ED5073 INFORMATION ANALYTICS

DETAILED SYLLABUS

OBJECTIVE

To expose the students with fundamental concepts and the tools needed to understand emerging role of information analytics in the organisation.

UNIT – I DATA ANALYTICS LIFE CYCLE

Introduction to Big data Business Analytics - State of the practice in analytics role of data scientists - Key roles for successful analytic project - Main phases of life cycle – Developing core deliverables for stakeholders.

UNIT – II STATISTICS

Sampling Techniques- Data classification, Tabulation, Frequency and Graphic representation- Measures of central value - Arithmetic mean, Geometric mean, Harmonic mean, Mode, Median, Quartiles, Deciles, Percentile - Measures of variation – Range, IQR, Quartile deviation, Mean deviation, standard deviation, coefficient variance, skewness, Moments & Kurtosis.

UNIT – III PROBABILITY AND HYPOTHESIS TESTING

Random variable, distributions, two dimensional R.V, joint probability function, marginal density function. Random vectors - Some special probability distribution - Binomial, Poison, Geometric, uniform, exponential, normal, gamma and Erlang. Multivariate normal distribution- Sampling distribution – Estimation - point, confidence - Test of significance, 1& 2 tailed test, uses of the distribution, F-distribution, χ 2 distribution.

UNIT – IV PREDICTIVE ANALYTICS

Predictive modeling and Analysis - Regression Analysis, Multicollinearity, Correlation analysis, Rank correlation coefficient, Multiple correlation, Least square, Curve fitting and good ness of fit.

UNIT – V TIME SERIES FORECASTING AND DESIGN OF EXPERIMENTS

Forecasting Models for Time series: MA, SES, TS with trend, season - Design of Experiments, one way classification, two way classification, ANOVA, Latin square, Factorial Design.

REFERENCES

1. Alberto Cordoba, “Understanding the Predictive Analytics Lifecycle”, Wiley, 2014.
2. Chris Eaton, Dirk Deroos,Tom Deutsch et al.,“Understanding Big Data”,McGrawHIll, 2012.
3. James R Evans, “Business Analytics – Methods, Models and Decisions”, Pearson 2013.
4. R. N. Prasad, Seema Acharya, “Fundamentals of Business Analytics”, Wiley, 2015.
5. S M Ross, “Introduction to Probability and Statistics for Engineers and Scientists”, Academic Foundation, 2011.