

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

<b>Paper Code: PS03EMTH02</b>	<b>Total Credit: 4</b>
<b>Title Of Paper: Banach Algebras</b>	

Unit	Description in detail	Weighting (%)
I	Banach algebras, examples, $C(X), A(D), C^1[0,1], AC[0,1], L^1(\mathbb{R})$ . Regular and singular elements, topological divisors of zero, Gel'fand Mazur theorem.	25%
II	Spectrum of an element and spectral radius, radical and semi-simplicity. Complex homomorphisms and maximal ideals.	25%
III	The Gel'fand space, Gel'fand transform, Gel'fand representations of some concrete algebras. The Banach algebra $C(X)$ , closed ideals of $C(X)$ .	25%
IV	Banach-Stone theorem. Involutive Banach algebras, C*-algebras, Gel'fand-Naimark theorem for commutative C*-algebras.	25%

**Basic Text & Reference Books:-**

- G. F. Simmons, Introduction to Modern Analysis, McGraw-Hill Book Company, Inc. 1963.
- E. Kaniuth, A Course in Commutative Banach Algebras, Springer, New York, 2009.
- R. Larsen, Banach Algebras, Marcell-Dekker, 1973.
- H.G. Dales, Automatic Continuity, Cambridge, 2000.

