

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

<b>Paper Code: PS03CMTH01</b>	<b>Total Credit: 4</b>
<b>Title Of Paper: Real Analysis - II</b>	

Unit	Description in detail	Weighting (%)
I	Measure space and different examples, finite, $\sigma$ -finite, complete and saturated measures, measurable functions and Lusin's theorem and applications. Integration, general convergence theorems.	25%
II	Signed measure, Hahn decomposition, Jordan decomposition. Lebesgue decomposition theorem, Radon-Nikodym theorem, Radon-Nikodym derivatives, Lebesgue Stiltjes integral.	25%
III	Cumulative distributions and properties. $L^p$ -Spaces, Holder's inequality, Minkowski inequality, Riesz-Fischer's theorem, Riesz representation theorem, density in $L^p$ -Spaces.	25%
IV	Caratheodory's extension theorem, product measure, Fubini's Theorem, Tonelli's theorem, regularity of Baire and Borel Measures.	25%

**Basic Text & Reference Books:-**

- H.L.Royden, Real Analysis (3rd Edition) Mc. Millan, 1998.
- G. de Berra, Introduction to Measure Theory, van-Nordstrand, 1974
- P.R. Halmos, Measure Theory, van-Nordstran, 1970.

