COURSE OVERVIEW IT0028
Artificial Intelligence Applications Oil Fields

Course Title
Artificial Intelligence Applications Oil Fields

Course Date/Venue
Session 1: May 12-16, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
Session 2: November 02-06, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
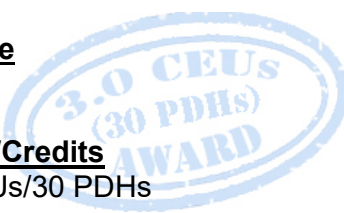
Course Reference
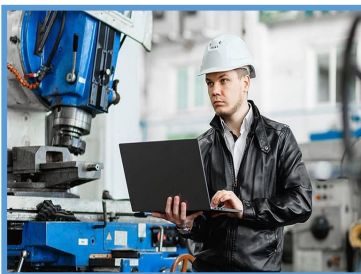IT0028

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

Course Description

This practical and highly-interactive course includes real-life case studies and exercises 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 Artificial Intelligence in Oil & Gas Industry. It covers the role of AI in oil and gas industry; the machine learning and its applications; the data analytics and the techniques for data collection, cleaning and preparation; the visualization techniques for data analysis; the techniques for handling and analyzing big data in the industry; the natural language processing and computer vision and its applications in the industry; and the automated document classification, information extraction, automated inspection and defect detection.

During this interactive course, participants will learn how AI is used in exploration and production, reservoir management, refining and petrochemicals, supply chain management and safety and environmental management; the use of AI during seismic interpretation and well optimization, production forecasting and enhanced oil recovery, process optimization and energy management, logistics optimization and inventory management and detecting and preventing leaks and spills; the potential future of AI in the industry; the challenges and opportunities associated with AI in the industry; and the strategies for successful implementation of AI in the industry.

Course Objectives

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

- Apply and gain an in-depth knowledge on artificial intelligence in oil and gas industry

- Discuss the role of AI in oil and gas industry including the machine learning and its applications

- Carryout data analytics and the techniques for data collection, cleaning and preparation

- Employ visualization techniques for data analysis and techniques for handling and analyzing big data in the industry

- Describe natural language processing and computer vision and its applications in the industry

- Apply automated document classification, information extraction, automated inspection and defect detection

- Explain how AI is used in exploration and production, reservoir management, refining and petrochemicals, supply chain management and safety and environmental management

- Use AI during seismic interpretation and well optimization, production forecasting and enhanced oil recovery, process optimization and energy management, logistics optimization and inventory management and detecting and preventing leaks and spills

- Discuss the potential future of AI in the industry including the challenges and opportunities associated with AI in the industry

- Apply strategies for successful implementation of AI in the industry

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 artificial intelligence for information technology staff.

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

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**. 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. George Chel, PhD, MSc, BSc, Prince2, CISCO-CCNA, CISCO-CCENT, is a **Senior Communication & Telecommunications Engineer** with over **20 years** of extensive experience within the **Petrochemical**, **Oil & Gas** and **Power** industries specializing in **Fiber Optics** Technology, **Access Network** Planning, **Fiber Optics Transmission**, **Fiber Optic Cables** Construction, **Optical Drivers & Detectors**, **Fiber Optic** Termination, **Fiber Optic Cables** Installation, **Fiber Optics** System Design, **Media Converters**, **Fiber Optic** Systems Testing, **Optical Fibers** Technologies, **Opto-Electronics**, **Data Networking**, **Access Networks**, **Optical Networks**, DWDM, DSL, FTTH, GPON, **Wireless & Mobile Networks**, **Telecom** Technologies, **Core Network** Technologies, Broadband Architectures & Services, **Analogue & Digital Communications**, **IP Networking**, **Network Automation**, Software Defined Networking (**SDN**), Network Function Virtualization (**NFV**), Internet of Things (**IoT**), Converged Connectivity & Hybrid Access, RF Electronics & Digital Communications, **Communications Systems** Analysis, **Network Security**, **Computer Networks** Modelling & Simulation, **Data Networks & Communications**, **Networking Technology**, Networking Concepts, I**CT Systems** Management & Strategy, Strategic Information Systems, Wireless Access Points, Analogue & Digital Electronics, **Circuit Analysis**, **Circuit Design**, Electromagnetics, WiMAX Broadband Wireless System, Networking Design & Configurations, Practical **Industrial Data Communications & Telecommunications**, **Industrial Data Communication** Systems, Effective **Telecoms Strategies**, Integrated Electro-Optic Devices & Systems, **Telecom**, **Datacom & Network**, **EtherNet** Maintenance and Troubleshooting, Synchronous Digital Hierarchy (**SDH**), IP Telephony Design (**IPTD**) and LTE Technology (**WiMax**) Skills. He is currently the **Core Technologies Section Manager** of Hellenic Telecommunications Organization wherein he is responsible for managing, carrying, conducting, leading and participating in projects relating to the design, evaluation and trial of new aggregation/core network services & systems projects.

During his career, Dr. Chel has gained his practical and field experience through his various significant positions and dedication as the **Deputy Manager**, **Project Manager**, **Lab Section Head**, **Deputy Section Head**, **Program Leader**, **Access Technologies Senior Expert**, **Access Network Development Engineer**, **Telecom Engineer**, **Technical Engineer**, **Senior Expert**, **Senior Technical Instructor/Lecturer**, **Part-Time Lecturer**, **Development Engineer**, **R&D Engineer** and **Research Programmes Engineer**, **Post-Doctoral Research Associate** and **Teaching & Laboratory Assistant** from the Hellenic Telecommunication Organization – Deutsche Telekom Group, Fixed Access Shared Service Center – Deutsche Telekom Technology, OTE Academy, Athens Metropolitan College and Imperial College London.

Dr. Chel has a **PhD** in **Photonics**, **Optical Communications & Opto-Electronics** from the **Imperial College London**, **UK**, a **Master** degree in **Medical Physics & Clinical Engineering** from the **University of Sheffield**, **UK**, a **Bachelor** degree in **Physics** from the **University of Crete**, **Greece** and a **Graduate Diploma** in **Management** from the **University of London**, **UK**. Further, he is a **Certified Instructor/Trainer**, a **Registered PRINCE2 Project Management Practitioner**, a **Cisco Certified Network Associate Routing** and **Switching** (**CCNA**) and a **Cisco Certified Entry Networking Technician** (**CCENT**). Moreover, he is an author of many books, technical publication at high-profile scientific journals and conferences and deliver numerous trainings, courses, workshops, seminars 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 course 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 AI in Oil & Gas Industry** *Oil & Gas Industry and the Role of AI in it • Different AI Techniques Used in the Industry • Examples of Successful AI Implementations in the Industry*
0930 - 0945	*Break*
0945 - 1130	**Machine Learning in Oil & Gas Industry** *Machine Learning and its Applications in the Industry • Types of Machine Learning Algorithms used in the Industry (e.g., Supervised Learning, Unsupervised Learning, Reinforcement Learning) • Examples of Machine Learning in the Industry, such as Predictive Maintenance and Production Optimization*
1130 - 1230	**Data Analytics in Oil & Gas Industry** *Data Analytics and its Importance in the Industry • Techniques for Data Collection, Cleaning, and Preparation • Visualization Techniques for Data Analysis*
1230 - 1245	*Break*
1245 - 1420	**Big Data in Oil & Gas Industry** *Big Data and its Applications in the Industry • The Challenges Associated with Big Data in the Industry • Techniques for Handling and Analyzing Big Data in the Industry*
1420 - 1430	**Recap**
1430	*End of Day One*

Day 2

0730 - 0930	**Natural Language Processing in Oil & Gas Industry** *Natural Language Processing and its Applications in the Industry*
0930 - 0945	*Break*
0945 - 1100	**Natural Language Processing in Oil & Gas Industry (cont'd)** *Examples of Successful Natural Language Processing Implementations in the Industry, such as Automated Document Classification and Information Extraction*
1100 - 1230	**Computer Vision in Oil & Gas Industry** *Computer Vision and its Applications in the Industry*
1230 - 1245	*Break*
1245 - 1420	**Computer Vision in Oil & Gas Industry (cont'd)** *Examples of Computer Vision Implementations in the Industry, such as Automated Inspection and Defect Detection*
1420 – 1430	**Recap**
1430	*Lunch & End of Day Two*

Day 3

0730 - 0930	**AI for Exploration and Production** *How AI is Used in Exploration and Production*
0930 - 0945	*Break*
0945 - 1100	**AI for Exploration and Production (cont'd)** *Examples of Successful AI Implementations in Exploration and Production, such as Seismic Interpretation and Well Optimization*
1100 - 1230	**AI for Reservoir Management** *AI for Reservoir Management*
1230 - 1245	*Break*
1245 - 1420	**AI for Reservoir Management (cont'd)** *Examples of Successful AI Implementations in Reservoir Management, such as Production Forecasting and Enhanced Oil Recovery*
1420 – 1430	**Recap**
1430	*Lunch & End of Day Three*

Day 4

0730 - 0930	**AI for Refining and Petrochemicals** *How AI is Used in Refining and Petrochemicals*
0930 - 0945	*Break*
0945 - 1100	**AI for Refining and Petrochemicals (cont'd)** *Examples of Successful AI Implementations in Refining and Petrochemicals, such as Process Optimization and Energy Management*
1100 - 1230	**AI for Supply Chain Management** *How AI is used in Supply Chain Management*
1230 - 1245	*Break*
1245 - 1420	**AI for Supply Chain Management (cont'd)** *Examples of Successful AI Implementations in Supply Chain Management, such as Logistics Optimization and Inventory Management*
1420 – 1430	**Recap**
1430	*Lunch & End of Day Four*

Day 5

0730 - 0930	**AI for Safety and Environmental Management** *How AI is Used for Safety and Environmental Management*
0930 - 0945	*Break*
0945 - 1100	**AI for Safety and Environmental Management (cont'd)** *Examples of Successful AI Implementations for Safety and Environmental Management, such as Detecting and Preventing Leaks and Spills*
1100 - 1230	**Future of AI in Oil & Gas Industry** *Potential Future of AI in the Industry • The Challenges and Opportunities Associated with AI in the Industry*
1230 - 1245	*Break*
1245 - 1345	**Future of AI in Oil & Gas Industry (cont'd)** *Strategies for Successful Implementation of AI in the Industry*
1345 – 1400	**Course Conclusion** *Using this Course Overview, the Instructor(s) will Brief Participants about Topics that were Covered During the Course*
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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