Outline for the School

#	Speaker	Topic	Outline
1	Kedar Damle	Frustrated magnetism and Spin Liquids	1. Introduction to frustrated magnets 2. Classical cooperative magnets 3. Quantum spin liquids Tutorial : Materials
2	Jainendra Jain	Fractional Quantum Hall Effect	1. Experimental phenomenology: integer and fractional quantum Hall effects; Landau level physics 2. Laughlin's theory: fractional charge, fractional statistics, plasma analogy 3. Composite fermion theory: fractional sequences, Fermi sea, pairing, Chern Simons theory Tutorial : Open problems and future directions
3	H. R. Krishnamurthy And S. Bhattacharjee	Introduction to the physics of Transition Metal Oxides	1. Phenomenology of Transition metal oxides 2. Microscopic models for Transition Metal Oxides
4	Subir Sachdev	Entangled phases of quantum matter	1. Spin density wave order in metals and superconductivity 2. Fractionalization in insulators and metals 3. Non-fermi liquids: the SYK model and charged black holes.
5	Jaydeep Sau	Topology in Condensed Matter: Tying Quantum Knots	Overview of topological insulators, Majoranas, and Weyl semimetals.
6	Diptiman Sen	some aspects of non-equilibrium dynamics	1. Quenching 2. periodic dynamics (Floquet theory) 3. Application to topological systems.
7	Vijay Shenoy	"The tenfold way"	10-fold classification of Hamiltonians, Non-linear sigma models and topological terms classifying non-interacting SPTs of fermions.