

## **COURSE OVERVIEW DE0804**

### **Special Core Analysis for Reservoir Engineers**

#### **Course Title**

Special Core Analysis for Reservoir Engineers  
(E-Learning Module)

#### **Course Reference**

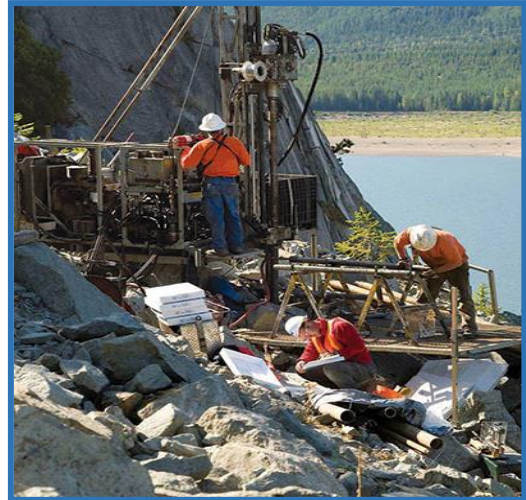
DE0804

#### **Course Format & Compatibility**

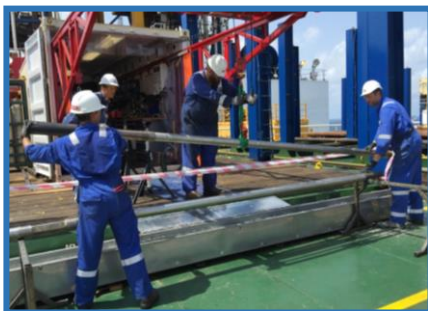
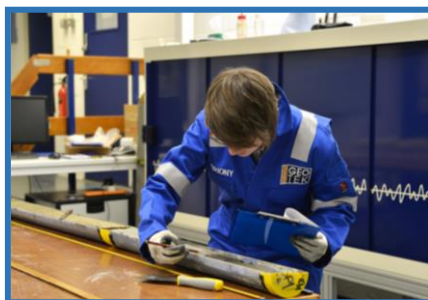
SCORM 1.2. Compatible with IE11, MS-Edge, Google Chrome, Windows, Linux, Unix, Android, IOS, iPadOS, macOS, iPhone, iPad & HarmonyOS (Huawei)

#### **Course Duration**

30 online contact hours  
(3.0 CEUs/30 PDHs)



#### **Course Description**



This E-Learning course is designed to provide participants with a detailed and up-to-date overview of special coring and core analysis. It covers the core sample preparation and core drying methods; the reservoir fluid properties, reservoir rocks, characteristics of reservoir rocks and source of data for coring; the rock matrix and pore space, four major components of sandstone, coring assembly and core bit; the whole core sampler, side-wall core sampler, whole core, sidewall sampling gun and sidewall coring tool; the whole core analysis versus plugs or sidewall cores; and the information from cores, wellsite core acquisition and the roles and responsibilities of coring team.

During this course, participants will learn the liner type of fiberglass and aluminium fluted including its advantages and disadvantages; the laboratory core processing and core sample preparation; the advantages and disadvantages of flow-through cleaning system, standard Soxhlet extraction (cleaning system) and flush through (flow through) core cleaning system; the advantages and disadvantages of conventional oven drying and humidity oven drying; the preparation of RCA sample, permeability and Darcy's law; the whole core analysis measurements, CT scanning, core plugging, core photography and imaging; and the flow chart for laboratory processing of friable, weak and unconsolidated core.

### **Course Objectives**

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

- Apply and gain an in-depth knowledge on special core analysis
- Carryout special coring and core analysis, core sample preparation and core drying methods
- Identify reservoir fluid properties, reservoir rocks, characteristics of reservoir rocks and source of data for coring
- Recognize rock matrix and pore space, four major components of sandstone, coring assembly and core bit
- Determine whole core sampler, side-wall core sampler, whole core, sidewall sampling gun and sidewall coring tool
- Differentiate whole core analysis versus plugs or sidewall cores
- Review the information from cores and describe wellsite core acquisition and the roles and responsibilities of coring team
- Recognize the liner type of fiberglass and aluminium fluted including its advantages and disadvantages
- Illustrate laboratory core processing and core sample preparation as well as discuss the advantages and disadvantages of flow-through cleaning system, standard soxhlet extraction (cleaning system) and flush through (flow through) core cleaning system
- Explain the advantages and disadvantages of conventional oven drying and humidity oven drying
- Prepare RCA sample and discuss permeability and Darcy's law
- Employ whole core analysis measurements, CT scanning, core plugging, core photography and imaging
- Review the flow chart for laboratory processing of friable, weak and unconsolidated core

### **Who Should Attend**

This course provides an overview of all significant aspects and considerations of special core analysis for reservoir engineers.

### **Training Methodology**

This Trainee-centered course includes the following training methodologies:-

- Talking presentation Slides (ppt with audio)
- Simulation & Animation
- Exercises
- Videos
- Case Studies
- Gamification (learning through games)
- Quizzes, Pre-test & Post-test


Every section/module of the course ends up with a Quiz which must be passed by the trainee in order to move to the next section/module. A Post-test at the end of the course must be passed in order to get the online accredited certificate.

**Course Certificate(s)**

Internationally recognized certificates will be issued to all participants of the course.

**Certificate Accreditations**

Certificates are accredited by the following international accreditation organizations: -


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USA International Association for Continuing Education and Training (IACET)

Haward Technology is an Authorized Training Provider by the International Association 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 1-2013 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 1-2013 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 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.

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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.

**Course Fee**

As per proposal

## Course Contents

- Special Coring & Core Analysis
- Introduction
- Core Sample Preparation
- Core Drying Methods
- Reservoir Fluid Properties
- Reservoir Rocks
- Characteristics of Reservoir Rocks
- Source of Data: Coring
- Rock Matrix and Pore Space
- Four Major Components of Sandstone
- Four Components of Sandstone
- Coring Assembly and Core Bit
- Coring
- Whole Core Sampler
- Side-Wall Core Sampler
- Whole Core
- Sidewall Sampling Gun
- Sidewall Coring Tool
- Whole Core Analysis vs. Plugs or Sidewall Cores
- Information from Cores
- Course Recap
- Wellsite Core Acquisition
- Roles and Responsibilities of Coring Team
- Liner Type: Fiberglass
- Advantages
- Disadvantages
- Liner Type: Aluminum Fluted
- Advantages
- Disadvantages

- Coring Report
- Rotary Sidewall Coring
- Laboratory Core Processing
- Core Sample Preparation
- Advantages and Disadvantages of Flow-Through Cleaning System.
- Advantages and Disadvantages of Standard Soxhlet Extraction (Cleaning System).
- Advantages and Disadvantages of Flush Through (Flow Through) Core Cleaning System.
- Core Sample Preparation
- Conventional Oven Drying Advantages and Disadvantages
- Humidity Oven Drying Advantages and Disadvantages
- Critical Point Drying Oven Advantages and Disadvantages.
- Dessicator Used for Humidity-Conditioned Drying Over Saturated Salt Solution.
- Flow Chart for Cleaning Halite-Cemented Samples.
- Preparations for RCA Sample
- Preparations for RCA
- Permeability
- Darcy's Law
- Whole Core Analysis
- Whole Core Analysis Measurements
- Example RCA Workflow
- CT Scanning
- Core Plugging
- Core Plugs Drilling Press
- Core Photography & Imaging
- Photograph of Resinated Biscuit Core Slab
- Photograph of Photographed Core in Core Laboratory
- Digital Photograph of Core Under White Light (Left) and UV Light (Right)
- Flow Chart for Laboratory Processing of Friable, Weak and Unconsolidated Core.
- Photograph of Digital Image Scan At 360°
- Photograph of Core Samples In Core Storage Area
- Photograph of Preserved Cores By Wax Coating, Under Formation Fluids And In Anaerobic Jars