**Compact Course on Non-Commutative Spaces**

**(Supported by the DRS-SAP, Department of Mathematics, University of Delhi )**

**Speaker: Prof. K.B. Sinha**

**17th – 26th September 2015**

**Venue: Seminar Room 117, Arts Faculty Building, South Campus**

Tentative Schedule of Lectures

17, 18, 21, 22, 23, 24 September : 3.00 pm – 4.45 pm

19, 26 September : 11.00 am – 1.00 pm

Tentative List of topics

Prehistory : Algebra of functions- C\*, Banach\* algebras, G-N  and G-N-S theorems .

Analogies and  comparison of states.

(ii) Some Classical  results of Analysis in  this Non-Commutative settings , more analogies, Non-Comm topological spaces  and maps on them

(iii) on Neumann algebras and Non-Commutative measure spaces , traces and integration .

(iv) Tomita-Takesaki theory -- Connes theory of Radon-Nikodym Derivatives  of states

(v) Noncommutative Geometry of Connes - Introduction ,   Dixmier Trace , volume form,

Weyl Asymptotics - some elementary Non-Commutative manifolds and computations on them.

(vi)  Non-Commutative  Probability --Introduction , CP maps and  CP-semigroups .