The Department of Mathematics

2020–21–A term

Course Name Ordinary Dffierential Equations for Industrial Engineering and Management

Course Number 201.1.9481

Course web page
https://www.math.bgu.ac.il//en/teaching/fall2021/courses/ordinary-differential-e

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Office Hours https://www.math.bgu.ac.il/en/teaching/hours

Abstract

Requirements and grading[1]

Course topics

Ordinary Dffierential EquationsBasic concepts: ordinary dffierential equations, dffierential equations of the first order, general solution, initial value problems, partial solutions. Linear dffierential equations with separable variables, exact equations, integration factor, homogeneous equations. Existence and Uniqueness theorem (without proof). System of dffierential equation of first order, solution by matrixes. Linear dffierential equations of second order, non- homogeneous equations, Wronskian. Linear dffierential equations of n-th order.Integral TransformsLaplace transform, properties of the Laplace transform. Convolution of two functions and convolution theorem. Heavyside (unit step) function, ?-function (Dirac), particularly continuous functions, their Laplace transform. Solution of non-homogeneous dffierential equations by Laplace transform.Fourier transform, properties of the Fourier transform. Convolution of two functions and convolution theorem. Cosines and Sine Fourier transform. Solution of integral equations by Fourier transform..

[1]Information may change during the first two weeks of the term. Please consult the webpage for updates