

King Fahd University of Petroleum and Minerals

Department of Mathematics & Statistics

Math 568 Syllabus, Term 201

Instructor: Dr. Jaecheon Joo

The Course Code and Name: Math 568, Advanced Partial Differential Equations I

The Course Credit Hours: 3-0-3

The Course Objective: The primary aim of this course is to introduce students fundamental background in PDE for their further studies.

The Course Content: First order PDE, Characteristic methods, Classification of second order PDE's, Wave equation, Heat equation, Laplace equation, Fourier series and transform, Sobolev spaces, Hilbert space methods for Poisson equation.

The Course Prerequisite: Ordinary Differential Equations, Advanced Calculus (Undergraduate Real Analysis) I, II.

Textbook: M. Shearer and R. Levy, "Partial Differential Equations – An introduction to theory and applications", 2015, Princeton University Press.

References:

1. L. Evans, "Partial Differential Equations", 2nd ed.
2. Q. Han, "A basic course in Partial Differential Equations", 1st ed.
3. F. John, "Partial Differential Equations", 4th ed.

The Grading Policy: 3 online tests (15% each), Final 25%, HW's (30%).