



## **Data Mining**

### **Duration- 2 Months**

**Introduction:** Data Mining Concept, Origin, Process, Applications, Techniques,

**Challenges Data Preprocessing:** Data types, Quality, Descriptive data summarization – central tendency and dispersion measure, Data cleaning, Data integration & transform, Data reduction

**Association Rule Mining:** Market-basket analysis basics, Naïve algorithm, Apriori algorithm, Direct Hashing and Pruning (DHP), Software for Association

**Rule Mining Classification and Prediction :** Decision Tree, Classification by decision tree induction, Bayesian classification, Rule-based classification, Prediction – Linear and Nonlinear Regression, Classification software.

**Cluster Analysis:** Types of data in cluster analysis, partitioning methods, Hierarchical methods, Density-based methods, Quality & Validity of clustering methods Cluster analysis software.

**Web Data Mining:** Web content mining, Web usage mining, Web structure mining, Hubs and Authorities, HITS algorithm, Web mining software.

**Text Mining, Support Vector Machine.**

**Data Mining Application & Information Privacy :** Applications and trends in data mining such as Web, finance, telecommunication, biology and medicine, science and engineering retail industry etc. Social impacts of data mining, information privacy and data security, IT Act overview.