CONCEPT

AI for Internal Audit: Audit Analytics, Continuous Auditing and Predictive Risk



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Technical depth: Practitioner · **Practical mode:** Lab

Introduction

Internal audit functions still test small samples, plan from last year's risk assessment and find problems months after they occur, while the business they audit now runs on data, automation and AI. Audit committees ask why assurance covers so little of the population and why emerging risks surface late. This Core Concept course equips auditors to apply analytics, machine learning and generative AI across the audit lifecycle, from full-population testing to predictive risk scoring. Participants work hands on with real datasets and leave with an AI-Enabled Audit Analytics Playbook for their own function.

Course Objectives

- Identify where machine learning, generative AI and automation add value across the audit lifecycle and within the Global Internal Audit Standards
- Apply the IIA AI Auditing Framework, NIST AI RMF and CRISP-DM to scope and govern audit analytics work
- Prepare audit data and run full-population tests, anomaly detection and process mining on transaction data
- Build predictive risk scores that prioritise the audit universe and inform the risk-based audit plan
- Validate analytics results and document AI-assisted work so that it meets evidence and reproducibility requirements
- Produce an AI-Enabled Audit Analytics Playbook ready for approval by the head of internal audit

Target Audience

- Internal auditors and senior auditors performing financial, operational and compliance engagements
- Audit data analytics specialists building tests and continuous auditing routines
- IT and information systems auditors reviewing automated and AI-enabled controls
- Risk and compliance analysts monitoring transaction data for control breaches
- Internal audit managers and quality review leads who plan analytics-led audit coverage and evaluate audit evidence

Course Outline

Day 1: AI in the Assurance Landscape

- Machine Learning, Generative AI and Robotic Process Automation Use Cases Across the Audit Lifecycle
- Global Internal Audit Standards 2024: Standard 10.3 Technological Resources
- Audit Data Landscape: ERP Tables, Event Logs and Unstructured Evidence
- Audit Analytics Maturity Model and Capability Baseline
- AI Acceptable Use Policy for the Audit Function: Approved Tools and Data Handling

Day 2: Frameworks and Technical Architecture

- IIA Artificial Intelligence Auditing Framework 2024 Update
- NIST AI RMF 1.0 Functions: Govern, Map, Measure and Manage
- ISO/IEC 42001:2023 AI Management System Controls Relevant to Assurance
- CRISP-DM Cycle for Audit Analytics Projects
- Supervised, Unsupervised and Generative Model Types for Audit Tests

Day 3: Analytics and AI Techniques in Audit Work

- Data Extraction, Cleansing and Profiling in Python pandas
- Full-Population Testing: Duplicate Payments, Split Purchases and Benford's Law
- Journal Entry Anomaly Detection with Isolation Forest
- Process Mining of Purchase-to-Pay Event Logs
- Generative AI Prompt Patterns for Risk Assessment Drafting and Workpaper Summaries

Day 4: Predictive Risk, Continuous Auditing and Model Reliability

- Predictive Risk Scoring Models for Audit Universe Prioritisation
- Continuous Auditing and Continuous Monitoring Rule Design
- Model Performance Checks: False Positives, Precision and Recall
- Auditing AI-Enabled Controls: Bias, Explainability and Drift Tests
- Evidence Sufficiency, Reproducibility and Audit Trail for AI-Assisted Work

Day 5: Lab Practice and the Analytics Playbook

- Procure-to-Pay Lab: End-to-End Anomaly Detection Exercise
- Payroll Lab: Ghost Employee and Outlier Detection Exercise
- Risk-Based Audit Plan Heat Map Built from Predictive Scores
- AI-Enabled Audit Analytics Playbook Drafting
- Peer Demonstration and Playbook Defence

Skills You Will Gain

- Audit Data Preparation
- Full-Population Testing
- Anomaly Detection
- Process Mining
- Predictive Risk Scoring
- Continuous Auditing Design
- Generative AI Prompting
- AI Model Assurance

Why Attend This Course

- Return to work with an AI-Enabled Audit Analytics Playbook and tested routines that your team can run on the next engagement
- Replace sample-based testing with full-population tests that audit committees can rely on
- Explain to audit leadership how predictive scores were built and where their limits lie
- Compare approaches with auditors from other sectors and countries who are adopting the same technologies

Conclusion

Assurance keeps pace with the business only when auditors can use the same data and technology that now run it. This course moves from the audit data landscape and the governing standards, through the IIA AI Auditing Framework and CRISP-DM, to anomaly detection, process mining, predictive risk scoring and the evidence controls that keep AI-assisted work defensible. The final day turns that practice into an AI-Enabled Audit Analytics Playbook that participants take back to their audit function, giving them a tested starting point for the next audit plan.