Predictive Attrition Modelling Training Course

Professional Development Training Course Outline

Category	Human Resource Management	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Employee attrition is one of the most critical challenges organizations face today. High turnover can lead to increased operational costs, reduced productivity, and loss of institutional knowledge. Predictive Attrition Modelling empowers HR professionals and data analysts to proactively identify at-risk employees using advanced machine learning algorithms, data analytics, and predictive insights. By leveraging historical employee data, organizations can design targeted retention strategies, improve workforce planning, and enhance overall employee engagement.

Predictive Attrition Modelling Training Course is designed to equip participants with hands-on expertise in attrition prediction, data preprocessing, feature engineering, and model deployment. Participants will learn to harness Python, R, AI-driven analytics, and dashboard visualization tools to transform raw HR data into actionable insights. Through case studies, real-world datasets, and interactive learning, attendees will gain the skills necessary to reduce turnover, optimize human capital, and contribute strategically to business success.

Programme Curriculum

Predictive Attrition Modelling Training Course

Introduction

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5 days

Course Objectives

1. Understand the fundamentals of employee attrition and its business impact.
2. Learn data collection techniques for HR analytics.
3. Apply data preprocessing and feature engineering for attrition datasets.
4. Build predictive models using machine learning algorithms like Logistic Regression, Random Forest, and XGBoost.
5. Utilize Python and R for predictive analytics.
6. Analyze key attrition drivers using exploratory data analysis (EDA).
7. Implement model evaluation metrics: accuracy, precision, recall, F1-score, ROC-AUC.
8. Deploy real-time dashboards for monitoring attrition trends.
9. Use employee segmentation to identify retention strategies.
10. Understand HR analytics frameworks and best practices.
11. Develop data-driven retention strategies to reduce turnover.
12. Incorporate predictive insights into workforce planning and talent management.
13. Learn through case studies of high-turnover organizations for actionable insights.

Target Audience

1. HR professionals
2. Data analysts and data scientists
3. Workforce planners
4. Talent management specialists
5. Business analysts
6. HR consultants
7. Organizational development managers
8. Managers responsible for employee engagement and retention

Course Modules

Module 1: Introduction to Employee Attrition

- Definition and types of attrition
- Business impact of turnover
- Key attrition metrics
- Understanding retention vs. attrition
- Case Study: Attrition trends in a global IT company

Module 2: HR Data Collection & Preprocessing

- Sources of HR data
- Handling missing values and outliers

- Data normalization and transformation
- Feature selection and extraction
- Case Study: Cleaning attrition dataset for predictive modeling

Module 3: Exploratory Data Analysis (EDA) for Attrition

- Descriptive statistics and visualization
- Correlation analysis of features
- Identifying attrition patterns
- Using Python & R for EDA
- Case Study: EDA of employee survey data

Module 4: Predictive Modeling Techniques

- Logistic Regression for attrition prediction
- Decision Trees and Random Forest
- Gradient Boosting & XGBoost
- Model tuning and hyperparameter optimization
- Case Study: Predicting attrition in a telecom company

Module 5: Model Evaluation & Validation

- Confusion matrix, accuracy, precision, recall
- ROC-AUC and F1-score
- Cross-validation techniques
- Handling imbalanced datasets
- Case Study: Evaluating attrition model performance

Module 6: Employee Segmentation & Risk Scoring

- Segmentation using clustering
- Risk scoring for potential leavers
- Visualization of high-risk groups
- Prioritizing retention interventions
- Case Study: Employee segmentation in a manufacturing firm

Module 7: Retention Strategy & Actionable Insights

- Designing targeted retention programs
- Linking attrition drivers to HR policies
- Forecasting impact of retention interventions
- Monitoring attrition KPIs
- Case Study: Reducing attrition in a retail chain

Module 8: Deployment & Dashboard Visualization

- Deploying predictive models in HR systems
- Building interactive dashboards in Power BI/Tableau
- Real-time attrition monitoring
- Reporting and stakeholder communication
- Case Study: Dashboard implementation for a multinational firm

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

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