1.	Title of the course	Fractal Geometry
2.	Course number	MA613L
3.	Structure of credits	3-0-0-3
4.	Offered to	PG
5.	New course/modification to	Modification To MA6103/2
6.	To be offered by	Department of Mathematics and Statistics
7.	To take effect from	July 2022
8.	Prerequisite	
9.	**Course Objective(s):** The theory of fractal geometry provides a general framework for the study of sets that had been thought to be exceptional oddities. This is an active area of research and both the theory and applications of fractal geometry are still being developed. The course is an introduction to a circle of topics in fractal geometry and chaotic dynamics.	
10.	**Course Content:** Classic Examples of Fractals, Metric Space, Equivalent Spaces, Classification of subsets and the Space of Fractals, Transformations on Metric Spaces, Contraction Mappings, and the Construction of Fractals Chaotic Dynamics on Fractals, Hausdorff Measure and Dimension, Alternate definitions of Dimensions and Techniques for calculating the dimension, Graphs of Functions and Fractal Interpolations, Iteration of Complex Functions: Julia Sets and Mandelbrot Sets, Measures on Fractals.	
11.	**Textbook(s):** 1. Barnsley M F, Fractals Everywhere, 3rd Edition, Dover Publications (2012). 2. Falconer K, *Fractals Geometry: Mathematical Foundations and Applications*, 3rd Edition, Wiley Publications (1990).	
12.	**Reference(s):** 1. Falconer K, *The Geometry of Fractal Sets*, Cambridge University Press (1986). 2. Pesin Y and Climenhaga V, *Lectures on Fractal Geometry and Dynamical Systems*, American Mathematical Society (2009).	