

**SEM I**

**1. Business Intelligence & Analytics for Competitive Advantage**

- Overview of Business Intelligence Landscape
- Designing effective BI Architecture
- Understanding Enterprise Data Models
- Big Data, Datafication & its impact on Data Science
- Data Warehousing and Data Mining
- DDL and DML Discovering Knowledge with Data Mining
- Data Mining Process
- Dash boarding and Scorecards
- SQL Workshop
- Data Governance & Data Security

**2. Statistics for Business Analytics**

- Economic model and Econometric model
- Basics of Statistics
- Data Collection and Measurement
- Measures of Central Tendency (Mean, Median and Mode)
- Sampling and Estimation
- Measures of Dispersion and Correlation
- Linear Regression and Logistic Regression
- Ordinary least squares (OLS) estimation
- Statistical inferences
- Generalized least squares (GLS) estimation
- Time-series regression

**3. Data Visualization and Communication**

- Introduction to Data Visualisation
- Visualisation of Numerical Data
- Visualisation of Non-numerical Data
- Common Visualisation Idioms
- Visualisation of Spatial Data, Networks and Trees
- Data Reduction
- Data Visualisation with Industry Tools (Power BI, tableau, Alteryx etc.)

**4. Specialisation**

**HR - Introduction to Human Resource Technology and Analytics**

- What is human resource management?
- HR Technology Overview
- What is HR Analytics?
- HR Analytics popular frameworks
- Skills required for HR Analytics
- HR Automation with Analytics Tools
- Importance of data availability and governance

**Marketing - Introduction to Marketing Analytics**

- What is Marketing Management?
- Marketing Technology Overview
- What is Marketing Analytics?
- Marketing Analytics popular frameworks
- Skills required for Marketing Analytics
- Marketing Automation with Analytics Tools
- Importance of data availability and governance

**Finance - Introduction to Financial Analytics**

- What is financial management?
- Financial Technology Overview
- What is Financial Analytics?
- Financial Analytics popular frameworks
- Skills required for Financial Analytics
- Financial Automation with Analytics Tools
- Importance of data availability and governance

# Post Graduate Certificate in Business Analytics (PGCBA)

## SEM II

### 1. Business Analytics with R

- Introduction to R
- Data Types and Data Structures
- Loops and Functions in R
- Mathematics in R
- Visualization using R
- Missing Value Treatment
- Exploratory Data Analysis using R

### 2. Analytics with Tableau

- Introduction to Tableau architecture
- Connections for organizing data
- Tableau graphs, reports, and calculations
- Working with groups and set
- Working with dashboard
- Data blending and aggregation
- Data visualization
- Generated fields and special fields
- Case Study: Hands on using Tableau

### 3. Specialization

#### HR - Advanced HR Analytics

- Primary Sources of Employee Data
- Secondary sources of Employee data
- Efficiency & Effectiveness metrics
- General employee data fields
- Key metrics for each vertical of HR
- HR Scorecards and HR Scorecard Practice Case Study
- HR Case study of correlation
- HR Case study of Linear regression
- HR Case study of Logistic regression

#### 4. Capstone Projects

Retail: Market basket analysis for consumer durables (used by retail stores to predict and increase impulse purchases based on groups of items a customer buys)

Banking: Developing best prediction model of credit default (used by retail banks to analyse data on credit defaults using logistic regression)

HR: Developing best prediction model the probability of attrition using a logistic regression (used by organization for manpower requirement planning)

#### Marketing - Retail Analytics

- Retail Analytics
- Terminologies: Review
- Customer Analytics
- KNIME
- Retail Dashboards
- Customer Churn
- Association Rules Mining

#### Finance - Finance & Risk Analytics

- What is Risk, Risk Management –overview and Concepts
- Why Credit Risk-Using a market case study
- Risk Management using Derivatives strategies
- Comparison of Credit Risk Models
- Overview of Probability of Default (PD) Modelling
- PD Models, types of models, steps to make a good model
- Market Risk
- Value at Risk- using stock case study
- Fraud Detection