

SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc (Mathematics)
Semester: III
Syllabus with Effect from: June-2013

Paper Code: PS03EMTH07	Total Credit: 4
Title Of Paper: Wavelets	

Unit	Description in detail	Weighting (%)
I	Basic properties of the discrete Fourier transform - translation invariant linear transforms - the fast Fourier transform.	25%
II	Construction of wavelets on \mathbb{Z}_n (first and iteration steps) - examples and applications.	25%
III	$L^2[-\pi, \pi]$ and Fourier series - the Fourier transform and convolution on $\ell^2(\mathbb{Z})$ - first stage wavelets on \mathbb{Z} - the iteration step for wavelets on \mathbb{Z} .	25%
IV	Wavelets on \mathbb{R} - multiresolution analysis and wavelets, Construction of multiresolution analysis - wavelets with compact support and their computation.	25%

Basic Text & Reference Books:-

- M.W. Frazeier : An introduction to wavelets through linear algebra Springer, 1997.

