



e-Learning and Knowledge Solutions

IPIMS

Product Development and Content Updates

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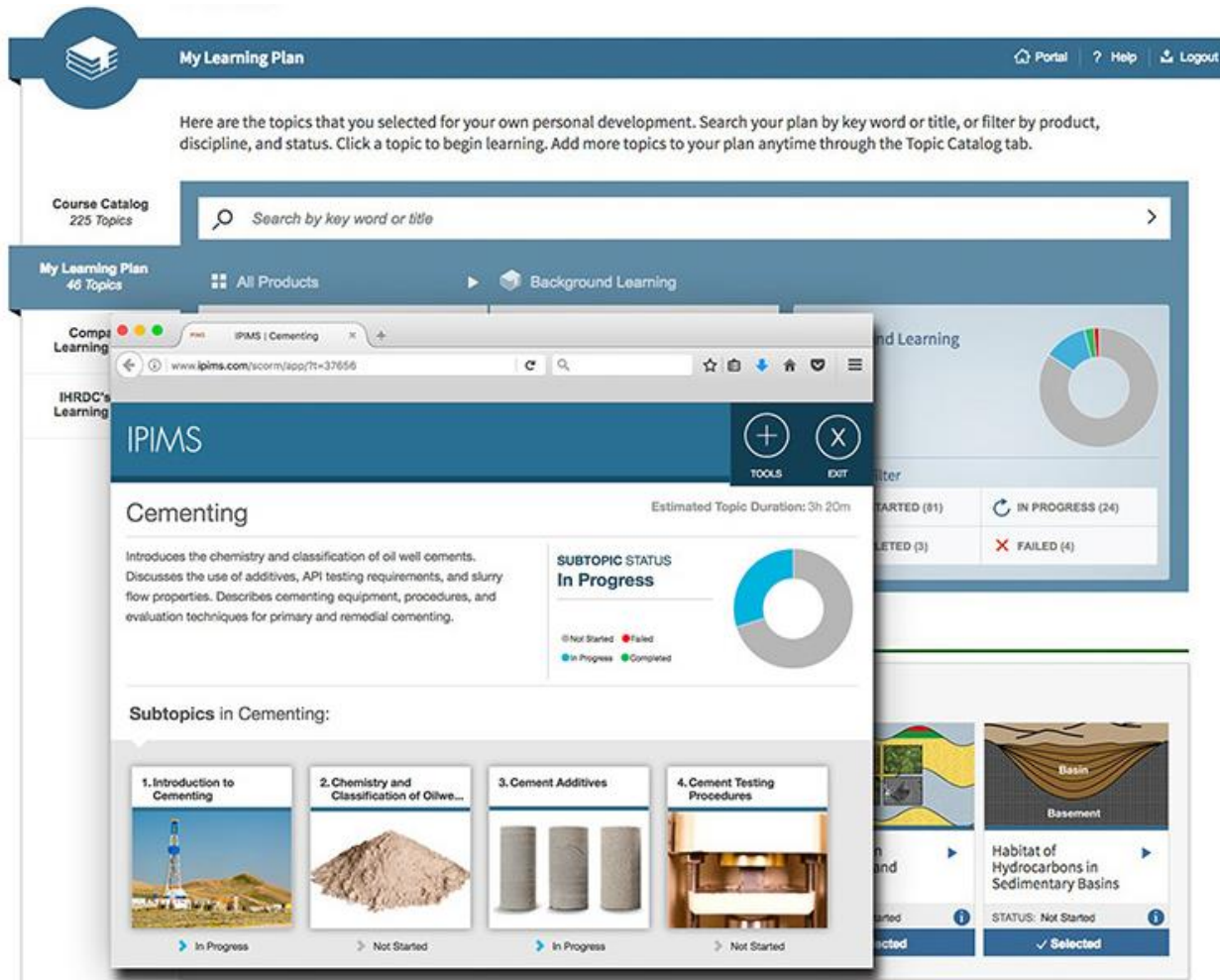
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What is IPIMS?

IPIMS is IHRDC's award-winning e-Learning solution developed in partnership with industry experts from 10 major oil and gas companies, covering all areas of upstream petroleum technology. If you are looking to build or expand the competencies of your exploration and production professionals, your solution is IPIMS.



With its extensive content, award-winning video, and rigorous assessments, IPIMS is flexible enough to adapt to your specific needs. Whether you want to train 5,000 people in one E&P topic area, or 50 people in 20 topic areas, IPIMS can meet your unique learning and development objectives.

Our IPIMS solution delivers two levels of learning. With Background Learning, your users gain knowledge, and procedural acumen, and with Action Learning, they master practical applications through real-life assignments.

Together, these two types of learning in Upstream Technology can help your learners progress through the Awareness, Basic Application, and Skilled Application levels of competency, to meet your E&P technology and practice needs.

IPIMS Development Planning

In 2015 IHRDC committed to a major long term investment of resources to thoroughly renew IPIMS content in all four of its major disciplines. Since then, we have completely updated 44 of 143 Topics with current technological content, new graphics, videos, animations, interactive content, Knowledge Checks, and multi-format assessments.

Each year, we use several criteria for prioritizing Topics for updating, which include:

- How outdated is the topic? Some subject areas change more rapidly than others.
- How important is the topic to our clients? Course usage statistics show popularity of candidate topics.
- What are we hearing directly from clients? We review the comments and star ratings that we receive from clients who have taken the courses. We also proactively solicit input on the topic areas that are most important to clients.

Each Topic update requires a multidisciplinary team and several phases of development:

1. Subject matter experts (IHRDC discipline managers and external industry experts) review the content and propose the scope of the required updates.
2. The SME then researches and updates the content, and creates knowledge checks, assignments, and assessments.
3. The revised content is thoroughly reviewed and modified as needed by the IHRDC discipline manager.
4. All parts of the updated topic then go through a rigorous instructional design process, a final review by the discipline manager, and proofreading.
5. Graphic designers create the new graphics and animations.
6. New videos are scripted, storyboarded, and produced by a team of animators and video editors.
7. The IPIMS production staff creates the structure and converts the final content for online presentation.
8. After thorough integration review and QA, the updated IPIMS Topic is released.

2020-2021 IPIMS Release Plan*

	Released YTD	Q3/Q4 2020 Plan	Q1/Q2 2021 Plan
Petroleum Geophysics	Basic Seismic Processing	3D and 4D Seismic	Introduction to Field Work
Petroleum Geology	Hydrocarbon Traps		Basin Analysis Play Analysis
Petroleum Engineering	Perforating	Oil and Gas Pipelines	Sand Control
Formation Evaluation		Well Logging Tools and Techniques	Specialized Well Log Interpretation

*The 2020-2021 Release Plan is subject to change due to input from clients and resource allocation.

Updated and New Topics Released to Date

Petroleum Geophysics

- Hydrocarbon Indicators
- Seismic Interpretation of Shales
- Seismic Stratigraphic Modeling
- Fault Interpretation
- Seismic Contouring
- Velocity Interpretation and Depth Conversion
- Basic Seismic Interpretation
- Gravity and Magnetics
- Seismic Pulse
- Seismic Reflection
- Fundamentals of Exploration Geophysics
- Waveform to Geologic Model
- Signal Theory: A Graphical Introduction
- 3D and 4D Seismic Modeling, Design and Acquisition

Formation Evaluation

- Well Log Interpretation Essentials
- Overview of Formation Evaluation
- Logging Equipment and Procedures
- Coring
- Core Analysis
- Dipmeter Surveys

Petroleum Engineering

- Risk Analysis Applied to Petroleum Projects
- Resources and Reserves Estimation
- Completion Equipment
- Basic Completion Design and Practices
- Hydraulic Fracturing
- Fluid Flow and the Production System
- Slickline Well Intervention (NEW)
- Coiled Tubing Well Intervention (NEW)
- Artificial Lift Methods
- Cementing
- Electric Line Well Intervention (NEW)
- Overview of Rigless Well Intervention (NEW)

Petroleum Geology

- Reservoirs
- Hydrocarbon Generation and Migration
- Petroleum Geomechanics
- Plate Tectonics and Sedimentary Basins
- Subsurface Environment
- Fundamentals of Petroleum Geology
- Hydrocarbon Properties
- Structural Geology

Multi-Disciplinary

- Introduction to Unconventional Resources

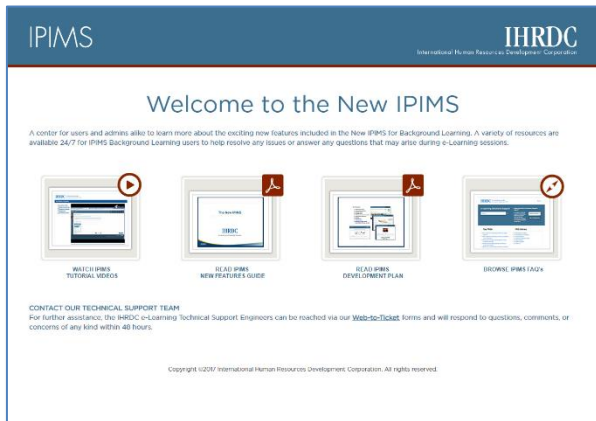
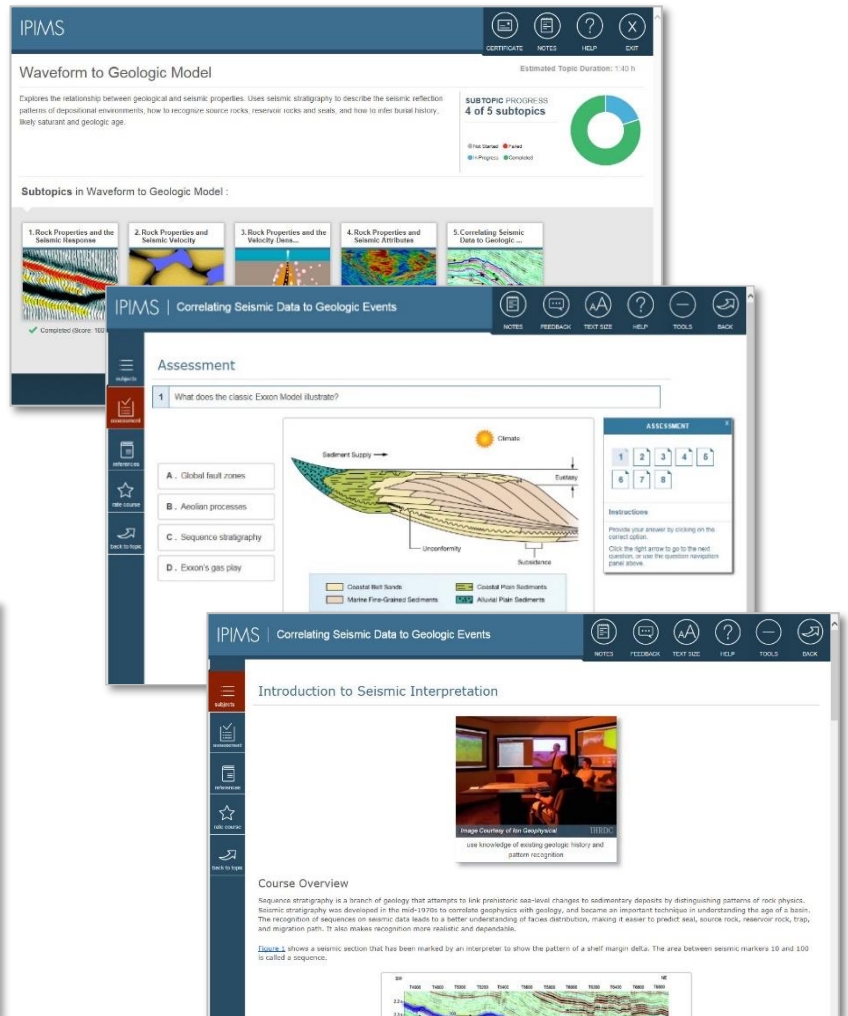
IPIMS Features & Functionality

The IPIMS interface, drawing on the industry’s best instructional design methodologies and technological developments, provides a user-friendly and enjoyable e-Learning experience.

The assessment engine employs multiple question formats, such as drag and drop image identifier, sequencing, and multiple response. In addition, the assessment engine randomly selects the subject-level assessment questions a learner receives from a pool of questions for the course.

Features

- Tablet-friendly interface
- iOS and Android compatible
- Interactive Content
- Knowledge Checks
- Multiple format assessment questions
- Scenario-based Assignments
- Draft Pad
- Contextual Help
- Remastered videos
- [IPIMS Resource Center](#) includes: Tutorial Videos, PDF Guides, and FAQs



Action Learning

The Action Learning interface is very similar to Background Learning. The overall structure, content and “learn by doing” aspects of Action Learning remain the same, and the ease of use and intuitiveness of the new interface makes it engaging and easy to use.

Assessment Engine

View of References and Background Knowledge

Sample Number	Interval (ft) From to	Horiz. Perm., md (air)	Vert. Perm., md (air)	Por., % (He)	Grains Density, g/cc	Description
1	13825.0 - 13830.0					Clay/Schist
2	13830.0 - 13831.0	0.5	0.14	8.0	2.70	Sandstn, gray, coarse-fine grain, poor sorting, well-sorted, calcareous-clay
3	13836.0 - 13837.0	25.0	41.0	11.5	2.68	Sandstn, gray, coarse-fine grain, poor sorting, well-sorted, slightly calcareous, horiz/vert fractured
4	13837.0 - 13838.0	9.1		12.1	2.67	Sandstn, gray, coarse-fine grain, poor sorting, well-sorted, slightly calcareous, horiz/vert fractured
5	13838.0 - 13839.0	5				Sandstn, gray, med-fine grain, poor sorting, well-sorted, clay

Module Progress View

IPIMS Search Functionality

IPIMS includes a Search Engine and Background Knowledge 'Browse by Discipline' functionality.

Search Subject Pages

The screenshot shows the IPIMS search interface with the search term 'wireline logging'. The results are categorized into three sections:

- Wireline Logging Tools:** Describes the process of wireline logging, mentioning the coordination of components like the tool on the end of the logging cable, the cable itself, and the controlling and recording apparatus on the ground surface.
- Scope and Objectives:** Explains that well logging provides a way to measure formation properties using instruments run into the borehole at the end of a wireline, or the end of a drill string, or the end of coiled tubing.
- Well Evaluation:** States that the wellsite geologist has an important part to play when the well is encountered as the well is deepened.

Search Images

The screenshot shows the IPIMS search interface with the search term 'sand control'. The results are categorized into four image-based sections:

- Rate Control and Arching Effects:** Includes a graph showing pressure or flow characteristics.
- Liner Completions:** Shows a cross-section diagram of a wellbore with a liner.
- Sand Control:** Shows a diagram of a wellbore with sand control equipment.
- Sand Control:** Shows another diagram of a wellbore with sand control equipment.

Search Videos

The screenshot shows the IPIMS search interface with the search term 'wireline logging'. The results are displayed as a grid of video thumbnails, each with a play button icon:

- Wireline Logging Tools**
- Scope and Objectives**
- Well Evaluation**
- MWD and LWD Systems**

Instructional Integrity and Design

As important as thorough content updating is, so is sound instructional design and quality technical writing. Our in-house instructional design team works with our SMEs and discipline managers to organize and present complex technical content in an understandable and engaging manner.

Drag the basin type to match with the correlating area on the image.

Foreland Basin

Fore-arc Basin

Deltas & Fans

Cratonic Sag Basin

RESET SUBMIT

Every section of each course provides **knowledge checks** to check and reinforce learning. Learners get immediate constructive feedback. Question formats vary from multiple choice to drag & drop to image hotspot identification.

Content is presented in a number of **interactive formats** such as a before and after “slider” tool, which is especially effective in seismic studies. Another interactive format is a media panel with which multiple images can be compared by scrolling left and right.

Post-mining Land Reclamation
Move the slider left and right.

Figure 11: Post-mining land reclamation in Alberta, Canada

Identifying Traps in Seismic Sections
Click or swipe left or right to see more content.

Anticline Example
An anticline is a dome-shaped feature formed by compressional forces, where force is applied to a series of sedimentary rock layers that allow those layers to bend and fold. The result is a convex upward structure known as an anticline, which then acts as an area in which hydrocarbons can potentially accumulate. **Figure 10** illustrates an anticline with the possible location of hydrocarbons and lists a corresponding seismic image as an example.

Anticline

Seismic Image of Anticline

Figure 10: Anticline: potential location of hydrocarbons with seismic example.

Instructional Design and Integrity (continued)

In each course, the learner is also presented with real-world **assignments** such as a problem to solve with given data or a short discussion about a particular concept within the course.

What casing pressure at the point of injection is needed to open a gas lift valve with the following specifications, where the tubing pressure at the point of injection (P_{prod}) is 420 psi?

- Valve outside diameter = 1.5 inches
- Effective bellows area $A_b = 0.77$ inches
- Port size = $\frac{5}{16}$ inch
- Effective port area (A_p , including lapped seat) = 0.08 inch
- Bellows pressure (P_d , corrected to valve depth) = 580 psi
- $(P_{inj})_{open} = \frac{P_d - P_{prod} \cdot R}{1 - R}$, where $R = \frac{A_p}{A_b}$

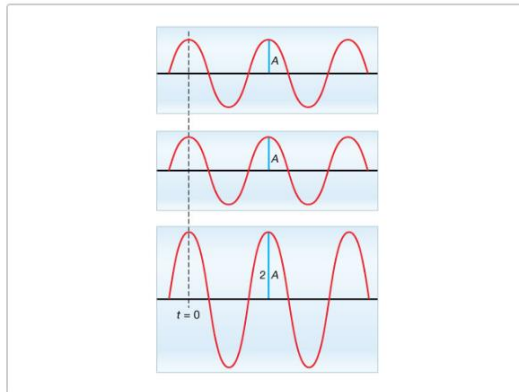
Solution

[click to display solution](#) ▾

Assessment

5 In the image below, the top and middle waveforms have the same frequency and amplitude, but are in different phases. What is the amplitude of the bottom waveform if the phase of the top and middle waveforms are 360° ?

- A. Half
- B. Indeterminate
- C. Double
- D. Linear



Assessments ensure that the learning objectives are met. Like knowledge checks, assessment questions are presented in a wide range of engaging formats. Assessment questions are randomly generated from a larger pool of questions, so that on retaking the assessment, the learner sees a different set of questions for the subject matter.

IPIMS 2020 Client List

Integrated Oil Company

BP plc
Mitsubishi Corporation Exploration Co., Ltd.

National Oil Company

CNOOC Uganda Limited
Japan Oil, Gas and Metals National Corporation
(JOGMEC)

Petroleum Agency SA
PTT Exploration and Production Public Company Ltd.
Saudi Aramco
Qatar Petroleum (QP)
Sonatrach
Sonatrach Ourhoud

Upstream

Addax Petroleum Cameroon
California Resources Corporation
CEPSA E&P
ConocoPhillips
DCP Midstream
E&B Natural Resources
Empresa Nacional de Hidrocarbonetos de Mozambique
Foundation Energy Management, LLC
Hess Corporation
Hunt Oil Middle East Limited
Husky Energy
INPEX Corporation
LUKOIL Mid-East Ltd.
Mari Petroleum Company Limited
Mitsui Oil Exploration Co. Ltd.
Oando PLC
North Oil Company (NOC)
Occidental Petroleum Corporation
Orient Petroleum
Origin Energy (Australia)
Pakistan Petroleum Limited
PT Pertamina Hulu Mahakam
Rumaila Operating Organization (ROO)
Santos - Australia
Scientific Drilling International UAE
South Atlantic Petroleum Limited
Suncor Energy Inc.
Tarbagatay Munay
United Energy Pakistan

Wentworth
Tullow Ghana
United Energy Pakistan
Wentworth - Course Usage
Wintershall Holding AG

Midstream

CHS, Inc.
Marathon Petroleum Corporation
Oman Refineries and Petrochemicals Company (ORPIC)
Phillips 66
Qatar Chemical Company LTD.

Midstream

Angola LNG
CHS McPherson Refinery
Philadelphia Energy Solutions (PES)

Service Company

Alvarez & Marsal Business Consulting
BJ Services
Deloitte
Equion Energia Limited
Expro Group
Halliburton Energy Services Group
ILF Consulting Engineers Austria GmbH
Infosys
LANXESS Canada Co./Cie
Osaka Gas USA Corporation
Petroleum Geo-Services
Schlumberger
TechnipFMC-USA
Wipro Technologies

Government

Bureau of Ocean Energy Management
Directorate General of Hydrocarbons (DGH India)

Industrial

HeidelbergCement Technology Center GmbH

Professional Association

Society of Exploration Geophysicists (SEG)
Society of Petroleum Engineers (SPE)

Academic

Cameroon Petrochemical Engineering Academy (CPE)
Eduardo Mondlane University
King Fahd University of Petroleum and Minerals

IHRDC e-Learning Solutions Product Series

Oil & Gas Business

The Petroleum Online series covers the entire oil and gas value chain and provides a comprehensive overview of the oil and gas industry. It is ideal for those who seek a solid foundation in oil and gas industry business fundamentals.

Upstream Technology

IPIMS is designed for technical staff working in the Exploration and Production (E&P) sector, and these courses enhance their knowledge of the best practices and theories in the industry. It provides two levels of instruction and covers geology, geophysics, petroleum engineering, drilling, formation evaluation, reservoir engineering, and production.

Operations & Maintenance

These courses provide the tools and knowledge that operators and maintenance technicians need to run plants safely and effectively. The courses can be organized in a competency-based approach to ensure workers perform their jobs properly. They cover relevant theories, plant processes, equipment, maintenance, and operations.

Business Essentials

The MBA-level e-Learning courses in key business management areas explore finance, communications, human resource management, project management, marketing, innovation, risk management, and sustainable management. They are developed in partnership with a leading Boston-based business school and ideal for meeting the needs of oil and gas industry professionals.