

Phy604: Review of Statistical Physics:

1. Basics of ensembles, partition functions and derivation of thermodynamic quantities, **(10)**
2. Quantum statistical mechanics, density matrix, Bosons and Fermions **(10)**
3. Phase transitions, Ising model, mean field theory and critical exponents **(10)**
4. Landau theory, scaling relations and a brief idea of renormalization group **(10)**

Note: The basic concepts will be introduced followed by extensive problem solving sessions.

Books: Reif, Pathria, Huang, Chaikin and Lubensky, N. Goldenfeld.

There will be mid-semester and end-semester examinations.