Curriculum Plan: B. Sc. (Hons) Mathematics (Semester V)- METRIC SPACES (2024-25). ODD SEM

DR. ABHISHEK KR. SINGH

Assistant Professor
Department of Mathematics
Kalindi College
University of Delhi
Delhi- 110008
Mobile: +91-8375834510
Email: abhishek@kalindi.du.ac.in

Marks Distribution	Theory -
	Internal Assessment-
Classes Assigned	Lectures: 3 per week

References	Shirali, Satish & Vasudeva, H. L. (2009). Metric Spaces. Springer. Indian Reprint 2019.
Week	**Topics**
1st week	Definition, examples, sequences, and Cauchy sequences,
2nd week	Complete metric space; Open and closed balls,
3rd week	Neighborhood, Open set, Interior of a set, Limit point of a set,
4th week	Derived set,
5th week	Closed set, Closure of a set, Diameter of a set, Cantor's theorem, Subspaces
6th week	Continuous mappings, Sequential criterion and other characterizations of continuity,
7th week	Uniform continuity; Homeomorphism, Isometry and equivalent metrics,
8th week	Contraction mapping, Banach fixed point theorem.
9th week	Connectedness, Connected subsets of $\mathbb{R}$,
10th week.	Connectedness and continuous mappings,
11th week	Compactness and boundedness,
12th week	Characterizations of compactness,
13th week	Continuous functions on compact spaces
14th week	REVISION.
15th week	REVISION.