SUBJECT NO-IM61007, SUBJECT NAME- STATISTICAL DECISION MODELLING

LTP- 3-0-0,CRD- 3

SYLLABUS :-

Prerequisite: IM21003 Operations research-I Introduction to Quantitative Decision Modelling, Statistical Thinking for Decision Making Ã¢ÂÂ statistical modelling for decision making under uncertainty, statistical decision making process, and common statistical terminology with applications.Necessary Conditions for Statistical Decision Modelling Ã¢ÂÂ Introduction, measure of surprise for outlier detection, homogeneous population, test for randomness, and test for normality.Discrete Probability and Decision Analysis, Decision Making with Binomial and Normal Probabilities. Decisions Based on Sample Statistics Ã¢ÂÂ Estimators and their qualities, hypothesis testing for rejecting a claim, hypothesis testing for means and proportions, tests for statistical equality for two or more populations.Decisions Based on Linear Relationships Ã¢ÂÂ Regression modelling and analysis, regression modelling selection process, covariance and correlation, comparisons of correlation coefficients, and analysis of covariance. Bayesian statistical inference Ã¢ÂÂ an introduction.Textbooks and References Ã¢ÂÂ¢Donald L. Harnett, James F. Horrell, Data, Statistics, and Decision Models, Wiley 1998.Ã¢ÂÂ¢Corfield D., and J. Williamson, Foundations of Bayesianism, Kluwer Academic Publishers, 2001. Contains Logic, Mathematics, Decision Theory, and Criticisms of Bayesianism.Ã¢ÂÂ¢Lapin L., Statistics for Modern Business Decisions, Harcourt Brace Jovanovich, 1987.Ã¢ÂÂ¢Pratt J., H. Raiffa, and R. Schlaifer, Introduction to Statistical Decision Theory, The MIT Press, 1994.Ã¢ÂÂ¢Gelman, A., Carlin, J., Stern, H. and Rubin, D., Bayesian Data Analysis (2nd edition), Chapman