exam can take it. Make-up exam is to be **counted for only one of the missed exams. There is no make-up exam for the make-up itself.** The number of make-ups that is granted due to sick leave in a semester is one.

GRADING PLAN

	Weight
Midterm: July 14th	40%
Final Exam: August 20th	60%

Attendance: It is not compulsory but strongly recommended.

Academic Honesty: Academic dishonesty is not an acceptable way of conduct and it will not be tolerated. Cheating (such as copying answers from others or using unauthorized materials during an exam) and any dishonest conduct will be immediately reported to Dean's Office for disciplinary action in accordance with University regulations.

TENTATIVE WEEKLY SCHEDULE

Week	Dates	Sections/Topics Covered	
1	July 1-2	Sec. 1.3 Classification of Differential Equations Sec. 2.1 Linear Equations; Method of Integrating Factors Sec. 2.2 Separable Equations Sec. 2.4 Differences Between Linear and Nonlinear Equations Sec. 2.6 Exact Equations and Integrating Factors Sec. 3.1 Homogeneous Equations with Constant Coefficients	
2	July 7-8-9	Sec. 3.2 Solutions of Linear Homogeneous Equations; the Wronskian Sec. 3.3 Complex Roots of the Characteristic Equation Sec. 3.4 Repeated Roots; Reduction of Order Sec. 3.5 Nonhomogeneous Equations; Method of Undetermined Coefficients Sec. 3.6 Variation of Parameters	
3	July 14		Midterm
4	July 28-29-30	Sec. 4.1 General Theory of n th Order Linear Equations Sec. 4.2 Homogeneous Equations with Constant Coefficients Sec. 4.3 The Method of Undetermined Coefficients Sec. 4.4 The Method of Variation of Parameters	
5	August 4-5-6	Sec. 6.1 Definition of Laplace Transformation Sec. 6.2 Solution of Initial Value Problems Sec. 6.3 Step Functions	
6	August 11-12-13	Sec. 6.4 Differential Equations with Discontinuous Forcing Functions Sec. 6.5 Impulse Functions Sec. 6.6 The Convolution Integral	
7	August 18-19-20	Sec. 7.4 Basic Theory of Systems of First Order Linear Equations Sec. 7.5 Homogeneous Linear Systems with Constant Coefficients Review	Final