SUBJECT NO-CE60112, SUBJECT NAME- RISK AND RELIABILITY ANALYSIS OF CIVIL INFRASTRUCTURE SYSTEMS

LTP- 3-0-0,CRD- 3

SYLLABUS :-

Review of basics of probability and random variables; Stochastic processes, Poisson and related processes; Monte Carlo simulations; capacity vs. demand problems; component and systems reliability; redundancy; time dependent reliability, first passage, maintenance; risk-based decision making in engineering, finances and public policy implementation – definitions of risk, risk communication, consequence evaluation, cost benefit analysis, utility theory, life-cycle cost optimization; methods of setting target reliability; multiple performance levels, probability based design and code development; case studies.