COURSE OVERVIEW IT0026
Certificate in Advanced Data Analysis

Course Title
Certificate in Advanced Data Analysis

Course Date/Venue
January 18-22, 2026/TBA Meeting Room, Aloft Dharan Hotel, Al Khobar, KSA

Course Reference
IT0026

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 the "Microsoft Power BI" application.

This course is designed to provide participants with a detailed and up-to-date overview of Certificate in Advanced Data Analysis. It covers the definition and scope of data analysis, role in business decision-making and research; the differences between descriptive, diagnostic, predictive and prescriptive analytics and applications across industries; the data lifecycle and management, statistical foundations for data analysis, exploratory data analysis (EDA) and tools for advanced data analysis; the regression analysis, multivariate analysis, time series analysis, survival and event analysis and non-parametric methods; and the machine learning for data analysis, classification techniques, regression-based ML models and neural networks and deep learning basics.

During this interactive course, participants will learn the model deployment and validation, advanced data visualization techniques and communicating data insights; the big data concepts and tools, text analytics and natural language processing (NLP) and data ethics and governance; the strategic use of data analytics, industry applications of advanced data analysis and emerging trends in data analytics; and building the analytics capability in organizations covering setting up analytics centers of excellence (CoE), recruiting and upskilling data teams, embedding analytics into workflows and change management for data-driven culture.

Course Objectives

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

- Apply and gain an advanced knowledge on data analysis
- Discuss the definition and scope of data analysis, role in business decision-making and research, differences between descriptive, diagnostic, predictive and prescriptive analytics and applications across industries
- Implement data lifecycle and management, statistical foundations for data analysis, exploratory data analysis (EDA) and tools for advanced data analysis
- Apply regression analysis, multivariate analysis, time series analysis, survival and event analysis and non-parametric methods
- Carryout machine learning for data analysis, classification techniques, regression-based ML models and neural networks and deep learning basics
- Employ model deployment and validation, advanced data visualization techniques and communicating data insights
- Identify big data concepts and tools, text analytics and natural language processing (NLP) and data ethics and governance
- Apply strategic use of data analytics, industry applications of advanced data analysis and emerging trends in data analytics
- Build analytics capability in organizations covering setting up analytics centers of excellence (CoE), recruiting and upskilling data teams, embedding analytics into workflows and change management for data-driven culture

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 advanced data analysis for data analysts and senior analysts, data scientists and machine learning engineers, business analysts and decision-making professionals, IT and software professionals, managers and team leaders and those who are involved in handling, interpreting and making decisions based on data.

Accommodation

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

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.

Course Certificate(s)

(1) Internationally recognized Competency Certificates will be issued to participants who completed a minimum of 80% of the total tuition hours and successfully passed the exam at the end of the course. Certificates are valid for 5 years.

Recertification is FOC for a Lifetime.

Sample of Certificates

The following are samples of the certificates that will be awarded to course participants:-

(2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs) earned during the course.

Haward Technology Middle East
Continuing Professional Development (HTME-CPD)

CEU Official Transcript of Records

TOR Issuance Date: 14-Nov-24

HTME No. 74851

Participant Name: Waleed Al Habeeb

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
IT0026	Certificate in Advanced Data Analysis	Nov 10-14, 2024	30	3.0

Total No. of CEU's Earned as of TOR Issuance Date **3.0**

TRUE COPY

Jaryl Castillo
Academic Director

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

P.O. Box 26070, Abu Dhabi, United Arab Emirates | Tel.: +971 2 3091 714 | E-mail: info@haward.org | Website: www.haward.org

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:

Dr. Mike Tay, PhD, MSc, BSc, is a **Senior IT**, **Telecommunications**, **Control & Electronics Engineer** with over **30 years** of extensive experience. His expertise widely covers in the areas of **Cloud Infrastructure**, **Digital Transformation**, **Cloud Security Mechanism**, **E-Communication & Collaboration** Skills, **Virtual Communication**, **Social Networking**, **Business Intelligence** Tools, **IT Disaster Recovery & Planning**, **IT Risk Management** Concepts, **IT Risk Management** Standard Approaches, I**T Risk Management** Planning, **IT Risk** Identification, **IT Risk Monitoring** & **Control**, **Information Technology** Architectures, **Application** Architecture, **Portfolio** Management, **Application Security**, **Application Integration** Technologies & Strategies, **Solution Architecture** Patterns, **Web Applications** & Services, **Mobile** & **Cloud Applications**, **Blended Learning** Programs, **Web Programming**, Advanced **Database Management** Systems, **Web Design**, **HCI**, 3D Animation, Multimedia Design, Gamification Techniques, Internal & External Auditing, **OS Architectures** and **Network Security**. Further, he is also well-versed in Mobile Protocols, 4G LTE, GSM/UMTS, CMDA2000, WIMAX Technology, HSPA+, Alarm Management System, Computer Architecture, Logic & Microprocessor Design, Embedded Systems Design plus Computer Networking with CISCO, Network Communication, Industrial Digital Communication, Designing Telecommunications Distribution System, Electrical Engineering, WiMAX Broadband Wireless System, TT Intranet & ADSL Network, TT Web & Voicemail, Off-site ATM Network, IT Maintenance, Say2000i, IP Phone, National Address & ID Automation, Electricity Distribution Network, Customs Network & Maintenance, LAN & WAN Network, UYAP Network, Network Routing Protocols, Multicast Protocols, Network Management Protocols, Mobile & Wireless Networks and Digital Signal Processing. Currently, he is the **Technical Advisor** of **Izmir Altek**.

During his career life, Dr. Tay worked with various companies such as the **KOC Sistem**, **Meteksan Sistem**, **Altek BT**, **Yasar University**, **Dokuz Eylul University**, **METU** and occupied significant positions like the **Aegean Region Manager**, **Group Leader**, **Technical Services Manager**, **Field Engineer**, **Research Assistant**, **Instructor**, **Technical Advisor** and the **Dr. Instructor**.

Dr. Tay has **PhD**, **Master** and **Bachelor** degrees in **Electrical & Electronic Engineering** from the **Dokuz Eylul University** and the **Middle East Technical University** (**METU**) respectively. Further, he is a **Certified Instructor/Trainer**, **Technical Trainer (Australia)**, **Trainer** for **Data-Communication System (England & Canada)**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**), a **Certified CISCO** (**CCSP**, **CCDA**, **CCNP**, **CCNA**, **CCNP**) **Specialist**, a **Certified CISCO IP Telephony Design Specialist**, **CISCO Rich Media Communications Specialist**, **CISCO Security Solutions** & **Design Specialist** and **Information Systems Security** (**INFOSEC**) **Professional**. He has delivered and presented innumerable training courses and workshops worldwide.

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: ***Sunday, 18th January 2026***

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Introduction to Advanced Data Analysis*** *Definition and Scope of Data Analysis • Role in Business Decision-Making and Research • Differences Between Descriptive, Diagnostic, Predictive, and Prescriptive Analytics • Applications Across Industries*
0930 – 0945	*Break*
0945 – 1100	***Data Lifecycle & Management*** *Data Collection Methods and Sources • Data Storage Systems (Databases, Warehouses, Lakes) • Data Quality and Cleansing Techniques • Metadata and Documentation*
1100 - 1200	***Statistical Foundations for Data Analysis*** *Probability Distributions and Hypothesis Testing • Sampling Methods and Estimation • Confidence Intervals and Significance Levels • Correlation and Causation in Data*
1200 - 1230	***Exploratory Data Analysis (EDA)*** *Techniques for Initial Data Exploration • Outlier Detection Methods • Visualization of Data Distributions • Feature Engineering Basics*
1230 – 1245	*Break*
1245 – 1330	***Tools for Advanced Data Analysis*** *Python (NumPy, Pandas, SciPy, scikit-learn) • R for Advanced Statistical Modeling • SQL for Data Extraction and Manipulation • Data Visualization Tools (Tableau, Power BI, matplotlib)*
1330 – 1420	***Case Study – Real-World Data Challenges*** *Common Issues in Real Datasets • Identifying Missing and Inconsistent Values • Data Preprocessing Workflows • Hands-On Problem-Solving Exercise*
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:	Monday, 19th January 2026
0730 – 0830	***Regression Analysis*** *Linear Regression and Assumptions • Logistic Regression for Classification Problems • Multicollinearity Detection and Remedies • Model Validation and Residual Analysis*
0830 – 0930	***Multivariate Analysis*** *Principal Component Analysis (PCA) • Factor Analysis for Dimensionality Reduction • Cluster Analysis (K-Means, Hierarchical Clustering) • MANOVA and Discriminant Analysis*
0930 – 0945	*Break*
0945 – 1100	***Time Series Analysis*** *Components of Time Series (Trend, Seasonality, Noise) • ARIMA and SARIMA Models • Exponential Smoothing Techniques • Forecasting Applications*
1100 – 1230	***Survival & Event Analysis*** *Basics of Survival Analysis • Kaplan-Meier Estimator • Hazard Functions and Cox Proportional Hazards Model • Applications in Business and Healthcare*
1230 – 1245	*Break*
1245 – 1330	***Non-Parametric Methods*** *Chi-Square and Rank-Sum Tests • Kruskal-Wallis Test • Bootstrapping Methods • When to Apply Non-Parametric Techniques*
1330 – 1420	***Case Study – Multivariate Dataset Analysis*** *Choosing the Right Analysis Technique • Applying PCA for Dimension Reduction • Clustering Customers Based on Behaviors • Discussion of Results and Interpretation*
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:	Tuesday, 20th January 2026
0730 – 0830	***Basics of Machine Learning for Data Analysis*** *Supervised versus Unsupervised Learning • Model Training, Validation, and Testing • Overfitting and Underfitting Issues • Evaluation Metrics (Accuracy, Precision, Recall, F1-Score)*
0830 – 0930	***Classification Techniques*** *Decision Trees and Random Forests • Support Vector Machines (SVM) • Naïve Bayes Classifiers • Ensemble Methods (Bagging, Boosting, Stacking)*
0930 – 0945	*Break*
0945 – 1100	***Regression-Based ML Models*** *Polynomial Regression • Ridge and Lasso Regression • Elastic Net Method • Applications in Forecasting and Pricing*
1100 – 1230	***Neural Networks & Deep Learning Basics*** *Structure of Artificial Neural Networks • Activation Functions and Backpropagation • Convolutional Neural Networks (CNNs) • Applications in Image and Text Analysis*
1230 – 1245	*Break*

1245 – 1330	***Model Deployment & Validation*** *Cross-Validation Techniques • ROC Curve and AUC Scoring • Hyperparameter Tuning • Bias-Variance Tradeoff*
1330 – 1420	***Case Study – Predictive Modeling*** *Building a Classification Model with Real Data • Feature Selection and Transformation • Comparing Multiple Models' Performance • Business Implications of Model Predictions*
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, 21st January 2026

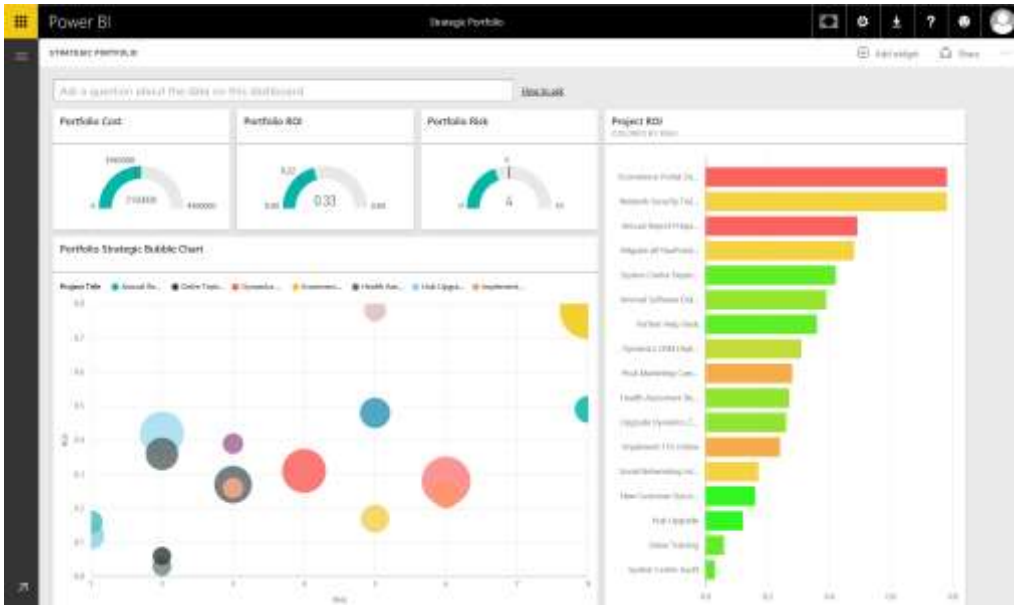
0730 – 0830	***Advanced Data Visualization Techniques*** *Interactive Dashboards (Tableau, Power BI) • Geospatial Visualizations (Heatmaps, Maps) • Advanced Plots (Pair Plots, Violin Plots, Sankey Diagrams) • Best Practices in Storytelling with Data*
0830 – 0930	***Communicating Data Insights*** *Structuring Analytical Reports • Translating Technical Results for Decision-Makers • Data Storytelling Frameworks (Context, Insight, Action) • Avoiding Misrepresentation of Data*
0930 – 0945	*Break*
0945 – 1100	***Big Data Concepts & Tools*** *Introduction to Big Data and Its 5Vs • Hadoop and Spark for Large-Scale Analytics • Streaming Data Processing • Integration of Big Data with BI Platforms*
1100 – 1230	***Text Analytics & Natural Language Processing (NLP)*** *Text Preprocessing (Tokenization, Stemming, Lemmatization) • Sentiment Analysis Methods • Topic Modeling (LDA, NMF) • Applications in Social Media and Customer Feedback*
1230 – 1245	*Break*
1245 – 1330	***Data Ethics & Governance*** *Data Privacy and GDPR Compliance • Ethical Use of AI and Algorithms • Avoiding Bias in Data-Driven Decisions • Corporate Data Governance Frameworks*
1330 – 1420	***Case Study – Big Data Analytics Application*** *Applying Spark for Processing Large Datasets • Visualizing Customer Trends • Performing Sentiment Analysis on Text Data • Presenting Insights to Management*
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, 22nd January 2026**

0730 – 0830	***Strategic Use of Data Analytics*** *Role of Analytics in Strategic Planning • Data-Driven Decision-Making Frameworks • Analytics for Competitive Advantage • Integration with Enterprise Systems*
0830 – 0930	***Industry Applications of Advanced Data Analysis*** *Finance (Fraud Detection, Risk Modeling) • Healthcare (Predictive Diagnosis, Patient Analysis) • Retail (Customer Segmentation, Recommendation Engines) • Oil & Gas/Energy (Predictive Maintenance, Demand Forecasting)*
0930 – 0945	*Break*
0945 – 1100	***Emerging Trends in Data Analytics*** *AI-Powered Analytics • Edge Analytics in IoT • Augmented Analytics with Natural Language Queries • Quantum Computing in Analytics*
1100 - 1200	***Building Analytics Capability in Organizations*** *Setting Up Analytics Centers of Excellence (CoE) • Recruiting and Upskilling Data Teams • Embedding Analytics into Workflows • Change Management for Data-Driven Culture*
1200 – 1215	*Break*
1215– 1300	***Capstone Project – End-to-End Analysis*** *Select a Dataset Relevant to Participants' Field • Perform EDA, Modeling, and Visualization • Draw Insights and Propose Decisions*
1300 – 1315	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about Topics that were Covered During the Course*
1315 – 1415	***COMPETENCY EXAM***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Hands-on Practical Sessions

Practical session 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 the “Microsoft Power BI”.



“Microsoft Power BI”

Course Coordinator

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org