COURSE OVERVIEW GE0049
Data Driven Technologies: Applications & Case studies

Course Title
Data Driven Technologies: Applications & Case studies

Course Reference
GE0049

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

Course Date/Venue

Session(s)	Date	Venue
1	May 12-16, 2024	Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE or, Online Virtual Training
2	June 03-07, 2024	Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE or, Online Virtual Training
3	September 02-06, 2024	Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE or, Online Virtual Training
4	November 03-07, 2024	Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE or, Online Virtual Training

Course Description

This practical and highly-interactive course includes real-life case studies where participants will be engaged in a series of interactive small groups and class workshops.

This course is designed to provide participants with a detailed and up-to-date overview of Data Driven Technologies: applications and case studies. It covers the importance of data-driven technologies including the key technologies and tools like AI, machine learning, big data analytics and cloud computing; the best practices for data collection, storage and management; the reliability and security of data in petroleum applications; using data to predict trends and behaviors in petroleum operations; and the various models of machine learning and their specific applications in the industry.

Further, the course will also discuss the data analytics to predict equipment failures and schedule maintenance; the drilling operations, reservoir characterization and risk assessment and management; the real-time data monitoring and management; and the operational intelligence through integrated technologies.

During this interactive course, participants will learn the data visualization techniques and handling large-scale data sets; how cloud platforms facilitate data management and analytics; the differences, benefits and how data lakes and warehouses can be utilized in the petroleum industry; the critical aspects of data security and privacy; the cultural change and digital transformation; the analytical insights into actionable business decisions; and the future trends in data technologies and overcoming challenges in adopting new technologies.

Course Objectives

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

- Apply and gain an in-depth knowledge on data driven technologies
- Discuss the importance of data-driven technologies including the key technologies and tools like AI, machine learning, big data analytics and cloud computing
- Carryout best practices for data collection, storage and management and ensure the reliability and security of data in petroleum applications
- Use data to predict trends and behaviors in petroleum operations as well as identify various models of machine learning and their specific applications in the industry
- Use data analytics to predict equipment failures and schedule maintenance
- Optimize drilling operations, enhance reservoir characterization and apply risk assessment and management
- Carryout real-time data monitoring and management and enhance operational intelligence through integrated technologies
- Employ data visualization techniques, handle large-scale data sets and explain how cloud platforms facilitate data management and analytics
- Identify the differences, benefits and how data lakes and warehouses can be utilized in the petroleum industry
- Address the critical aspects of data security and privacy and apply cultural change and digital transformation
- Turn analytical insights into actionable business decisions as well as discuss future trends in data technologies and overcome challenges in adopting new technologies

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, sample video clips of the instructor's actual lectures & practical sessions during the course conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of data driven technologies for managers, data engineers, analysts and other technical staff.

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.

Virtual Training (If Applicable)

If this course is delivered online as a Virtual Training, the following limitations will be applicable:-

Certificates	Only soft copy certificates will be issued to participants through Haward's Portal. This includes Wallet Card Certificates if applicable
Training Materials	Only soft copy Training Materials (PDF format) will be issued to participant through the Virtual Training Platform
Training Methodology	80% of the program will be theory and 20% will be practical sessions, exercises, case studies, simulators or videos
Training Program	The training will be for 4 hours per day starting at 0930 and ending at 1330
H-STK Smart Training Kit	Not Applicable
Hands-on Practical Workshops	Not Applicable
Site Visit	Not Applicable
Simulators	Only software simulators will be used in the virtual courses. Hardware simulators are not applicable and will not be used in Virtual Training

Course Fee

F2F Classroom: 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.
Online Virtual: US$ 2,750 per Delegate + **VAT**.

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

Certificates are accredited by the following international accreditation organizations: -

- 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.

- British Accreditation Council (BAC)

  Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. 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.

Accommodation

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

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. Dimitry Rovas, CEng, MSc, PMI-PMP, is a **Senior Engineer** with extensive industrial experience in **Oil**, **Gas**, **Power** and **Utilities** industries. His expertise include **Data Driven Technologies**, **Oil & Gas Trading**, **Pricing & Economic** Framework, **Crude Oil Market Trading**, **Market** Strategies, **Crude Oil Pricing** System, **Linear Programming**, **Data Analysis** Techniques, **Detailed Engineering Drawings**, **Codes & Standards**, **GPS & Data Capture**, **Advanced Design** Techniques, **P&ID Reading**, **Interpretation & Developing**, **Project Management Economics** Program, **Pump** Technology, **Pump** Selection & Installation, **Centrifugal Pumps & Troubleshooting**, **Reciprocating & Centrifugal Compressors**, **Compressor** Control & Protection, **Gas & Steam Turbines**, **Turbine** Operations, **Gas Turbine** Technology, **Valves**, **Bearings & Lubrication**, Advanced **Machinery Dynamics**, **Rubber Compounding**, **Elastomers**, **Thermoplastic**, **Industrial Rubber Products**, **Rubber** Manufacturing Systems, **Heat Transfer**, **Vulcanization Methods**, **Process Plant Shutdown & Turnaround**, **Maintenance Optimization & Best Practices**, **Maintenance Auditing & Benchmarking**, **Reliability** Management, **Rotating Equipment**, **Energy Conservation**, **Energy Loss Management** in Electricity Distribution Systems, **Energy Saving**, **Thermal Power Plant** Management, **Thermal Power Plant** Operation & Maintenance, **Heat Transfer**, **Machine Design**, **Fluid Mechanics**, **Heating & Cooling Systems**, **Heat Insulation Systems**, **Heat Exchanger & Cooling Towers**, **Mechanical Erection**, **Heavy Rotating Equipment**, Material Unloading & Storage, Commissioning & Start-Up. Further, he is also well-versed in MS project & AutoCAD, EPC Power Plant, Power Generation, Combined Cycle Powerplant, Leadership & Mentoring, Project Management, Strategic Planning/Analysis, Construction Management, Team Formation, Relationship Building, Communication, Reporting and Six Sigma. He is currently the **Project Manager** wherein he is managing, directing and controlling all activities and functions associated with the domestic heating/cooling facilities projects.

During his life career, Mr. Rovas has gained his practical and field experience through his various significant positions and dedication as the **EPC Project Manager**, **Field Engineer**, **Preventive Maintenance Engineer**, **Researcher**, **Instructor/Trainer**, **Telecom Consultant** and **Consultant** from various companies such as the Podaras Engineering Studies, Metka and Diadikasia, S.A., **Hellenic Petroleum Oil Refinery** and COSMOTE.

Mr. Rovas is a **Chartered Engineer** of the **Technical Chamber** of **Greece**. Further, he has **Master** degrees in **Mechanical Engineering** and **Energy Production & Management** from the **National Technical University of Athens**. Moreover, he is a **Certified Instructor/Trainer**, a **Certified Project Management Professional** (**PMP**), a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**) and a **Certified Six Sigma Black Belt**. He is an active member of Project Management Institute (**PMI**), Technical Chamber of Greece and Body of Certified Energy Auditors and has further delivered numerous trainings, seminars, courses, workshops and conferences internationally.

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	***Overview of Data-Driven Technologies:*** *Definition, Importance & Evolution in the Petroleum Sector*
0930 – 0945	*Break*
0945 – 1030	***Key Technologies & Tools:*** *Introduction to Technologies Like AI, Machine Learning, Big Data Analytics & Cloud Computing*
1030 – 1130	***Data Management Fundamentals:*** *Best Practices for Data Collection, Storage & Management*
1130 – 1215	***Data Quality & Governance:*** *Ensuring the Reliability & Security of Data in Petroleum Applications*
1215 – 1230	*Break*
1230 – 1330	***Introduction to Predictive Analytics:*** *Basics of Using Data to Predict Trends & Behaviors in Petroleum Operations*
1330 – 1420	***Case Study Overview:*** *Introduction to Real-World Case Studies that Will be Discussed Throughout the Course*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	***Machine Learning Models in Petroleum:*** *Overview of Various Models & their Specific Applications in the Industry*
0830 – 0930	***Applications of Predictive Maintenance:*** *Using Data Analytics to Predict Equipment Failures & Schedule Maintenance*
0930 – 0945	*Break*
0945 – 1100	***Optimization of Drilling Operations:*** *Case Studies on How Data Analytics Optimize Drilling & Reduce Costs*
1100 – 1215	***Enhancing Reservoir Characterization:*** *How Machine Learning Contributes to Better Understanding Reservoir Behaviors*
1215 – 1230	*Break*
1230 – 1420	***Risk Assessment & Management:*** *Utilizing Data to Assess & Mitigate Risks in Petroleum Operations*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0830	***IoT in the Petroleum Industry:*** *Introduction to IoT Technologies & How they are Revolutionizing the Industry*
0830 – 0930	***Real-Time Data Monitoring & Management:*** *Using IoT for Continuous Monitoring & Data Collection*
0930 – 0945	*Break*
0945 – 1100	***Integration of IoT with AI:*** *Enhancing Operational Intelligence Through Integrated Technologies*
1100 – 1215	***Case Study:*** *IoT for Asset Management: Detailed Discussion on a Case where IoT Significantly Improved Asset Management*

1215 – 1230	*Break*
1230 – 1420	***Data Visualization Techniques:*** *Tools & Techniques for Visualizing Real-Time Data to Enhance Decision-Making*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0830	***Big Data Technologies in Petroleum:*** *Exploration of Technologies for Handling Large-Scale Data Sets*
0830 – 0930	***Cloud Computing & its Advantages:*** *How Cloud Platforms Facilitate Data Management & Analytics*
0930 – 0945	*Break*
0945 – 1100	***Data Lakes & Warehouses:*** *Differences, Benefits & How they Can be Utilized in the Petroleum Industry*
1100 – 1215	***Security & Privacy in the Cloud:*** *Addressing the Critical Aspects of Data Security & Privacy*
1215 – 1230	*Break*
1230 – 1330	***Case Study:*** *Cloud-Based Data Analytics: Examining a Successful Implementation of Cloud-Based Analytics in Petroleum*
1330 – 1420	***Group Activity:*** *Designing a Cloud Strategy for Data Analytics in a Petroleum Company Setting*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0930	***Cultural Change & Digital Transformation:*** *Strategies for Fostering a Data-Driven Culture within an Organization*
0930 – 0945	*Break*
0945 – 1100	***From Data to Decisions:*** *Practical Steps for Turning Analytical Insights into Actionable Business Decisions*
1100 – 1230	***Future Trends in Data Technologies:*** *Exploring Upcoming Innovations in Data Technology & their Potential Impact*
1230 – 1245	*Break*
1245 – 1345	***Overcoming Challenges in Adoption:*** *Identifying & Overcoming Barriers to Adopting New Technologies*
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-

Course Coordinator

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