

Course No. 1832

Insurance Forecasting & Predictive Analytics Training Course

ACTUARIAL SCIENCE & INSURANCE ANALYTICS
INSURANCE & RISK MANAGEMENT

DURATION

5 Days

DELIVERY

Classroom



Course Overview

The Insurance Forecasting & Predictive Analytics Training Course provides a practical and advanced framework for using forecasting techniques, predictive analytics, and insurance data to improve decision-making across the insurance value chain. The course focuses on transforming historical and current insurance data into forward-looking insights that support underwriting, pricing, claims management, reserving, risk management, profitability, and strategic planning.

Participants will explore the foundations of insurance forecasting, including data preparation, trend analysis, time-series concepts, statistical forecasting, claims development, and predictive modelling. The program emphasizes the interpretation and business application of analytical outputs, enabling insurance professionals to understand how historical patterns and emerging trends can be used to anticipate future claims, customer behavior, revenues, risks, and portfolio performance.

The course examines practical applications of predictive analytics across underwriting and claims, including risk segmentation, claims frequency and severity prediction, fraud indicators, customer retention, loss forecasting, pricing support, and portfolio deterioration. Participants will also learn how to evaluate model assumptions, accuracy, uncertainty, data quality, and potential sources of bias.

Through practical exercises, case studies, forecasting scenarios, and analytical workshops, participants will develop the ability to evaluate forecasts, interpret predictive model outputs, and convert analytical insights into actionable insurance decisions. The course supports organizations in strengthening data-driven decision-making, improving forecasting accuracy, managing emerging risks, and enhancing overall insurance performance.

Objectives

- By the end of the course, participants will be able to:
- Explain the principles and applications of forecasting and predictive analytics in insurance.
- Analyze insurance data to identify trends, patterns, relationships, and emerging risks.
- Prepare and assess insurance datasets for forecasting and predictive modelling.
- Apply appropriate forecasting approaches to claims, premiums, revenues, and portfolio performance.

- Analyze claims frequency, severity, development patterns, and future loss expectations.
- Apply predictive analytics to underwriting, risk segmentation, claims, and customer management.
- Evaluate predictive model assumptions, accuracy, uncertainty, and limitations.
- Apply scenario analysis and sensitivity analysis to insurance forecasts.
- Identify potential data quality issues, bias, outliers, and model risk.
- Interpret predictive analytics outputs and translate them into practical business recommendations.
- Develop monitoring approaches for forecasting and predictive model performance.
- Strengthen data-driven decision-making across insurance functions.

Who Should Attend

This course is designed for insurance analysts, actuaries, actuarial analysts, underwriting professionals, claims professionals, pricing specialists, risk managers, finance professionals, portfolio managers, data analysts, and insurance operations specialists who work with insurance data and forward-looking analysis.

It is also suitable for insurance executives, senior managers, product managers, business planning teams, internal auditors, risk and capital professionals, and decision makers seeking to understand how forecasting and predictive analytics can support insurance performance and strategic decision-making.

The program is particularly valuable for professionals who need to interpret analytical models and forecasts, collaborate with actuarial and data teams, or strengthen the use of data-driven insights in underwriting, pricing, claims, risk management, and portfolio strategy.

Learning Outcomes

- Upon successful completion of the course, participants will be able to:
- Explain the role of forecasting and predictive analytics across the insurance value chain.
- Prepare and evaluate insurance datasets for forward-looking analysis.
- Identify trends, seasonality, patterns, relationships, and changes in insurance data.
- Develop and interpret forecasts for claims, premiums, revenues, losses, and portfolio

performance.

- Analyze claim frequency, severity, development, and future loss patterns.
- Apply predictive analytics to underwriting and insurance risk segmentation.
- Use predictive insights to support claims management and early risk identification.
- Evaluate model accuracy, uncertainty, assumptions, and limitations.
- Conduct scenario, sensitivity, and stress analysis on insurance forecasts.
- Identify data quality problems, bias, outliers, and sources of model risk.
- Communicate predictive analytics findings clearly to technical and executive stakeholders.
- Establish monitoring approaches for forecasting and predictive model performance.
- Translate analytical results into practical recommendations for insurance management.
- Apply forecasting and predictive analytics to real-world insurance case studies.

Course Outline

DAY 01

Foundations of Insurance Forecasting & Predictive Analytics

- The role of forecasting and predictive analytics in modern insurance
- Insurance data sources, data structures, quality, and preparation
- Trend analysis, patterns, seasonality, relationships, and historical experience
- Forecasting principles, assumptions, uncertainty, and business interpretation

PRACTICAL APPLICATION

Analyze an insurance dataset and identify key forecasting variables and trends

DAY 02

Insurance Forecasting & Claims Analytics

- Forecasting claims frequency, severity, and aggregate losses
- Claims development patterns and future loss expectations
- Forecasting premiums, revenues, expenses, and portfolio performance
- Evaluating forecast accuracy and selecting appropriate forecasting approaches

DAY 02 — CONTINUED

PRACTICAL APPLICATION

Develop and interpret a simplified claims and loss forecast

DAY 03**Predictive Analytics for Underwriting, Pricing & Risk**

- Predictive analytics for underwriting and risk assessment
- Risk segmentation and identification of high-risk exposures
- Using predictive insights to support insurance pricing decisions
- Identifying portfolio deterioration and emerging risk patterns

PRACTICAL APPLICATION

Build a predictive risk segmentation framework for an insurance portfolio

DAY 04**Predictive Claims, Fraud & Customer Analytics**

- Predictive approaches to claims management and early risk identification
- Identifying unusual claims patterns and potential fraud indicators
- Customer behavior, retention, lapse, and service analytics
- Scenario analysis, sensitivity analysis, and stress testing

PRACTICAL APPLICATION

Analyze claims and customer data to identify predictive indicators and management actions

DAY 05**Model Evaluation, Governance & Strategic Application**

- Evaluating predictive model performance, accuracy, and reliability
- Data bias, model limitations, uncertainty, and model risk
- Forecast and model monitoring, validation, documentation, and governance

DAY 05 — CONTINUED

- Communicating predictive insights and integrating analytics into management decisions

FINAL WORKSHOP

Develop an integrated insurance forecasting and predictive analytics framework covering data, forecasting, claims, underwriting, risk, model evaluation, governance, and strategic recommendations

Register or Request More Information

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

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