Insurance Underwriting and Claims Analytics Training Course: Models, Fraud Signals and Governance

7 – 11 December 2026
Cape town

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Programme Summary

Insurance underwriting and claims analytics is the subject of this one-week training course for heads of underwriting, claims, actuarial, distribution and data, ending in an analytics and governance plan for one insurance line. Insurers are offered models for risk selection, pricing, claims routing and fraud detection, yet executives often judge them by vendor claims rather than evidence. The programme builds a method for choosing use cases, checking data foundations, testing models and controlling their use, applied to a line the participant selects. Mars Training Centre UK delivers this programme on insurance underwriting and claims analytics to mixed-organisation cohorts.

The Business Case

Insurance results depend on selecting risks, pricing them and settling claims fairly and quickly. AI and data tools can support each step, but weak data, unexplained models and unchecked automation can raise losses and damage customer trust. Executives who can question evidence, set limits and track results across the policy lifecycle make better investment choices and give boards a clear account of what each model does.

- Loss Ratio: Improves as underwriting and pricing models are tested against the drivers of loss.
- Claims Handling Time: Falls as routine claims are routed by agreed triage rules.
- Model Risk: Falls as every model is registered, monitored and owned.

Principles and Evidence Base

- IAIS Application Paper on the supervision of artificial intelligence: This guidance from the International Association of Insurance Supervisors frames the governance and risk topics in Session 4.
- Risk segmentation: Session 2 applies this actuarial principle to test whether groups of policyholders are separated by real differences in risk.
- Decision threshold analysis: Session 3 uses the trade-off between missed cases and false alerts to set fraud and triage thresholds.

Intended Participants

- Underwriting leaders who set risk selection rules and referral limits.
- Claims leaders who own triage, settlement and investigation processes.
- Actuarial and pricing leads who build and review pricing models.
- Distribution and customer service leaders who deploy digital assistants and tools.
- Data and risk leaders who register and monitor models.

Typical settings include life and general insurers, reinsurers, brokers and insurance data providers.

Learning Outcomes

1. Participants will be able to prioritise insurance analytics use cases by value, data readiness and risk.
2. Participants will be able to evaluate an underwriting or pricing model against risk segmentation and loss drivers.
3. Participants will be able to design claims triage rules with clear routes and human review points.
4. Participants will be able to diagnose weaknesses in fraud signals, including false alerts.
5. Participants will be able to assess fairness and customer impact of automated decisions.
6. Participants will be able to justify a model governance approach and monitoring plan to a board.

Programme Structure

Day 1: Insurance Underwriting and Claims Analytics Foundations

Where do data and AI add value across the policy lifecycle?

- Policy Lifecycle Value Map
- Insurance Data Source Inventory
- Use Case Prioritisation Grid
- Data Foundation Checklist
- Decision Rights Sheet

Day 2: Underwriting and Pricing Analytics

How do models support risk selection and price, and how is their output tested?

- Risk Segmentation Review
- Pricing Model Comparison
- Underwriting Referral Rules
- Loss Ratio Driver Analysis
- Customer Fairness Check

Day 3: Claims Triage and Fraud Signals

How are claims routed and suspicious patterns flagged without unfair outcomes?

- Claims Triage Flow
- Fraud Indicator Library
- Alert Threshold Sheet
- Investigator Referral Protocol
- False Alert Review

Day 4: Service, Distribution and Model Governance

How are AI tools in service and sales kept under control?

- Service Automation Map
- Generative Assistant Use Rules
- Model Inventory Register
- IAIS Application Paper Review
- Model Performance Monitoring Pack

Day 5: Applying the Tools to One Insurance Line

Do the use case, model, claims and governance tools form one plan?

- Applying the Session 1 Use Case Prioritisation Grid
- Using the Session 2 Risk Segmentation Review
- Checking the Session 3 Alert Threshold Sheet
- Running the Session 4 Model Inventory Register
- Completing the Analytics and Governance Plan

Methodology

The programme uses case analysis supported by structured exercises. Participants work in mixed underwriting, claims and data teams on anonymised portfolio summaries, model performance tables, claim files and alert logs. Teams question the evidence for each model, challenge each other's thresholds and receive written facilitator feedback on every exercise set.

- Suggested activity: Reading a pricing model summary to find a policyholder group it treats unfairly.
- Suggested activity: Setting an alert threshold for a fraud model and defending the trade-off.
- Suggested activity: Writing monitoring rules for a claims triage model that drifts.

Capstone Output

Each participant completes an analytics and governance plan for one insurance line. It holds a ranked use case list, a data readiness note, a model evaluation summary, claims triage and alert rules, a fairness check and a monitoring plan. The plan is used at work to brief the executive committee, question suppliers and set the first delivery phase.

Frequently Asked Questions

Is insurance underwriting and claims analytics suitable for executives who do not code?

Yes. Insurance underwriting and claims analytics is taught at executive level through case material, tables and checklists, so programming is not required, though familiarity with insurance operations is assumed.

Which guidance does insurance underwriting and claims analytics rest on?

Insurance underwriting and claims analytics rests on the IAIS Application Paper on the supervision of artificial intelligence, risk segmentation and decision threshold analysis, each applied in named sessions.

How is the plan from insurance underwriting and claims analytics used at work?

You use the analytics and governance plan to brief your executive committee, question suppliers about evidence, set alert and triage rules and plan the first delivery phase.

How does insurance underwriting and claims analytics differ from a general data science programme?

Insurance underwriting and claims analytics concerns risk selection, pricing, claims and fraud decisions with model controls, while a general data science programme teaches techniques for any sector.