Predictive Analytics for Workforce Planning Training Course

Professional Development Training Course Outline

Category	Trade Unions	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today’s rapidly evolving data-driven HR ecosystem, organizations are shifting from traditional workforce management to Predictive Analytics for Workforce Planning, powered by Artificial Intelligence (AI), Machine Learning (ML), and Big Data Analytics. Predictive Analytics for Workforce Planning Training Course is designed to equip HR professionals, with the capability to forecast workforce demand, reduce attrition, optimize talent pipelines, and improve strategic decision-making using advanced predictive models.

As industries face increasing disruption from digital transformation, automation, hybrid work models, and talent shortages, predictive workforce analytics has become a critical capability for organizational resilience. By leveraging statistical forecasting, predictive modeling, workforce segmentation, and real-time HR dashboards, participants will learn how to transform raw HR data into actionable insights. The course integrates real-world case studies, hands-on simulations, and industry best practices to enable organizations to achieve workforce agility, talent optimization, and data-driven HR strategy execution.

Programme Curriculum

Predictive Analytics for Workforce Planning Training Course

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Course Duration

10 Days

Course Objectives

1. Understand Predictive Workforce Analytics frameworks and HR data ecosystems
2. Apply Machine Learning models for employee attrition prediction
3. Develop workforce demand forecasting models using time-series analysis
4. Implement AI-driven talent acquisition optimization strategies
5. Use HR dashboards and KPI visualization tools (Power BI, Tableau)
6. Enhance employee retention strategies using predictive insights
7. Analyze workforce productivity using advanced analytics metrics
8. Build data-driven succession planning models
9. Optimize skills gap analysis using predictive modeling techniques
10. Improve strategic workforce planning with scenario modeling
11. Integrate HR analytics with business intelligence systems
12. Enable real-time workforce decision-making using predictive dashboards
13. Apply ethical AI and responsible analytics in HR decision systems

Target Audience

1. HR Managers and HR Business Partners
2. Workforce Planning Analysts
3. Data Analysts and Data Scientists in HR
4. Talent Acquisition Specialists
5. Organizational Development Professionals
6. Business Intelligence Analysts
7. Operations and Resource Planning Managers
8. C-Level Executives (CHROs, CEOs, COOs)

Course Modules

Module 1: Introduction to Workforce Analytics

- Evolution of HR analytics
- Workforce planning fundamentals
- **Case Study:** Google’s data-driven HR transformation
- HR metrics vs analytics distinction
- Role of predictive intelligence in HR

Module 2: Data Foundations for HR Analytics

- HR data structures and sources
- Data cleaning and preprocessing

- **Case Study:** IBM workforce dataset analysis
- Handling missing HR data
- Data governance in HR systems

Module 3: Predictive Analytics Fundamentals

- Regression and classification models
- Predictive vs descriptive analytics
- **Case Study:** Employee turnover prediction model
- Model accuracy evaluation
- Feature selection techniques

Module 4: Workforce Demand Forecasting

- Time-series forecasting methods
- Seasonal workforce trends
- **Case Study**: Retail seasonal staffing prediction
- Demand-supply modeling
- Forecast accuracy optimization

Module 5: Employee Attrition Prediction

- Attrition indicators and signals
- Logistic regression models
- **Case Study:** Telecom churn analysis
- Survival analysis techniques
- Retention risk scoring

Module 6: Talent Acquisition Analytics

- Candidate scoring models
- Resume analytics and AI screening
- **Case Study:** Amazon hiring optimization
- Recruitment funnel analytics
- Bias reduction techniques

Module 7: Skills Gap Analysis

- Workforce capability mapping
- Predictive skill demand modeling
- **Case Study:** IT sector upskilling strategy
- Competency frameworks
- Learning pathway analytics

Module 8: Workforce Segmentation

- Employee clustering techniques
- Behavioral segmentation models
- **Case Study:** Banking workforce segmentation
- Persona-based workforce design
- Engagement analytics

Module 9: Performance Prediction Models

- KPI-based performance forecasting
- Regression-based performance modeling
- **Case Study**: Sales team performance prediction
- Productivity drivers analysis
- High performer identification

Module 10: Succession Planning Analytics

- Leadership pipeline modeling
- Readiness scoring systems
- **Case Study:** Fortune 500 succession planning
- Risk analysis for leadership gaps
- Talent mobility mapping

Module 11: HR Dashboards & Visualization

- Power BI/Tableau dashboards
- Real-time workforce monitoring
- **Case Study:** Healthcare staffing dashboard
- KPI design principles
- Data storytelling in HR

Module 12: Scenario Planning & Simulation

- Workforce simulation models
- What-if analysis techniques
- **Case Study:** Manufacturing workforce restructuring
- Risk-impact modeling
- Strategic scenario forecasting

Module 13: AI in Workforce Planning

- AI-driven decision systems
- Machine learning pipelines
- **Case Study:** AI-driven HR assistant systems
- NLP in HR analytics
- Automation in workforce planning

Module 14: Ethical & Responsible AI in HR

- Bias detection in algorithms
- Data privacy compliance
- **Case Study**: Ethical hiring systems audit
- Fairness in predictive models
- Responsible AI frameworks

Module 15: Capstone Project - Predictive Workforce Strategy

- End-to-end analytics project
- Dataset selection and modeling

- Case Study: Enterprise workforce optimization model
- Presentation of insights
- Business impact evaluation

Training Methodology

- 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	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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