The Department of Mathematics
2023–24–A term

Course Name  Partial Differential Equations For Biotechnology

Course Number  201.1.9591


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

Abstract

Requirements and grading

Course topics

.1 Classification of linear Partial Differential Equations of order ,2 canonical form.

.2 Fourier series (definition, Fourier theorem, odd and even periodic extensions, derivative, uniform convergence).

.3 Examples: Heat equation (Dirichlet’s and Newman’s problems), Wave equation (mixed type problem), Potential equation on a rectangle.

.4 Superposition of solutions, non-homogeneous equation.

.5 Infinite and semi-infinite Heat equation: Fourier integral, Green’s function. Duhamel’s principle.

.6 Infinite and semi-infinite Wave equation: D’Alembert’s solution.

.7 Potential equation on the disc: Poisson’s formula and solution as series.

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