



Mechanical Engineering
Indian Institute of Science
Bengaluru, 560 012
India

Indian Institute of Science

E-mail: chair.me@iisc.ac.in
URL: www.mecheng.iisc.ac.in
Telephone: +91 (80) 2293 2332 (office)



ME 303(JAN) 3:0

Partial Differential Equations with Applications

Instructor(s): Ventaka R Sonti, Gaurav Tomar

Course description:

Classification of partial differential equations: Linear, Semilinear, Quasi linear and Nonlinear partial differential equations. Hyperbolic, Elliptic and Parabolic Equations. Method of solutions: integral curves and surfaces of PDEs, method of characteristics, separation of variables, Green's functions for elliptic problem and integral transforms. Complex potential theory. Introduction to Holder spaces, Banach spaces and Sobolov spaces. Basics of asymptotic analysis.

Prerequisites:

Resources:

1. Introduction to Partial Differential Equations with Applications by Zachmanoglou and Thoe
2. An Introduction to Partial differential equations by Renardy and Rogers
3. Applied Partial Differential Equations by R Haberman
4. Elements of Partial Differential equations by Ian N. Sneddon
5. Introductions to Partial differential equations by L.C. Evans

Outcomes:

Additional information:

Course website: