

COURSE OVERVIEW LE0518
Petroleum & Petroleum Products Analysis

Course Title

Petroleum & Petroleum Products Analysis

Course Date/Venue

Session 1: April 13-17, 2025/Boardroom 1,
 Elite Byblos Hotel Al Barsha,
 Sheikh Zayed Road, Dubai, UAE
 Session 2: October 13-17, 2025/Fujairah
 Meeting Room, Grand Millennium
 Al Wahda Hotel, Abu Dhabi, UAE

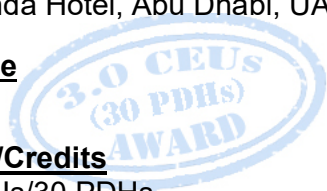


Course Reference

LE0518

Course Duration/Credits

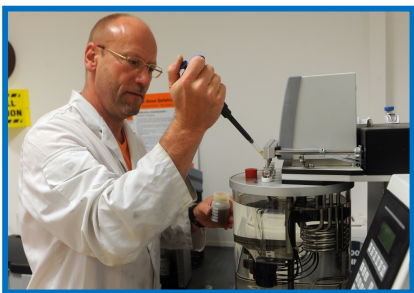
Five days/3.0 CEUs/30 PDHs



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 delegates with a detailed and up-to-date overview of crude and petroleum product specification and analysis. It covers the major classes of organic compounds found in crude oil as well as the crude oil classification; the essentials of crude oil and major crude oil assays including the analytical methods and their significance for crude oil classification; the schemes for crude oil specification and how these specifications affect marketing; and the crude oil quality and the effect of crude variability.



During this interactive course, participants will learn the crude variability and discuss ASTM and simulated distillation; the fundamental importance of data interpretation and distillation curves including the types of distillation and its significance to refining; the feed stocks, product streams, refining processes and products; the refining processes, auxiliary equipment and safety; the different products of oil refining and their environmental significance; the general sampling schemes for day to day operation (oil and gas) and the typical tests performed; and the crude oil economics covering the problems, dangers and the significance of non renewable.

Course Objectives

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

- Apply and gain an in-depth knowledge on crude and petroleum product specification and analysis
- Identify the major classes of organic compounds found in crude oil as well as the crude oil classification
- Analyze the essentials of crude oil and major crude oil assays including the analytical methods and their significance for crude oil classification
- Describe the schemes for crude oil specification and how these specifications affect marketing
- Discuss crude oil quality and the effect of crude variability
- Assess crude variability and discuss ASTM and simulated distillation
- Explain the fundamental importance of data interpretation and distillation curves including the types of distillation and its significance to refining
- Define feed stocks, product streams, refining processes and products
- Discover how contaminants may affect the refining processes, auxiliary equipment and safety
- Recognize the different products of oil refining and their environmental significance
- Discuss the general sampling schemes for day to day operation (oil and gas) and the typical tests performed
- Interpret crude oil economics covering the problems, dangers and the significance of non renewable

Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive “Howard 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 crude and petroleum products specification and analysis for engineers.

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 Certificate(s)

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


Certificate Accreditations

Certificates are accredited by the following international accreditation organizations:-

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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.

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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 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 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. Nikolas Karnavos, MSc, BSc, is a **Senior Analytical Chemist** with over **35 years** of extensive experience within the **Oil, Gas, Refinery and Petrochemical** industries. His expertise widely covers **Gas & Liquid Chromatograph Process Analysers, Process Analyzer Techniques (Online & Offline)**, Laboratory Information Management System (**LIMS**), **Data & Method Validation in Analytical Laboratories**, **Laboratory Automation Techniques, Practical Problem Solving in Chemical Analysis, Practical Statistical Analysis of Lab Data, Chemical Laboratory, Analytical Laboratory & Instrumentation, Laboratory Health & Safety, GLP, Laboratory Quality Management (ISO 17025), ISO 9001** and Medical Laboratory Quality Management (**ISO 15189**). Further, he is also well-versed in Environmental **Online Analyzers (Air & Water), Gas Chromatography** and various instrumental methods of analysis such as **Water Analysis & Quality Control, Water and Wastewater Chemical Analysis, Statistical Data and Laboratory Analysis, Gas Analysis, Qualitative Fuel Analysis, Environmental Chemical Analysis, Laboratory Environmental Analysis** including Water Quality Testing, Process Water and **Wastewater Effluents, Oily Sludge Treatment**, Atomic Absorption and Spectroscopic Methods in Analytical Chemistry, **Analytical Method Development** and **Methods of Environmental Measurements (Water, Air, Liquid & Solid Wastes)**.

Mr. Karnavos was the **Laboratory Manager** of **Exxon** wherein he was responsible for **ISO 17025 certification**, upgrading laboratory equipment in **refinery, petrochemical** and **polypropylene** plants, upgrading and extending LIMS, handling the transition plan process of the existing laboratory to a new as well as formulating and executing the plans for applied research and technology transfer. During his career life, he had occupied several significant positions as the **Laboratory Analyst, Laboratory Professor, Quality Manager, Partner & Managing Director, Environmental Engineer, Process Engineer, Environmental Management Corporate Department Head** and **Quality Control & Plastics Application Head** with different international companies like the **AQUACHEM, Hellenic Petroleum (EXXON)** and **Technological Institute**.

Mr. Karnavos holds a **Master degree in Chemical Engineering** and **Bachelor degrees in Mechanical Engineering and Petroleum Engineering** from the **Aristotelian University of Thessaloniki, Technological Institute and KATEE Kavala** respectively. He is an **Accredited Trainer** for the Organization for the Certifications & Vocational Guidance (**EOPPEP**), a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM)**, a **Certified Instructor/Trainer** and an **Accredited Environmental Auditor** from the **IEMA**. Further, he is the **President of Greek Association of Chemical Engineers** and an active member of various professional engineering bodies internationally like the **IEMA, Technical Chamber of Greece** and the **CONCAWE**. He also **published numerous books and scientific papers** and delivered various trainings and workshops worldwide.

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	The Major Classes of Organic Compounds Found in Crude Oil
0930 – 0945	Break
0945 – 1100	Crude Oil Classification
1100 – 1230	The Essentials of Crude Oil Analysis and Major Crude Oil Assays
1230 – 1245	Break
1245 – 1420	The Essentials of Crude Oil Analysis and Major Crude Oil Assays (cont'd)
1420 – 1430	Recap
1430	Lunch & End of Day One

Day 2

0730 – 0930	The Analytical Methods and Their Significance for Crude Oil Classification
0930 – 0945	Break
0945 – 1100	Schemes for Crude Oil Specification and How These Specifications Affect Marketing
1100 – 1230	Crude Oil Quality and the Effect of Crude Variability on it
1230 – 1245	Break
1245 – 1420	How to Assess Crude Variability
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3

0730 – 0930	ASTM & Simulated Distillation
0930 – 0945	Break
0945 – 1100	The Fundamental Importance of Data Interpretation and Distillation Curves
1100 – 1230	The Types of Distillation and the Significance to Refining
1230 – 1245	Break
1245 – 1420	The Types of Distillation and the Significance to Refining (cont'd)
1420 – 1430	Recap
1430	Lunch & End of Day Three

Day 4

0730 – 0830	Feed Stocks and Product Steams
0930 – 0945	Break
0945 – 1100	Refining Processes and Products
1100 – 1230	How Contaminants may Affect the Refining Processes, Auxiliary Equipment and Safety

1230 – 1245	<i>Break</i>
1245 – 1420	<i>How Contaminants may Affect the Refining Processes, Auxiliary Equipment and Safety (cont'd)</i>
1420 – 1430	<i>Recap</i>
1430	<i>Lunch & End of Day Four</i>

Day 5

0730 – 0930	<i>The Different Products of Oil Refining and their Environmental Significance</i>
0930 – 0945	<i>Break</i>
0945 – 1100	<i>The General Samplings Schemes for Day-to-Day Operation (Oil and Gas) and the Typical Tests Performed</i>
1100 – 1230	<i>Crude Oil Economics: Problems & Dangers and the Significance of Non-Renewable (cont'd)</i>
1230 – 1245	<i>Break</i>
1245 – 1345	<i>Crude Oil Economics: Problems & Dangers and the Significance of Non-Renewable</i>
1345 – 1400	<i>Course Conclusion</i>
1400 – 1415	<i>POST-TEST</i>
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

Practical Sessions

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



Course Coordinator

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