SUBJECT NO-MA60056, SUBJECT NAME- REGRESSION
LTP- 48,CRD- 4.8

SYLLABUS :-

 REGRESSION AND TIME SERIES MODELS (Core) 4-0-0 (4 credits) Regression: Concept of regression, Simple linear regression, Multiple linear regression, Model adequacy checking, Transformations and weighting to correct model inadequacies, Diagnostics for leverage and influence, Polynomial regression models, Orthogonal polynomials, Indicator variables, Variable selection and model building, Model validation, Multicollinearity and autocorrelation, Introduction to ridge regression, LASSO, Nonparametric regression, Decision tree and nearest neighbour models, Illustration of concepts in business analytics problems. Time Series: Classical techniques of time series analysis, Different smoothing techniques, General linear process, Autoregressive Processes AR(P), Moving average Process Ma(q): Autocorrelation, Partial autocorrelation, Spectral analysis, Identification in time domain, Forecasting, Estimation of Parameters, Model diagnostic checks, Use of time series techniques in finance. Reference Books: 1. Montgomery, D.C., Peck, E.A. and Vining, G.G.: Introduction to Linear Regression Analysis. John Wiley and Sons, Inc. 2. Draper, N. and Smith, H.: Applied Regression Analysis. Wiley India Pvt. Ltd. 3. Brockwell, P.J. and Davis, R.A.: Introduction to Time Series and Forecasting. Springer. 4. Hamilton, J.D.: Time Series Analysis. Princeton University Press. 5. Box G. E. P., Jenkins G. M., Reinsel G. C.: Time Series Analysis: Forecasting and Control. Pearson Education (LPE), Third Edition.