## Physics 851 Fall, 2008 Prof. R. N. Mohapatra

## **Course outline:**

- (i) Path Integral formulation of Quantum Field Theory
- (ii) Renormalization of Gauge Theories
- (iii) Renormalization group and Asymptotic Freedom
- (iv) Anomalies
- (v) Supersymmetry: Superfields, Non-renormalization theorem, Supersymmetry breaking
- (vi) Supergravity:

The material will be collected from different books and original papers: some books which may be useful are:

P. Ramond, Quantum Field Theory; (Addison Wesley)

T. P. Cheng and L. F. Li, Gauge Theories....(Oxford)