

Math 512-1 Partial Differential Equations 4 credit units

1. Elementary theory of distributions (Convolution and differentiation).
2. Types of partial differential equations
3. Fundamental solutions of some linear differential operators such as the Laplacian, the heat, and the wave operators.
4. Initial and boundary value problems for parabolic and hyperbolic equations (existence and uniqueness of solutions)
5. Generalizations and applications.
6. Solutions of mixed problems in Sobolev spaces.