FIRST COURSE ON PARTIAL DIFFERENTIAL EQUATIONS - II

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PRE-REQUISITES : First Course on Partial Differential Equations – I (Video Course), Functional Analysis, Integration Theory

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

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

COURSE PLAN :

 Week 1: Hamilton Jacobi Equations

 Week 2: Conservation Laws

 Week 3: Conservation Laws

 Week 4: Laplace and Poisson Equations – Further topics

 Week 5: Laplace and Poisson Equations – Further topics

 Week 6: Multi-Dimensional Heat Equation

 Week 7: Multi-Dimensional Wave Equation

 Week 8: Introduction to Weak solutions