SUBJECT NO-MA51002, SUBJECT NAME- Measure Theory and Integration

LTP- 3-1-0,CRD- 4

SYLLABUS :-

Prerequisite: Real Analysis

Algebra of sets, ring, sigma-ring, field and sigma field of sets, monotone class, Lebesgue measure and outer measure, measurable sets, measurable functions, Littlewoods three principles, existence of non-measurable set. Lebesgue integral of a bounded function over a set of finite measure, the integral of a non-negative function, general Lebesgue integral, convergence in measure, functions of bounded variation, absolute continuity, differentiation and integration, general measure and integration, signed measure, Hahn-Jordan decomposition, Radon-Nikodym and Lebesgue decomposition theorems, product measures and Fubinis theorem. Lp spaces, Minkowski and Holder inequalities, convergence and completeness approximation in Lp , bounded linear functionals on Lp spaces.