COURSE OVERVIEW TM1147
Data Analytics in Internal Audit

Course Title
Data Analytics in Internal Audit

Course Date/Venue
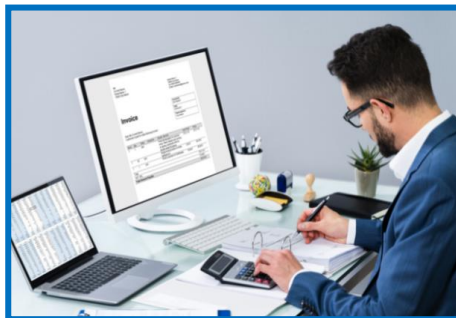November 09-13, 2025/Tamra Meeting Room,
Al Bandar Rotana Creek, Dubai, UAE

Course Reference
TM1147

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Description

This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using "MS-Excel" application.

This course is designed to provide participants with a detailed and up-to-date overview of Data Analytics in Internal Audit. It covers the data analytics in internal audit and types and sources of audit data; the audit planning with data analytics, analytical techniques and data quality and integrity for auditors; the data extraction techniques, data cleansing and transformation and data profiling and initial analysis; the sampling methods in audit analytics using Excel for basic audit analytics and Power BI for auditors; the revenue and receivables audits, procurement and payables audits, payroll and HR audits; and inventory and asset management audits, compliance and regulatory audits.

During this interactive course, participants will learn the fraud detection and investigative analytics, trend analysis and forecasting for auditors and text analytics in auditing; the visual analytics and storytelling for internal audit, continuous auditing and monitoring and machine learning in internal audit; developing an analytics vision and identifying the roles and responsibilities in audit analytics; building an audit analytics roadmap and analytics skills in internal audit teams and reporting and communicating audit analytics results; and the organizational resistance to data-driven audit and change management strategies.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain an in-depth knowledge on data analytics in internal audit

- Discuss the data analytics in internal audit and types and sources of audit data

- Carryout audit planning with data analytics, analytical techniques and data quality and integrity for auditors

- Employ data extraction techniques, data cleansing and transformation and data profiling and initial analysis

- Apply sampling methods in audit analytics using Excel for basic audit analytics and Power BI for auditors

- Illustrate revenue and receivables audits, procurement and payables audits, payroll and HR audits, inventory and asset management audits, compliance and regulatory audits

- Carryout fraud detection and investigative analytics, trend analysis and forecasting for auditors and text analytics in auditing

- Apply visual analytics and storytelling for internal audit, continuous auditing and monitoring and machine learning in internal audit

- Develop an analytics vision and identify the roles and responsibilities in audit analytics

- Build an audit analytics roadmap, develop analytics skills in internal audit teams and report and communicate audit analytics results

- Recognize organizational resistance to data-driven audit and apply change management strategies

Exclusive Smart Training Kit - H-STK®

*Participants of this course will receive the exclusive "Haward Smart Training Kit" (**H-STK®**). The **H-STK®** consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of data analytics in internal audit for internal auditors, audit managers and supervisors, risk and compliance officers, data analysts supporting audit functions, IT auditors and information systems auditors, financial auditors, business analysts and those who involved in audit, compliance, risk management and data analysis.

Course Fee

US$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Haward's certificates are accredited by the following international accreditation organizations: -

- British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

- The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:

Mr. Mike Taylor, PhD (on-going), MScLI, MBA, MBL, BSc, HDE, is a **Senior Management Consultant** with over **25 years** of extensive experience in the areas of **Data Quality Control**, **Data Quality Assessment**, **Data Quality Planning**, **Data Quality Strategy Management**, **Data Modelling**, **Root Cause Analysis & Solution Development**, **Project Planning, Scheduling & Cost Control Professional**, **Project Scheduling & Cost Control**, **Facilitation & Leadership** Skills, **Coaching**, **Human Resource** Development, **Psychometric** Testing, **Career Development** & Competence, **Succession Planning**, **Self-Development & Empowerment**, **Personal Learning Needs Identification**, Critical Success Factors (**CSFs**), Key Performance Indicators (**KPIs**), Productivity **Creativity & Thinking** Modes, **Human Resource Scorecard** Management, **Career Laddering**, **Fast-Track Career Progression** Application, **Knowledge** Management, **Customer** Management, **Leadership** Skills, **Presentation** Skills, **Negotiation** Skills, **Decision Making** Skills, **Communication** Skills, **Emotional Intelligence**, **Performance** Management, **Contract** Management, **Quality** Management, **Commercial Strategy**, **Project** Management, **Risk** Management, **Leadership & Business** Management, **Human Resource** Management, **Planning**, **Budgeting & Cost Control**, **Business Development**, Innovation, Sales Strategy and Knowledge & **Intangible Asset Assessment** Design. Further, he is also well versed in **Organization Management & Business Consulting**, **Stakeholder & Supplier Evaluation**, **Data Collection & Information Gathering**, **Value & Supply Chain** Management, **Intellectual Property & Innovation** Assessments, **Logistics & Supply Chain** Management, **Budgeting & Cost Control** and **Marketing** Management. Mr. Taylor is the **Founder & CEO** of Mitakon Innovation Pty Ltd wherein he is responsible for the development of Executives & Senior Managers specializing in innovation, knowledge management and commercial negotiation as well as authored, implemented and executed a global 21st century facilitation and leadership methodology.

During his career life, Mr. Taylor has gained his practical and field experience through his various significant positions and dedication as the **Knowledge-Solutions Service Provider**, **Founder-Principal/CIO**, **Subject Matter Expert**, **Consulting Partner**, **Executive/Management Development Facilitator**, **Multinational/Corporate Senior Management Consultant**, **Senior Quality & Management Consultant**, **Executive Management Development/Facilitator**, **Business Consultant/Facilitator**, **Business & Quality Consultant/Coach**, **Client Director**, **Administration Manager**, **Quality Manager**, **International Sales & Business Development Executive**, **Regional Sales Manager**, **National Key Accounts Manager**, **Commercial Sales & Marketing Consultant**, **Admin Assistant**, **Sales & Marketing Representative**, **Key Note Speaker**, **Lecturer** and **Instructor/Trainer** for various international companies such as the Highland Group (Business Consulting), **Anglo American**, **BHP Billiton**, Rio Tinto, DI Management Solutions (BPO), Master Deal Making Institute (MDMI), RMG/Contact Media & Communications, Paul Dinsdale Properties (PDP), Giant Leap Architects, Wise Capital Investments (HOD), Evolution® Advertising, Collaborative Xchange, Leatt Corporation, Dentsply SA, FMCG/Binzagr Company, **Unilever**, **Kellogg's**, BAT, **Hershey's**, CORO, Lilly Direct/Lennon Generics and Bausch & Lomb.

Mr. Taylor has **Master** degrees in **Leadership & Innovation**, **Business Administration** and **Business Leadership** as well as a **Bachelor** degree in **Physical Education** and pursuing **PhD** in **Global Governance & Energy Policy**. Further, he is a **Certified Instructor/Trainer**, **Certified Internal Verifier/Trainer/Assessor** by the **Institute of Leadership & Management** (**ILM**) and a member of Incremental Advantage, Da Vinci Institute, Black Management Forum, Institute of Directors (IOD), World Future Society (WFS), Social Science Research Network, University of Kwazulu Natal (Alumnus), Anthropology & Archaeology Research Network and National Research Foundation (NRF). He has further delivered numerous trainings, courses, workshops, seminars and conferences globally.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

30% Lectures
20% Practical Workshops & Work Presentations
30% Hands-on Practical Exercises & Case Studies
20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the workshop for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	**PRE-TEST**
0830 – 0930	***Introduction to Data Analytics in Internal Audit*** *Understand the Role of Analytics in Audit • Evolution from Traditional Auditing to Data-Driven Auditing • Objectives of Data Analytics in Internal Audit • Key Benefits & Challenges*
0930 – 0945	*Break*
0945 – 1030	***Types & Sources of Audit Data*** *Structured versus Unstructured Data • Internal & External Data Sources • Audit-Relevant Databases (ERP, CRM, Financial Systems) • Data Accessibility & Governance*
1030 – 1130	***Audit Planning with Data Analytics*** *Risk-based Planning Using Analytics • Identifying High-Risk Areas Using Data • Developing Audit Objectives Aligned with Data Availability • Integrating Analytics into the Audit Lifecycle*
1130 – 1215	***Overview of Analytical Techniques*** *Descriptive, Diagnostic, Predictive & Prescriptive Analytics • Trend & Pattern Analysis • Statistical Testing & Sampling Techniques • Ratio & Variance Analysis*
1215 – 1230	*Break*
1230 – 1330	***Data Quality & Integrity for Auditors*** *Importance of Accurate Data in Audits • Common Data Quality Issues • Validating & Cleansing Data • Data Lineage & Traceability*
1330 – 1420	***Audit Tools & Software for Data Analytics*** *Overview of Excel, ACL, IDEA, Power BI, Python, R • Selection Criteria for Audit Analytics Tools • Tool Strengths & Limitations • Integration with Internal Audit Systems*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	**Data Extraction Techniques** *Extracting Data from ERP Systems • SQL Basics for Auditors • API & System Connectors • Data Extraction Risks & Controls*
0830 – 0930	**Data Cleansing & Transformation** *Removing Duplicates & Inconsistencies • Normalization & Standardization • Date/Time Formatting Issues • Handling Missing & Null Values*
0930 – 0945	*Break*
0945 – 1100	**Data Profiling & Initial Analysis** *Profiling Data for Trends & Anomalies • Frequency Distribution & Outliers • Understanding Field Types & Relationships • Visual Profiling Dashboards*
1100 – 1215	**Sampling Methods in Audit Analytics** *Statistical versus Non-Statistical Sampling • Random, Stratified, Systematic Sampling • Sample Size Calculation • Audit Judgment in Sampling*
1215 – 1230	*Break*
1230 – 1330	**Using Excel for Basic Audit Analytics** *VLOOKUP & INDEX-MATCH • PivotTables for Trend Analysis • Conditional Formatting for Anomaly Detection • Built-in Data Analysis Toolpack*
1330 – 1420	**Basics of Power BI for Auditors** *Loading & Shaping Data in Power BI • Creating Audit Dashboards • Interactive Filtering for Deeper Insights • Exporting Findings for Audit Reports*
1420 – 1430	**Recap** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Two*

Day 3

0730 – 0830	**Revenue & Receivables Audits** *Identifying Unusual Revenue Trends • Duplicate Invoices & Payments • Aging Analysis of Receivables • Cross-Referencing Revenue to Shipping Logs*
0830 – 0930	**Procurement & Payables Audits** *Split Purchase Detection • Duplicate Vendors & Payments • PO-Invoice-Payment Match Analytics • Vendor Concentration Risk*
0930 – 0945	*Break*
0945 – 1100	**Payroll & HR Audits** *Ghost Employee Detection • Overtime Anomalies • Bonus & Allowance Verification • Access Rights versus Payroll Processing*
1100 – 1215	**Inventory & Asset Management Audits** *Cycle Count Variances • Slow-Moving & Obsolete Stock Detection • Fixed Asset Tagging & Movement Analysis • Comparison of Physical versus Book Values*
1215 – 1230	*Break*

1230 – 1330	**Compliance & Regulatory Audits** *Monitoring Policy Exceptions • Transactions Outside Approval Limits • Segregation of Duties Violations • Trend Deviations from Compliance Norms*
1330 – 1420	**Fraud Detection & Investigative Analytics** *Benford's Law for Fraud Detection • Pattern & Cluster Analysis • Continuous Transaction Monitoring • Red Flag Dashboards*
1420 – 1430	**Recap** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Three*

Day 4:   **Wednesday, 10th of December 2025**

0730 – 0830	**Trend Analysis & Forecasting for Auditors** *Identifying long-term trends • Seasonality in business Cycles • Regression Analysis for Predictions • Forecasting High-Risk Activities*
0830 – 0930	**Text Analytics in Auditing** *Analyzing Emails & Unstructured Text • Keyword & Sentiment Analysis • Extracting Risk Terms from Documents • NLP Basics for Auditors*
0930 – 0945	*Break*
0945 – 1100	**Visual Analytics & Storytelling for Internal Audit** *Building Compelling Visual Reports • Choosing the Right Chart for the Message • Highlighting Anomalies Visually • Using Storytelling for Audit Committees*
1100 – 1215	**Continuous Auditing & Monitoring** *Concepts of Real-Time Auditing • Designing Continuous Audit Scripts • Alerts & Exception-Based Monitoring • Integration with Business Systems*
1215 – 1230	*Break*
1230 – 1330	**Machine Learning in Internal Audit** *Overview of Supervised versus Unsupervised Learning • Use Cases in Internal Audit • Anomaly Detection Algorithms • Risks of Bias in AI Audit Tools*
1330 – 1420	**Case Study: End-to-End Analytics-Driven Audit** *Setting Audit Objectives Based on Data • Planning, Execution & Reporting with Analytics • Visualizing Findings • Lessons Learned from Real-World Audits*
1420 – 1430	**Recap** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Four*

**Day 5:**   **Thursday, 11th of December 2025**

| 0730 – 0830	**Audit Analytics Strategy & Governance** *Developing an Analytics Vision • Roles & Responsibilities in Audit Analytics • Aligning with Overall Audit Strategy • Data Analytics Maturity Model*
0830 – 0930	**Building an Audit Analytics Roadmap** *Setting Short & Long-Term Goals • Selecting Priority Areas • Resource & Skill Requirements • Pilot Programs & Scalability*
0930 – 0945	*Break*
0945 – 1100	**Developing Analytics Skills in Internal Audit Teams** *Training Needs Identification • Blending Audit & Data Science Expertise • Upskilling Methods: Workshops, Certifications, Labs • Role of the CAE in Analytics Talent Development*

1100 – 1230	**Reporting & Communicating Audit Analytics Results** *Designing Actionable Audit Dashboards • Explaining Complex Findings Simply • Providing Recommendations Based on Data • Integrating Results into Audit Reports*
1230 – 1245	*Break*
1245 – 1345	**Overcoming Barriers to Adoption** *Organizational Resistance to Data-Driven Audit • Common Roadblocks & Myths • Change Management Strategies • Leadership Buy-In & Value Demonstration*
1345 – 1400	**Course Conclusion** *Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course*
1400 – 1415	**POST-TEST**
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Simulator (Hands-on Practical Sessions)

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using "MS-Excel" application and" Microsoft Power BI".

MS-Excel

"Microsoft Power BI"
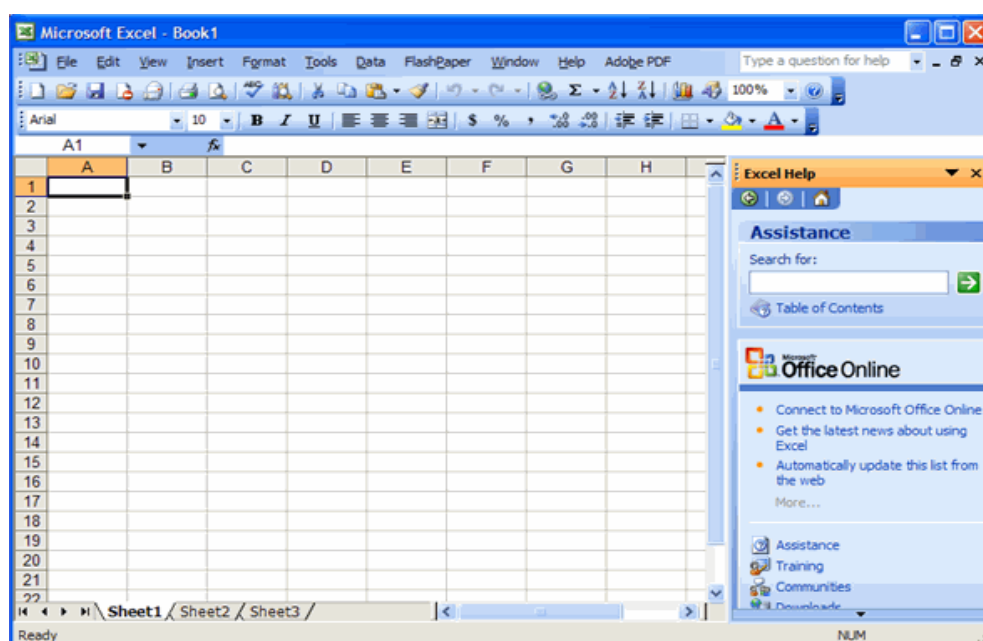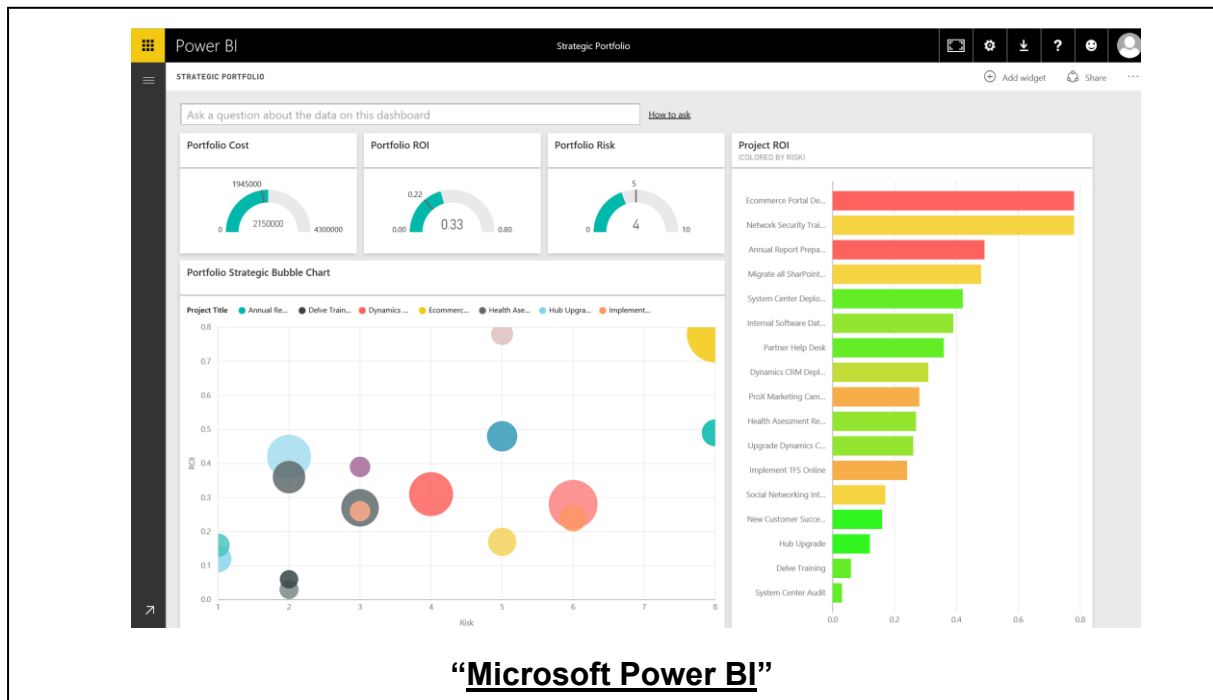
Course Coordinator
Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org