

# HR Analytics Training - 8 Hours Syllabus

Training Objective:

To equip HR professionals and data enthusiasts with a solid foundation in HR Analytics, covering data-driven HR decision-making, basic statistics, visualization, predictive modeling, and real-world use cases using Excel and Python.

**Total Duration: 8 Hours**

## **Session 1: Introduction to HR Analytics (Duration: 1 Hour)**

- What is HR Analytics? Difference between HR metrics, analytics, and strategic HRM
- Importance and impact of data-driven HR decisions
- Evolution of HR from intuition-based to evidence-based
- Real-world use cases:
  - Recruitment analytics
  - Attrition and retention analytics
  - Performance management analytics
  - Training effectiveness
  - Workforce planning
- Common challenges in HR analytics adoption

## **Session 2: Understanding HR Data and KPIs (Duration: 1 Hour)**

- Types of HR data: structured vs. unstructured
- Data sources in HR: HRIS, ATS, surveys, performance management systems
- Key HR metrics and KPIs:
  - Time to hire, cost per hire, offer acceptance rate
  - Attrition rate, absenteeism rate, headcount, tenure
  - Training ROI, performance scores, engagement scores
- Understanding and defining business-relevant metrics
- Hands-on: Exploring a raw HR dataset in Excel, Mapping metrics to business questions

## **Session 3: Descriptive Analytics and Visualization (Duration: 1.5 Hours)**

- Descriptive statistics: mean, median, mode, standard deviation

- Frequency distributions and cross-tabulations
- Visualization techniques:
  - Bar charts, line charts, histograms, pie charts
  - Trend analysis, distribution plots, box plots
- Creating HR dashboards in Excel using pivot tables, charts, and conditional formatting

#### **Session 4: Data Cleaning and Preparation using Python (Duration: 1 Hour)**

- Introduction to Jupyter Notebook and Python basics
- Loading and exploring HR datasets using Pandas
- Data cleaning steps:
  - Handling missing values
  - Removing duplicates
  - Formatting dates, standardizing text data
- Feature engineering basics: creating new columns from existing data
- Hands-on: Clean and preprocess a sample HR dataset using Python

#### **Session 5: Exploratory Data Analysis (EDA) and Insights (Duration: 1 Hour)**

- Analyzing distributions, correlations, and outliers
- Identifying patterns in attrition, performance, or tenure
- Using visualizations to detect trends
- Hands-on: Generate correlation matrix, heatmaps, and bar plots using Python (Matplotlib/Seaborn)

#### **Session 6: Predictive Modeling in HR (Duration: 1.5 Hours)**

- Introduction to predictive analytics in HR
- Use cases: Attrition prediction, high-potential employee identification
- Basics of classification algorithms: Logistic Regression, Decision Trees
- Model evaluation techniques: accuracy, confusion matrix, precision, recall
- Hands-on: Building and evaluating a logistic regression model for predicting attrition

#### **Session 7: Ethics, Tools, and Capstone Project (Duration: 1 Hour)**

- Ethical considerations in HR data analysis: privacy, bias, fairness
- Overview of analytics tools used in HR:
  - Excel, Power BI, Tableau
  - Python, R

- SQL for HR data extraction
- Capstone Project:
  - Problem: 'Analyze and predict employee attrition'
  - Deliverables: Dashboard, Report, Predictive Model
  - Group/Individual work with instructor guidance

### **Post-Training Resources**

- Sample datasets (CSV and Excel formats)
- Jupyter notebooks with code templates
- Excel dashboard template
- Capstone project guide
- List of further reading and learning paths