

Course No. 1911

Predictive Analytics for Insurance Training Course

INSURANCE DATA & ANALYTICS
INSURANCE & RISK MANAGEMENT

DURATION

5 Days

DELIVERY

Classroom



Course Overview

This advanced training course provides a practical framework for applying predictive analytics to insurance decision-making, risk assessment, forecasting, pricing, claims management, fraud detection, customer management, and portfolio performance. It enables insurance professionals to move beyond historical reporting and use data-driven models to anticipate future outcomes, identify emerging risks, and improve business decisions.

The course explores the principles and applications of predictive analytics across the insurance value chain, including data preparation, feature identification, predictive modeling, probability assessment, forecasting, model validation, and performance monitoring. Participants will learn how historical insurance data can be transformed into predictive insights that support underwriting decisions, claims forecasting, customer retention, pricing, and risk management.

Particular emphasis is placed on practical insurance applications such as predicting claims frequency and severity, identifying high-risk policies, forecasting customer lapses, detecting unusual behavior, assessing fraud risk, and supporting portfolio profitability. The course also addresses how predictive analytics can complement actuarial expertise, underwriting judgment, and management decision-making.

The program further covers data quality, model selection, validation, interpretability, bias, model risk, governance, and responsible use of predictive models. Through case studies and practical workshops, participants will develop the ability to evaluate predictive analytics opportunities, interpret model outputs, establish performance indicators, and build a structured implementation roadmap for predictive analytics within insurance organizations.

Objectives

- By the end of this course, participants will be able to:
- Understand the principles and business value of predictive analytics in insurance.
- Analyze the insurance data requirements for predictive modeling.
- Prepare and assess historical insurance data for predictive analysis.
- Identify variables and patterns that influence insurance outcomes.
- Evaluate predictive modeling techniques suitable for insurance applications.

- Apply predictive analytics to underwriting and risk classification.
- Develop approaches for forecasting claims frequency and severity.
- Use predictive analytics to support insurance pricing and customer segmentation.
- Apply predictive techniques to identify potential fraud and unusual behavior.
- Analyze customer data to predict retention, lapse, and future behavior.
- Evaluate predictive model performance, accuracy, stability, and limitations.
- Identify model risk, bias, data quality, privacy, and governance issues.
- Translate predictive model outputs into actionable insurance decisions.
- Develop performance indicators for monitoring predictive models.
- Build a practical roadmap for implementing predictive analytics across insurance functions.

Who Should Attend

This course is designed for insurance professionals working in underwriting, actuarial functions, pricing, claims management, risk management, fraud management, portfolio management, customer analytics, product development, and strategic planning.

It is particularly suitable for executives, managers, team leaders, analysts, specialists, and decision makers who use insurance data to support forecasting, risk assessment, profitability analysis, customer management, and operational improvement.

The course is also relevant to data analytics, business intelligence, technology, digital transformation, governance, compliance, and internal audit professionals who need to understand predictive modeling, its insurance applications, and the governance requirements associated with data-driven decision-making.

Learning Outcomes

- Upon completion of the course, participants will be able to:
- Explain the role of predictive analytics across the insurance value chain.
- Identify appropriate insurance data sources for predictive analysis.
- Assess data quality and determine its suitability for predictive modeling.

- Define insurance business problems that can be addressed through predictive analytics.
- Identify key variables and risk indicators within insurance datasets.
- Evaluate predictive modeling approaches for different insurance use cases.
- Develop predictive approaches for claims frequency and severity.
- Apply predictive analytics to underwriting and risk classification.
- Use predictive insights to support pricing and portfolio decisions.
- Identify potential fraud and unusual behavior through predictive techniques.
- Predict customer retention, lapse, and behavioral trends.
- Interpret predictive model outputs and communicate insights to management.
- Evaluate model performance and identify potential weaknesses.
- Establish controls for model risk, bias, privacy, and data governance.
- Develop a predictive analytics implementation roadmap for an insurance organization.

Course Outline

DAY 01

Foundations of Predictive Analytics in Insurance

- Understanding predictive analytics and its role in modern insurance.
- Descriptive, diagnostic, predictive, and prescriptive analytics.
- The predictive analytics lifecycle.
- Insurance data sources and historical datasets.
- Data quality, completeness, consistency, and reliability.
- Identifying variables and drivers of insurance outcomes.
- Defining business problems for predictive analysis.
- Translating insurance challenges into analytical questions.
- Building a data-driven decision-making framework.

PRACTICAL APPLICATION

Identify predictive analytics opportunities across underwriting, claims, pricing, and customer management.

DAY 02

Predictive Modeling for Underwriting and Risk Assessment

- Fundamentals of predictive modeling in insurance.
- Risk classification and predictive underwriting.
- Identifying high-risk policies and customer profiles.
- Predicting insurance loss and risk exposure.
- Selecting relevant variables and risk indicators.
- Using historical underwriting data for future risk assessment.
- Predictive analytics for portfolio segmentation.
- Supporting underwriting decisions with predictive insights.
- Balancing predictive recommendations with professional judgment.

PRACTICAL APPLICATION

Develop a predictive risk assessment framework for insurance underwriting.

DAY 03

Predictive Analytics for Claims, Pricing and Fraud

- Predicting claims frequency and severity.
- Claims cost forecasting and loss prediction.
- Identifying complex and high-risk claims.
- Predictive analytics for claims prioritization.
- Supporting insurance pricing and rating decisions.
- Predicting customer and policy profitability.
- Fraud risk prediction and anomaly identification.
- Identifying suspicious claims and behavioral patterns.
- Developing early warning indicators.

PRACTICAL APPLICATION

Design a predictive framework for claims forecasting and fraud risk identification.

DAY 04

Customer Analytics, Portfolio Performance and Advanced Applications

- Predicting customer retention and policy lapse.
- Customer segmentation using predictive insights.
- Predicting customer behavior and future value.
- Portfolio performance forecasting.
- Predictive analytics for product and channel performance.
- Loss ratio and profitability forecasting.
- Risk concentration and portfolio monitoring.
- Integrating predictive analytics with Artificial Intelligence and machine learning.
- Using predictive insights for strategic decision-making.

PRACTICAL APPLICATION

Build a predictive customer or portfolio analytics framework and translate results into management recommendations.

DAY 05

Model Validation, Governance and Implementation

- Predictive model validation and performance assessment.
- Accuracy, stability, sensitivity, and predictive power.
- Model monitoring and performance deterioration.
- Model interpretability and explainability.
- Managing bias and data quality risks.
- Privacy, security, and responsible use of insurance data.
- Predictive model governance and accountability.
- Establishing performance indicators and monitoring frameworks.
- Building business cases for predictive analytics investments.
- Developing organizational predictive analytics capabilities.

DAY 05 — CONTINUED

- Final Practical Workshop: Develop an integrated Predictive Analytics Roadmap for an insurance organization, including priority use cases, data requirements, modeling approach, governance controls, performance indicators, implementation phases, and value realization.

Register or Request More Information

Course page: <https://quest-training.com/courses/predictive-analytics-for-insurance-training-course>

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