


Curriculum Plan: B. Sc. (Hons) Maths II Year (Semester IV), Partial Differential Equation (Including Practical) 2021-22

Teacher Profile: Sanjay Kumar Department of Mathematics Kalindi College, University of Delhi, Delhi- 110008 Mobile: +91-8800982887 E- mail: skmpushkar@gmail.com		Marks Distribution	Theory	75 Marks
			Practical	50 Marks
			Internal Assessment	Assignments 25 Marks
		Classes Assigned	Lectures	4 per week
Practical Groups (per week per Student)	4 per week			
Reference	[1]	Myint-U, Tyn & Debnath, Lokenath. (2007). Linear Partial Differential Equation for Scientists and Engineers (4th ed.). Springer, Third Indian Reprint, 2013.		
Section	Week	Topic		
Session 1	Beginning /1st week January 1- 8, 2022	Introduction, Classification, Construction and geometrical interpretation of first order PDE.		
	2nd week January 10-15, 2022	Method of characteristic and general solution of first order PDE.		
Session 2	3rd week January 17-22, 2022	Canonical form of first order PDE.		
	4th week January 24-29, 2022	Method of separation of variables for first order PDE.		
	5th week January 31- February 5, 2022	Gravitational potential, Conservation laws and Burger's equations.		
	6th week February 7-12, 2022	Classification of second order PDE, Reduction to canonical forms.		
Session 3	7th week February 14-19, 2022	Equations with constant coefficients, General solution.		
	8th week February 21-26, 2022	Mathematical modeling of vibrating string and vibrating membrane.		

	9th week February 28- March 5, 2022	Cuchy problem for second order PDE, Homogeneous wave equation.	
	10th week March 7-12, 2022	Initial boundary value problems, Non- homogeneous boundary conditions.	
Session 4	11th week March 21- 26, 2022	Finite strings with fixed ends, Non-homogeneous wave equation, Goursat problem.	
	12th week March 28- April 02, 2022	Method of separation of variables for second order PDE.	
	13th week April 4-9, 2022	Vibrating string problem, Existence and uniqueness of solution of vibrating string problem.	
	14th week April 11-16, 2022	Heat conduction problem, Existence and uniqueness of solution of heat conduction problem.	
	15th week April 18-27, 2021	Non-homogeneous problem.	
Dispersal of classes, preparation leave and practical examination begin April 28, 2022			