



FIRST COURSE ON PARTIAL DIFFERENTIAL EQUATIONS - I

PROF. P. S. DATTI

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PRE-REQUISITES : Multi variable Calculus, Linear Algebra, ordinary Differential Equations

INTENDED AUDIENCE : Mathematics, Science and Engineering

COURSE OUTLINE : This is intended to be a first course on the subject Partial Differential Equations, which generally requires 40 lecture hours (One semester course). So, we plan to make this course in two parts – 20 hours each. We plan to offer the first part starting in January 2021 and second part may be in July 2021 or latest by 2022.

ABOUT INSTRUCTOR :

Prof.P.S.Datti is a former faculty at TIFR-CAM, Bangalore.

Prof.A.K. Nandakumaran is a Professor at the Department of Mathematics, Indian Institute of Science, Bangalore.

COURSE PLAN :

Week 1: Introduction, Preliminaries

Week 2: First Order Equations Method of Characteristics

Week 3: First Order Equations Method of Characteristics (Cont'd)

Week 4: Classification

Week 5: Laplace and Poisson Equations

Week 6: Laplace and Poisson Equations (Cont'd)

Week 7: 1D Heat equation

Week 8: 1 D wave equation